



# Traffic Impact Assessment Report

## Nyora Development Strategy – Town Centre Masterplan

Prepared For  
**South Gippsland Shire Council**

June, 2016  
19584R#2

Traffic Impact Assessment Report  
Nyora Development Strategy – Town Centre Masterplan

# Traffic Impact Assessment Report

## Nyora Development Strategy – Town Centre Masterplan

### Document Control

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19584R#2

Ordinary Meeting of Council No. 411 - 26 April 2017

**Traffic Impact Assessment Report**  
Nyora Development Strategy – Town Centre Masterplan

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## Traffic Impact Assessment Report Nyora Development Strategy – Town Centre Masterplan

### 1 Introduction

Traffix Group has been engaged by South Gippsland Shire Council as part of a consultant team led by Planisphere for the preparation of the Nyora Development Strategy.

This report provides a Traffic Impact Assessment (TIAR) of the proposed Nyora Town Centre Masterplan.

### 2 Existing Conditions

Traffix Group has previously prepared a 'Background Summary Report' as part of the earlier stages of the project (Our Ref: 19584R#1C). This report should be referred to for existing conditions information including the following:

- road network details (i.e. surface materials, carriageway widths, and speed limits),
- traffic volumes,
- crash statistics,
- footpaths, and
- public transport.

Our Background Summary Report is attached at Appendix A.

### 3 Town Centre Masterplan

The proposed Nyora Town Centre Masterplan (TCMP) is provided at Section 4.1 of the Nyora Development Strategy.

The proposed Town Centre Masterplan area is primarily bounded by Mitchell Street (to the north), Hewson Street (to the south), Henley Street (to the west) and Davis Street (to east). Additionally, the masterplan area includes a small number of commercial zoned properties on the east side of Davis Street as shown at Figure 1.

The objective of the Nyora Town Centre Masterplan is to provide a concept layout of land allocations and spatial arrangements for the town centre. It is noted that the layout and land-uses shown on the Masterplan are indicative only and may be subject to changes in the future when the town centre develops.

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Figure 1: Town Centre Masterplan Area

## 4 Traffic Engineering Assessment

### 4.1 Road Network

The key roads within the TCMP are summarised following:

#### 4.1.1 Davis Street

Davis Street is an arterial road managed by VicRoads and is aligned in a north-south direction in the vicinity of the town centre. Davis Street accommodates a single traffic lane in each direction. The existing carriageway of Davis Street is to be retained.

A footpath is proposed along the west side whilst a shared path is proposed along the east side of Davis Street through the town centre.

#### 4.1.2 Mitchell Street

Mitchell Street is a local street aligned in an east-west direction. As part of the TCMP, Mitchell Street is to be prioritised as the 'main street' for Nyora.

The carriageway for Mitchell Street (between Davis Street and Henley Street) is proposed to be widened to approximately 11.6m. This carriageway width will provide parallel kerbside parking on both sides whilst accommodating simultaneous two-way traffic.

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Mitchell Street has an existing footpath along its south side which is proposed to be widened. A new shared path is proposed along the north side of Mitchell Street.

#### 4.1.3 Hewson Street

Hewson Street is a local street aligned in an east-west direction. As part of the TCMP, Hewson Street will have more importance as the primary carpark and loading access route for the town centre.

The carriageway width for Hewson Street is proposed to be widened to 7.3m. This carriageway width is sufficient to accommodate simultaneous two-way traffic when vehicles are parked on one side of the road only. It is recommended that parking is banned on one side of the road to ensure this is permanently possible.

Footpaths are proposed along both sides of Hewson Street.

#### 4.1.4 Henley Street

Henley Street is a local street aligned in a north-south direction.

The carriageway width for Hewson Street is proposed to be widened to at least 7.3m, noting that the existing carriageway is wider than this to the north of the Nyora Town Hall (approximately 9.7m). This carriageway width is sufficient to accommodate kerbside parking on both sides and a single lane of through traffic. Alternatively, simultaneous two-way traffic when vehicles are parked on one side of the road only.

#### 4.1.5 Laneway

An existing unsealed laneway is aligned in an east-west direction through the town centre. This laneway provides rear access to existing commercial zoned land fronting Mitchell Street

As part of the TCMP, this laneway is proposed to be upgraded to a sealed carriageway with footpaths on both sides.

It likely that this laneway will operate in one-way direction (eastbound) in the future.

## 4.2 Key Intersections

Improvements are proposed at the following key intersections located within the town centre:

#### 4.2.1 Davis Street / Mitchell Street / Grundy Avenue

A concept roundabout layout has been prepared by Traffix Group for the Davis Street/Mitchell Street/Grundy Avenue intersection to replace the existing unsignalised cross-intersection. This concept plan is attached as an appendix to the Nyora Development Strategy report.

The concept roundabout has been designed to accommodate B-double truck movements in a north-south direction given that Davis Street is an approved B-double route. Furthermore, the roundabout has been designed to accommodate rigid truck movements (up to 12.5m in length) to/from Mitchell Street and Grundy Avenue.

The concept roundabout layout includes a single lane on each approach and departure and a single circulating lane. This roundabout layout will be more than sufficient from a capacity point of view to accommodate the predicted ultimate traffic volumes as presented later in this report at Section 4.4.

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### Nyora Development Strategy – Town Centre Masterplan

#### 4.2.2 Davis Street / Hewson Street

Traffix Group has prepared a concept intersection layout for improvements at the Davis Street/Hewson Street intersection.

Hewson Street will become the primary access to the town centre carpark and loading areas. The potential large long-term supermarket will likely have deliveries undertaken by 19m semi-trailers.

Accordingly, the concept layout for the Davis Street/Hewson Street intersection has been designed to accommodate 19m semi-trailer movements between Davis Street and Hewson Street.

The existing carriageway width of Davis Street is sufficient for linemarking of two (2) southbound traffic lanes which provides for a southbound vehicle to pass a vehicle that is 'propped' waiting to turn right into Hewson Street.

#### 4.3 Car Parking Provision Assessment

We have undertaken a car parking assessment for the TCMP based on the potential future uses and floor areas identified.

The TCMP identifies the following:

- Supermarket – short-term 1,000m<sup>2</sup>, long-term 3,800m<sup>2</sup>
- Commercial/Medical – 600m<sup>2</sup>
- Proposed commercial/medical properties along Hewson Street (identified in grey)
- Community Hub – 900m<sup>2</sup>
- Existing commercial zoned land along Mitchell Street
- Existing commercial zoned land along Davis Street

For the purposes of our assessment, we have made the following assumptions:

- 40% of the total site area for existing commercial zoned land along Mitchell Street assumed to be leasable floor area. The rest will be for landscaping, car parking, etc.
- An average car parking generation rate of 4 spaces per 100m<sup>2</sup> leasable floor area for existing commercial zoned land and proposed commercial/medical. This is to account for a range of potential uses including shop, retail, food and drink premises, office, medical centre, etc.
- 20% discounting for total car parking demands to allow for multi-purpose trips and sharing of parking due to different uses peaking at different times.
- For the proposed commercial/medical properties along Hewson Street, we have assumed that the car parking requirement for any potential use will be accommodated on-site.
- For the existing commercial zoned land along Davis Street, we have assumed the car parking requirement for any potential use will be accommodated on-site.
- For the existing commercial zoned land along Mitchell Street, we have assumed that 25% of car parking demand would be generated by staff who can park within the rear of individual sites with access via the laneway.

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A detailed summary of our car parking assessment and other assumptions for the long-term scenario is attached at Appendix B.

We have estimated a total car parking provision of 376 car spaces for the town centre precinct. This includes off-street car parking identified on the TCMP as well as on-street car spaces along Mitchell, Henley and Hewson Streets. We have estimated the number of on-street spaces by assuming parallel parking along both sides of Mitchell Street and Henley Street (except where there is existing 90-degree parking) and on one side of Hewson Street.

We have calculated a potential long-term town centre car parking demand for 366 spaces which is exceeded by the total identified car parking provision for 376 spaces.

Based on the above assessment, we are satisfied that sufficient car parking appears to be identified for the potential long-term town centre outcome.

## 4.4 Traffic Impacts

As part of our involvement with the preparation of the Nyora Development Strategy, we undertook traffic modelling to determine ultimate daily traffic volumes throughout Nyora.

Our modelling was based on a high growth scenario and assumed maximum development potential throughout Nyora. Based on advice from Council, we adopted a daily traffic generation rate of 6 vehicle trip ends per allotment per day.

The predicted long-term traffic volumes in the vicinity of the town centre are shown below at Figure 2. Full output of our traffic modelling is attached as an appendix to the Nyora Development Strategy.

Our traffic modelling assumes that all traffic generated by the town centre would be internal trips generated by residential areas of Nyora (i.e. no vehicle trips from external areas given all surrounding townships already have a supermarket and other similar facilities).



Figure 2: Predicted Ultimate Daily volumes

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We are satisfied that the proposed road cross-sections and improvements in the vicinity of the town centre (as discussed previously) will adequately accommodate the potential ultimate traffic predicted to be generated by the town centre.

#### 4.5 Loading Arrangements

The potential loading routes for the Nyora TCMP are shown at Figure 3.

The east-west laneway will provide rear loading provision for the commercial zoned properties along the south side of Mitchell Street.

Loading access for larger trucks (potentially up to 19m semi-trailers for the supermarket) will be accommodated via Hewson Street and the proposed north-south access road. As previously discussed, the concept layout for the Davis Street/Hewson Street intersection has been designed to accommodate 19m semi-trailers.

We note that layout of the potential future supermarket will need to be designed to accommodate the relevant size trucks that are required.

We are satisfied that appropriate loading arrangements can be accommodated for the future Nyora town centre based on the TCMP.



Figure 3: Potential Loading Routes

## Traffic Impact Assessment Report Nyora Development Strategy – Town Centre Masterplan

### 4.6 Pedestrian and Cyclist Provisions

The TCMP identifies footpaths as a minimum on both sides of all roads within the town centre precinct. Furthermore, a shared path is identified along the northern side of Mitchell Street, eastern side of Davis Street and also the western side of Henley Street. A new pedestrian walkway is proposed between Mitchell Street and the centre of the town centre which will provide an important link for pedestrians.

This is a significant improvement to existing conditions where very limited footpaths are provided in Nyora as shown in our Background Summary Report.

Cyclists will be accommodated along each of the proposed shared path routes and also informally along all roads within the town centre.

As part of future town planning applications, bicycle parking for staff and customers will be required to be provided in accordance with the Planning Scheme rates under Clause 52.34. There is scope within the future town centre to provide bicycle parking rails at various locations including potentially within verges along Mitchell Street, Hewson Street and Davis Street.

We are satisfied that the TCMP identifies an appropriate level of pedestrian and cyclist provisions.

### 4.7 Public Transport

A V-Line bus service currently operates through Nyora along Lang Lang-Poowong Road (Davis Street). Existing bus stops are located on Davis Street just north and south of Mitchell Street for the northbound and southbound directions respectively.

As identified on the Town Centre Masterplan, the existing bus stops are proposed to be relocated to a more central and convenient location for the town centre on Davis Street to the south of Mitchell Street.

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Nyora Development Strategy – Town Centre Masterplan

## 5 Conclusions

Having undertaken a traffic engineering assessment of the proposed Nyora Town Centre Masterplan, we are of the opinion that:

- a) the proposed road cross-sections are consistent with what is required to accommodate appropriate carriageways, footpaths, services, etc. and appropriately facilitate all relevant user groups in accordance with relevant standards and current practice,
- b) the proposed intersection concept layouts have been designed to adequately accommodate the relevant design vehicle movements and provide an improved outcome for pedestrians,
- c) appropriate pedestrian and cyclist provisions are identified for the town centre,
- d) all relevant vehicles will be able to adequately access and circulate through the town centre including service and emergency vehicles,
- e) traffic predicted to be generated by the long-term growth scenario for Nyora will be adequately accommodated by the proposed road network and intersections, and
- f) there are no traffic engineering reasons why the proposed Nyora Town Centre Masterplan should not be adopted.



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## Appendix A: Background Summary Report



# Background Summary Report

## Nyora Development Strategy

Prepared For  
**South Gippsland Shire Council**

April, 2016  
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Background Summary Report  
Nyora Development Strategy

# Background Summary Report

## Nyora Development Strategy

### Document Control

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A	Draft	02/12/2015	B. Chisholm	N. Woolcock
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19584R#1C

Ordinary Meeting of Council No. 411 - 26 April 2017

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Appendix E: Crash Statistics Summary

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Nyora Development Strategy

# 1 Introduction

Traffix Group has been engaged by South Gippsland Shire Council as part of a consultant team led by Planisphere for the preparation of the Nyora Development Strategy.

This report provides a background summary of the traffic engineering related components of the project.

# 2 Existing Conditions

## 2.1 Study Area

The township of Nyora is located in South Gippsland, approximately 100km driving distance southeast of the Melbourne CBD. A locality plan of Nyora is presented at Figure 1.



Figure 1: Locality Plan

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A map of existing land zoning within Nyora is provided at Figure 2.

A large proportion of the town comprises low-density residential and rural living allotments. A general residential zone is located to the east and west of Davis Street which comprises more standard size allotments.

There are limited commercial uses within Nyora, consisting primarily of a small strip of commercial land along the south side of Mitchell Street and east side of Davis Street. Furthermore, there is a small area of light industrial land with a number of businesses along the north side of Watts Road.

Nyora Primary School and Nyora Recreation Reserve are located along Grundy Avenue.

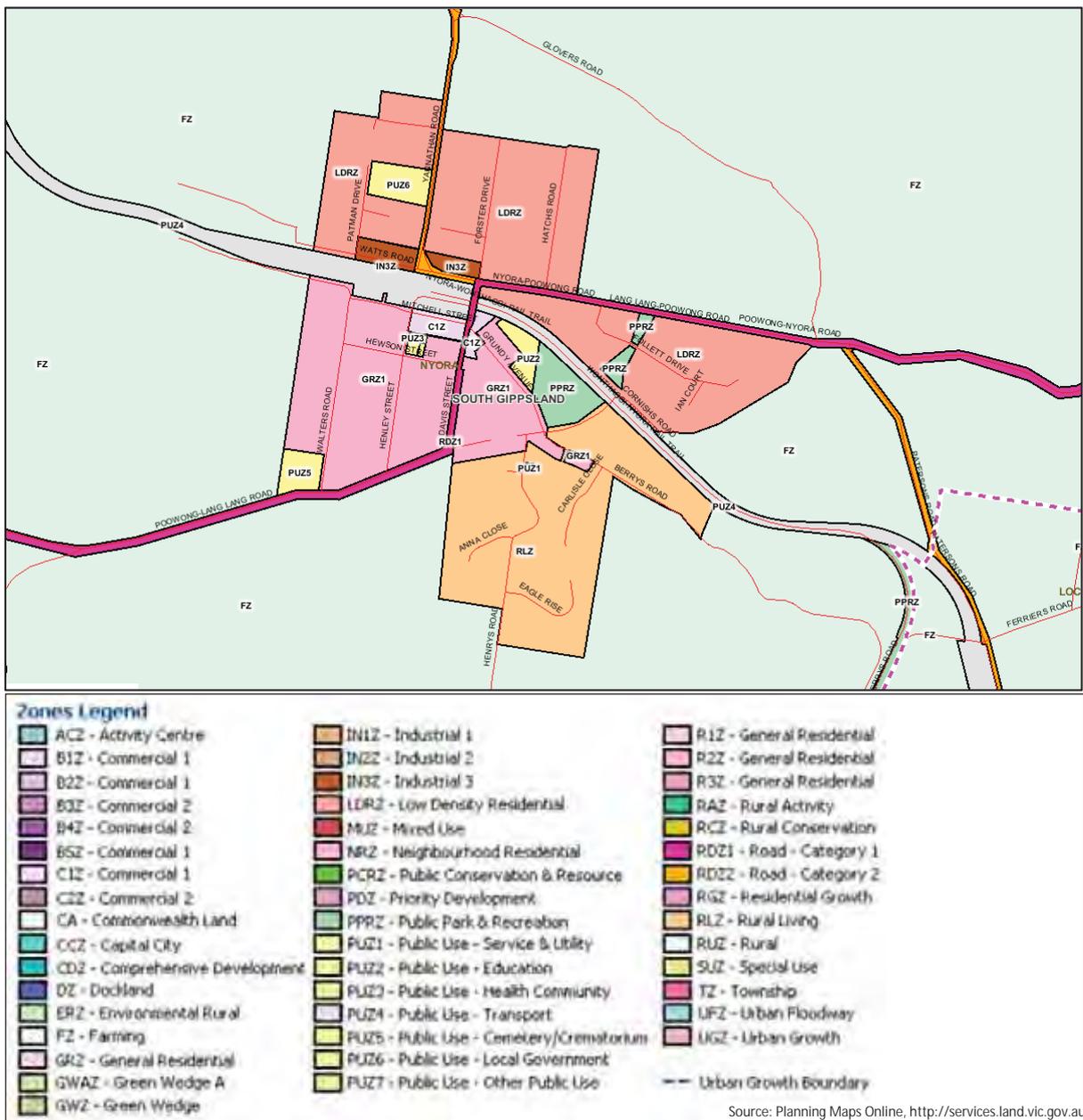


Figure 2: Planning Scheme Zoning Map

## Background Summary Report Nyora Development Strategy

### 2.2 Road Network

The key roads within the Nyora Township are as follows:

- **Lang Lang-Poowong Road (Davis Street)** is an arterial road managed by VicRoads and is zoned 'Road Zone Category 1' under the Planning Scheme. Lang Lang-Poowong Road is aligned in a general northeast-southwest orientation between South Gippsland Highway and southern boundary of the township. The road then deviates to a north-south orientation with this section through the tPown known as Davis Street. At Watts Road, Lang Lang-Poowong Road deviates to an east-west orientation towards Poowong to the east. Lang Lang-Poowong Road accommodates a single traffic lane in each direction.
- **Watts Road** is a higher order road managed by Council and is zoned 'Road Zone Category 2' under the Planning Scheme between Davis Street/Lang Lang-Poowong Road and Yannathan Road. To the east of Yannathan Road, Watts Road becomes a local access street and terminates to the west of Patman Drive.
- **Yannathan Road** is a higher order road managed by Council and is zoned 'Road Zone Category 2' under the Planning Scheme. Yannathan Road is aligned in a general north-south direction and accommodates a single traffic lane in each direction.
- **Mitchell Street** is a local street aligned in an east-west direction between Davis Street (to the east) and to the west of Walters Road where it terminates. The Nyora General Store and Post Office are located along the south side of Mitchell Street whilst Toby's Paddock located on the north side. Informal kerbside parking is generally accommodated along the south side of Mitchell Street between Davis Street and Henley Street.
- **Grundy Avenue** is a local street aligned in a general northwest-southeast orientation between Davis Street (to the northwest) and Cornishs Road (to the southeast). Several major land-uses within Nyora are located along Grundy Avenue including the primary school, recreation reserve and speedway.
- **Henley Street** is a local street aligned in a north-south orientation between Mitchell Street (to the north) and Lang-Lang Poowong Road (to the south). The Nyora Hall is located on the east side of Henley Street, between Mitchell Street and Hewson Street. Henley Street is unsealed to the south of Hewson Street.
- **Walters Road** is a local street aligned in a north-south orientation between Mitchell Street (to the north) and Lang-Lang Poowong Road (to the south). Walters Road is unsealed to the south of Hewson Street.

A summary table of existing road reservations and carriageway widths for all roads within the study area is attached at Appendix A.

A plan of existing road surfaces (sealed or unsealed) and unmade road reservations is attached at Appendix B.

A plan of existing speed limits within the Nyora Township is attached at Appendix C.

## Background Summary Report Nyora Development Strategy

### 2.3 Existing Traffic Volumes

We have reviewed traffic volume data provided to us by Council. This data was collected by traffic counts (tube counts) undertaken by Council at numerous locations throughout Nyora.

We have also reviewed traffic volume data along Lang Lang-Poowong Road provided by VicRoads. This includes Annual Average Daily Traffic (AADT) estimates for the year 2014.

The existing traffic volumes within Nyora are presented at Appendix D.

Overall, existing traffic volumes throughout Nyora were found to be reasonably low and well within acceptable operating capacities for each type of road. The highest traffic volumes were recorded along Yannathan Road and Watts Road (approximately 1,100 to 1,400 vehicles per day on each). These roads provide a connection between Nyora and Lang Lang. Traffic volumes along Lang Lang-Poowong Road (and Davis Street) were found to be less than 1,000 vehicles per day which is very low for an arterial road.

Traffic volumes along each of Mitchell Street and Grundy Avenue were found to be approximately 700 vehicles per day with lower traffic volumes recorded throughout the remainder of the township.

### 2.4 Pedestrian and Bicycle Facilities

There is currently limited existing pedestrian and bicycle facilities within Nyora.

Footpaths are currently provided within Nyora as follows:

- Mitchell Street – south side between Davis Street and Henley Street
- Henley Street – east side between Mitchell Street and the south boundary of Nyora Hall
- Davis Street – both sides just south of Mitchell Street to a bus stop
- Toby's Paddock - between Mitchell Street and Davis Street

An existing gravel shared path is provided adjacent to the railway line between Davis Street and the Nyora Recreation Reserve in the southeast part of the town.

The existing footpaths and shared trails are shown at Figure 3.

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Figure 3: Existing Pathways

## 2.5 Public Transport

Nyora has limited access to public transport consistent with most small regional townships.

A V-Line bus route operates through Nyora along Lang Lang-Poowong Road (Davis Street). Bus stops are located along Davis Street on both sides of the road near Mitchell Street.

This bus service operates between Melbourne and Yarram, via Koo Wee Rup, Korumburra and Leongatha.

The Nyora Railway Station is located on the north side of Mitchell Street and is currently unused. A tourist railway service operates along the South Gippsland Railway Line between Leongatha and Korumburra, however, we understand that it is not operating at all at present 'due to unforeseen circumstances'.

We understand that this service previously extended to Nyora but due to maintenance and bridge stabilisation works the section of railway between Korumburra and Nyora is currently closed.

## 2.6 Crash Statistics

A review of the State Road Accident Records (CrashStats) has been undertaken for the past 5 years of available data (1/01/2009 to 31/12/2013). We have also reviewed the 'Crashes Last Five Years' data set from *data.vic.gov.au* which provides an extra year of crash statistics up to 31/12/2014.

The crash investigation area with recorded crash locations and details is provided at Appendix E.

Only six (6) crashes were recorded within the crash investigation area during the review period. The recorded crashes all occurred at different locations with the exception of two (2) crashes at the Davis Street/Watts Road/Forster Drive cross-intersection.

Based on our review, we are satisfied that there are no existing crash patterns in the study area.

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### 3 Issues & Opportunities

#### 3.1 Unmade Road Reserves

There are a number of unmade road reserves throughout the Nyora township (refer to Road Surface Plan at Appendix B).

There is opportunity to construct roads within unmade road reservations where appropriate within the Nyora Township to provide links and improve road infrastructure to accommodate future development and growth.

However, some of the unmade road reservations are located within areas that wouldn't provide connections for residential subdivisions within Precincts C, D and F and general growth throughout the remainder of Nyora. Furthermore, there are other constraints that impact the viability of some unmade road reservations being constructed.

An assessment of the unmade road reservations and our comments on the need/benefit to construct these roads is provided below.

Unmade Road Reservation	Our Comments
Hogans Road - to the east of Yannathan Road	We understand that it was agreed not to construct Hogans Road as part of rezoning application for the Wallis Watson site to provide a buffer. There is limited benefit to construct this road although pedestrian/cyclist facilities should be provided.
Grayden Street - to the east and west of Yannathan Road	There is opportunity to construct the unmade section of Grayden Street to facilitate subdivision opportunities for adjacent land if development is desired.
Patman Drive - across creek	Minimal benefit from a traffic perspective. It is very unlikely to occur due to extensive vegetation and cost of constructing a bridge across the creek
Watts Road - to the west along railway line	Minimal benefit from a traffic perspective.
Walters Road (east-west section) - along railway line	There is good opportunity to construct/seal Watts Road along the railway line if an access location is desired to this road for future subdivisions within Precinct C.
Cornishs Road – in part between Davis Street and Henrys Road	The extension of Cornishs Road through the unmade reservation is a possible new link which would improve access for the town in general, although it wouldn't really be used by growth areas C, D and F. We see this potential link as providing a new route option for residents/visitors, particularly to/from the southeast part of the township.
Glovers Road – in part to the north of Lang Lang-Poowong Road	Minimal benefit from a traffic perspective and unlikely to be feasible due to extensive vegetation.

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#### Extension of Glovers Road from Lang Lang-Poowong Road to Cornishs Road

There is an unmade section of Glovers Road to the southwest of Lang Lang-Poowong Road which continues to Cornishs Road. Although there is potential to construct this road reservation, it would not be feasible given that a new railway crossing or modification to an existing crossing would require grade separation based on discussions with VicTrack. Accordingly, the extension of Glovers Road to Cornishs Road is not a realistic option.

## 3.2 Unsealed Roads

There are numerous sections of unsealed roads throughout the Nyora Township. Many of these unsealed roads (Watts Road, Glovers Road, Berrys Road, Patman Drive, Hogans Road, etc.) are unlikely to experience much growth in traffic volumes as a result of future development, particularly within Precincts C, D and F. Two unsealed roads that are expected to experience growth in traffic are Walters Road and Henley Street.

Walters Road and Henley Street are both unsealed to the south of Hewson Street and provide a connection with Lang Lang-Poowong Road to the south. Although current traffic volumes are currently very low along the unsealed sections, as a result potential future subdivision in Precinct D and densification (particularly within Precincts A and B) traffic volumes are expected to increase along both of these roads. There is opportunity to seal these roads and widen the carriageway to accommodate simultaneous two-way vehicle movements.

There is also opportunity to upgrade the intersections of each of these roads with Lang Lang-Poowong Road. We note that existing sight distance at the Walters Road/Lang Lang-Poowong Road to/from the west is slightly below the relevant AustRoads guideline due to a crest along Lang Lang-Poowong Road. Much greater sight distance is available at the Henley Street intersection with Lang Lang-Poowong Road.

## 3.3 Mitchell Street / Davis Street / Grundy Avenue Intersection

The Mitchell Street/Davis Street/Grundy Avenue intersection is currently an unsignalised cross-intersection with priority given to north-south movements along Davis Street. Two unusual traffic islands are provided at this intersection which effectively provide a median within Davis Street for turning movements.

This intersection is one of the highest traffic carrying intersections in Nyora and traffic volumes are likely to continually increase with development and population growth throughout Nyora.

There is opportunity to improve this intersection with upgrade works, potentially to a roundabout. A roundabout would provide improved vehicle accessibility to Mitchell Street and Grundy Avenue from Davis Street and also improve safety and control speed within the town centre.

Pedestrian and cyclist movements should be considered as part of any proposed intersection upgrade works.

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### 3.4 Davis Street / Watts Road / Lang Lang-Poowong Road / Forster Road intersection

The Davis Street/ Watts Road/Lang Lang-Poowong Road/Forster Road intersection is the most critical intersection within the Nyora Township when considering existing traffic volumes and future traffic volumes following development and growth within Nyora. Furthermore, this intersection was the only location found to have multiple recorded crashes (2 No.) within the last 5 years of most recent crash statistics data.

This existing layout of this intersection is an unsignalised cross-intersection with priority in the east-west direction (Lang Lang-Poowong Road / Watts Road). A left-turn slip lane is provided from the east leg to the south leg of this intersection. There are no existing right turning provisions at this intersection. The northern leg (i.e. Forster Road) provides local access only and has significantly lower traffic volumes than the other three legs.

There is opportunity for improvement works at this intersection to provide greater safety and capacity to accommodate future growth in traffic volumes. This could potentially include right turning provision on the west approach and/or separate left and right turning lanes on the south approach. A roundabout is a potential alternative intersection arrangement subject to capacity being available to accommodate the predicted future traffic volumes. Furthermore, it will also need to be investigated whether sufficient land is available to accommodate the required roundabout geometry.

Pedestrian and cyclist movements should be considered as part of any proposed intersection works.

### 3.5 Grundy Avenue / Davis Street Corner Site

The Grundy Avenue/Davis Street vacant corner site located opposite the former Nyora Pub provides good opportunity for development. We note that access to this site would likely be required from Grundy Avenue when considering that Davis Street is zoned 'Road Zone Category 1'.

We are of the opinion that potential development of this site would not create any unacceptable traffic impacts particularly when considering the opportunity for upgrade works at the Mitchell Street/Davis Street/Grundy Avenue intersection as discussed earlier.

### 3.6 Lack of Footpaths and Bicycle Facilities

As identified at Figure 3, there are very limited footpaths and shared paths throughout the township and these are currently concentrated along and within close proximity of Mitchell Street and Grundy Avenue. There is opportunity to provide improved pedestrian facilities along existing streets throughout the township. There is also opportunity to provide new and improved shared paths including extension of the rail trail.

Future development within Precincts C, D and F should also strongly consider providing footpaths along new roads and also bicycle lanes/paths where appropriate.

## Background Summary Report Nyora Development Strategy

### 3.7 Parking

Although there are no current issues associated with on-street parking demands within the Nyora township, the provision of formalised on-street/off-street parking should be considered in areas where proposed future retail/commercial activities are proposed.

### 3.8 Topography of Precincts C & D

Precincts C and D both appear to be reasonably flat and we do not see any traffic engineering issues as a result of topography at this stage. Sight distance will need to be considered when deciding upon potential connections with the existing road network.

### 3.9 New East-West Connector Road

There is an opportunity to provide a new east-west connector road within the southwest part of the township within Precinct B. A potential future east-west road could provide a connection between Walters Road and Davis Street and potentially extend further to the west to provide a key connection for Precinct C.

This potential road will require land to be acquired from a number of properties within Precinct B. Whether this potential east-west road is required from a traffic capacity point of view will be assessed as part of the next stage of the project.

We understand that there are significant waterway issues in a general east-west direction through the centre of Precinct B. Accordingly, there is opportunity to integrate a new east-west road as part of a potential waterway management solution.



Background Summary Report  
Nyora Development Strategy

## Appendix A: Road Summary Table

## Road Summary Table

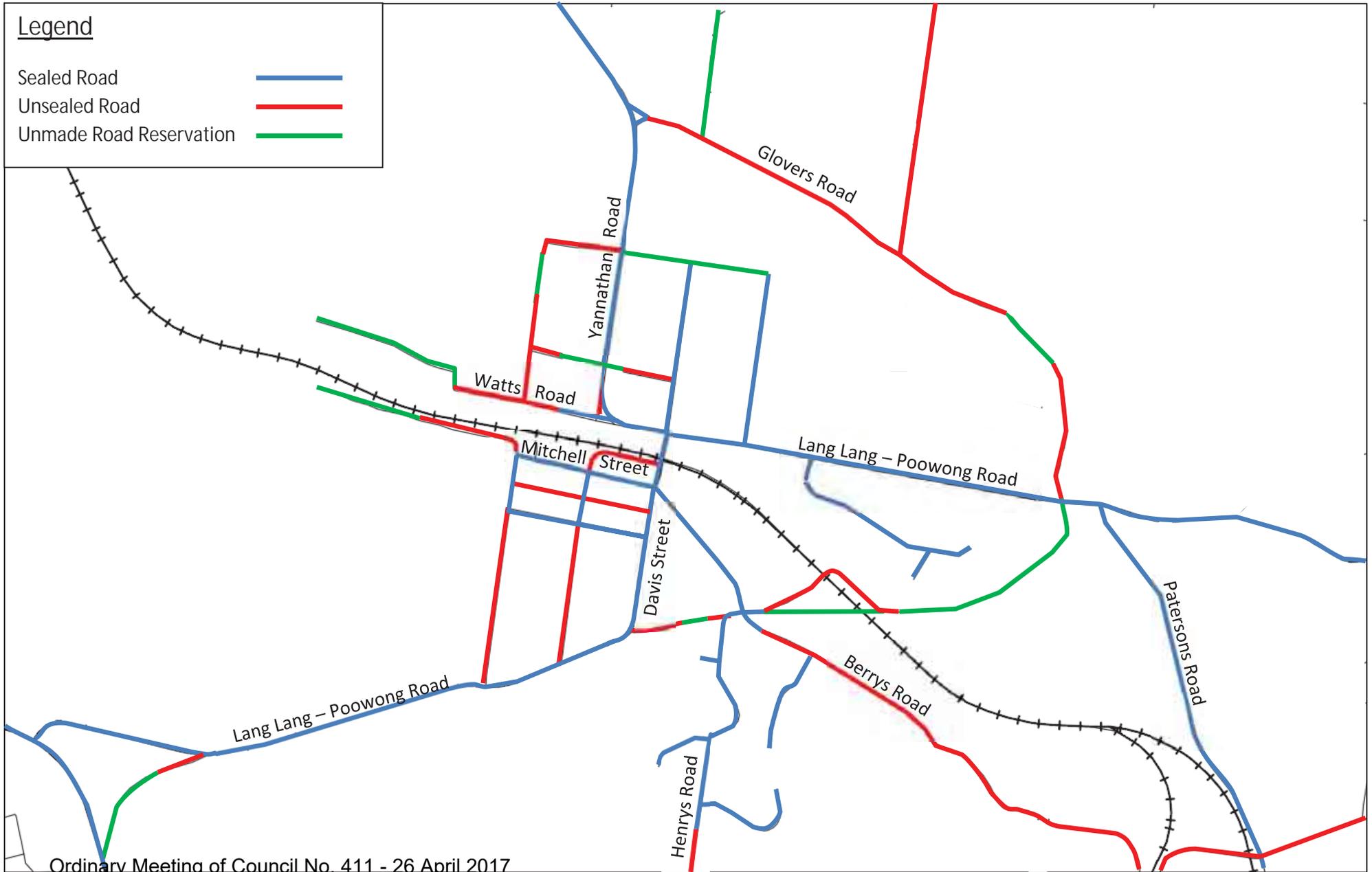
Road	Authority	Section	Road Reservation (m)	Carriageway (m)	Intersection Controls
Lang Lang - Poowong Road	VicRoads	South Gippsland Hwy to Davis St	40	6.4	GW at South Gippsland Highway
		Davis St to Pattersons Rd	30	7.5	-
Davis Street	VicRoads	Lang Lang Poowong Rd to Hewson St	30	7.6 seal, 0.5 shoulder	Stop at Lang Lang - Poowong Road
		Hewson St to Mitchell St	20	-	-
		Mitchell St to Watts Rd	30	-	-
Yannathan Road	Council	Watts Rd to Glovers Rd	20	6.4	-
		Glovers Rd to McDonalds Track	40	-	-
Watts Road	Council	Davis St to Yannathan Rd	30	-	-
		Yannathan Rd to Patman Dr	30	5.7 seal, 0.8 shoulders	GW at Yannathan Rd
		Patman Dr to dead end	30	4.15	-
Walters Road	Council	Lang Lang Poowong Rd to Hewson St	20	4	Stop at South Gippsland Highway
		Hewson St to Mitchell St	20	4.6	-
		Mitchell St to Railway	30	3.5	-
Henley Street	Council	Lang Lang Poowong Rd to Hewson St	20	5.5	Stop line (no sign) at South Gippsland Highway, Stop at Hewson St
		Hewson St to Mitchell St	20	9.7	None at Mitchell St
			20	8.2	Stop at Hewson St
Hewson Street	Council	Walters Rd to Henley St	20	5.3	None at Walters Rd
		Henley St to Davis St	20	-	GW at Davis St
Mitchell Street	Council	Walters Rd to Henley St	30	9.7	None at Walters Rd
		Henley St to Davis St	30	8.9	GW at Davis St
			30	7.2	
ROW parallel to Mitchell Street	Council	Davis St to Walters Rd	6.5	2.9	-
Grundy Avenue	Council	Davis St to Cornishs Rd	30	6.4	GW at Davis St
Berrys Road	Council	Cornishs Rd to Carlisle Cl	20	5.1	-
Cornishs Road		Grundy Ave to Railway	40	3.2	None at Grundy Ave, GW at Railway
		Railway to dead end	40	3.7	GW at Railway
Henrys Road	Council	Grundy Ave to Eagle Rise	20	6.7	None at Grundy Ave
Follet Drive	Council	Lang Lang - Poowong Rd to dead end	20	5.5	GW at Lang Lang - Poowong Rd
Hatches Road	Council	Lang Lang - Poowong Rd to dead end	20	4.6	GW at Lang Lang - Poowong Rd
Forster Road	Council	Lang Lang - Poowong Rd to dead end	30	5.5	Stop at Lang Lang - Poowong Road
Patman Drive	Council	Watts Rd to dead end	20	4.6	None at Watts Rd
Hogans Road	Council	Yannathan Rd to dead end	20	4.8	None at Yannathan Rd
Glovers Road	Council	Yannathan Rd to dead end	40	3.9	GW at Yannathan Rd



Background Summary Report  
Nyora Development Strategy

## Appendix B: Existing Road Surface Plan

# Existing Road Surface Plan

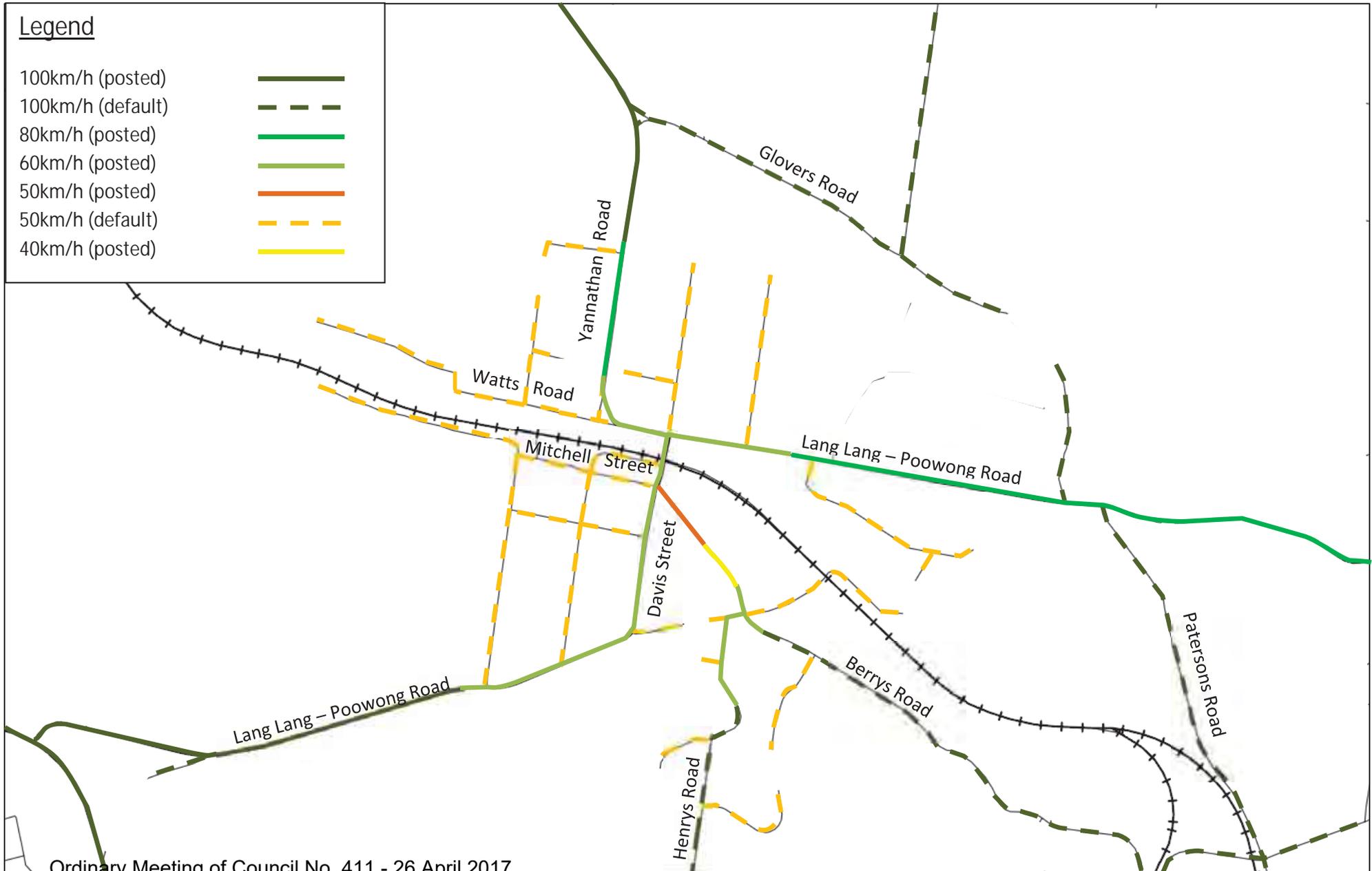




Background Summary Report  
Nyora Development Strategy

## Appendix C: Existing Speed Limits Plan

# Existing Speed Limits Plan



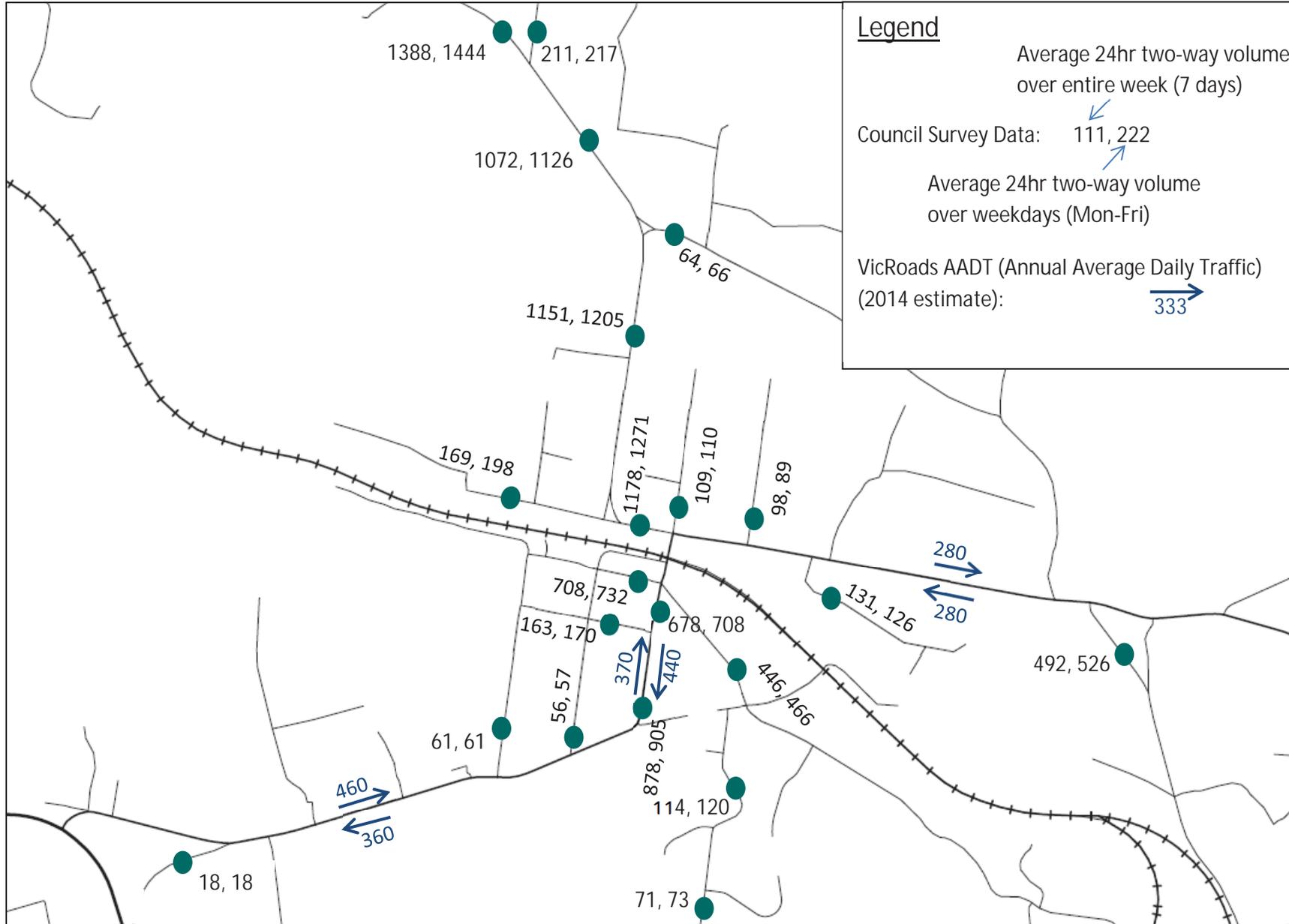


Background Summary Report  
Nyora Development Strategy

## Appendix D: Existing Traffic Volumes Summary



# Existing Traffic Volumes Summary

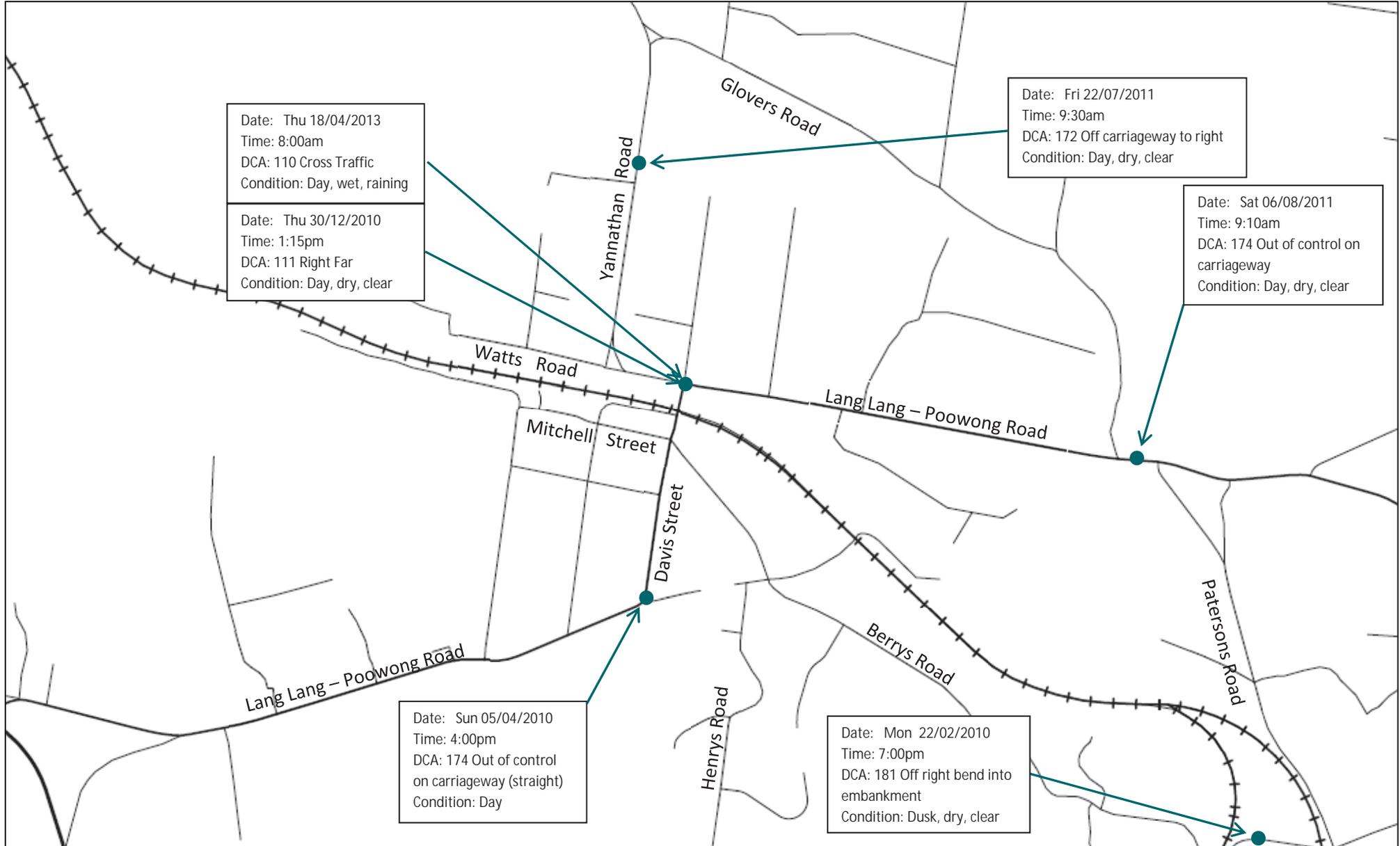




Background Summary Report  
Nyora Development Strategy

## Appendix E: Crash Statistics Summary

# Crash Statistics Summary





Traffic Impact Assessment Report  
Nyora Development Strategy – Town Centre Masterplan

## Appendix B: Car Parking Assessment

**Town Centre Car Parking Generation**

Uses (long-term)	Area	Rate (per 100m2)	Car Parking Generation	Notes & Assumptions
Supermarket (long-term)	3800	5	190	Clause 52.06 rate for supermarket
Commercial/Medical (Hewson Street-red)	600	4	24	An estimated rate based on a mixture of uses
Commercial/Medical (Hewson Street-grey)	2196	4	88	An estimated rate based on a mixture of uses
Community Hub	1400	NA	45	45 spaces required as per project brief from Council
Existing Commerical Land (Mitchell St)	6626	4	265	Clause 52.06 rate for shop, food and drink premises
Existing Commerical Land (Davis St)	3253	4	130	Clause 52.06 rate for shop, food and drink premises
<b>Total</b>			742	
<b>Discounted</b>			594	20% discounting for multi-purpose trips

	218	Assume parking requirement for potential future uses on these larger sites are completely accommodated on-site - Davis Street commercial/medical and Hewson St
	66	Assume 25% of demands are staff parking and accommodated on-site at rear via laneway
<b>Total (reduced)</b>	458	
<b>Discounted</b>	366	20% discounting for multi-purpose trips, sharing, different uses peaking at different times

Short-term Supermarket	Area	Rate (per 100m2)	Car Parking Generation	Notes & Assumptions
Supermarket (short-term)	1,000	5	50	Clause 52.06 rate for supermarket

**Town Centre Car Parking Provision**

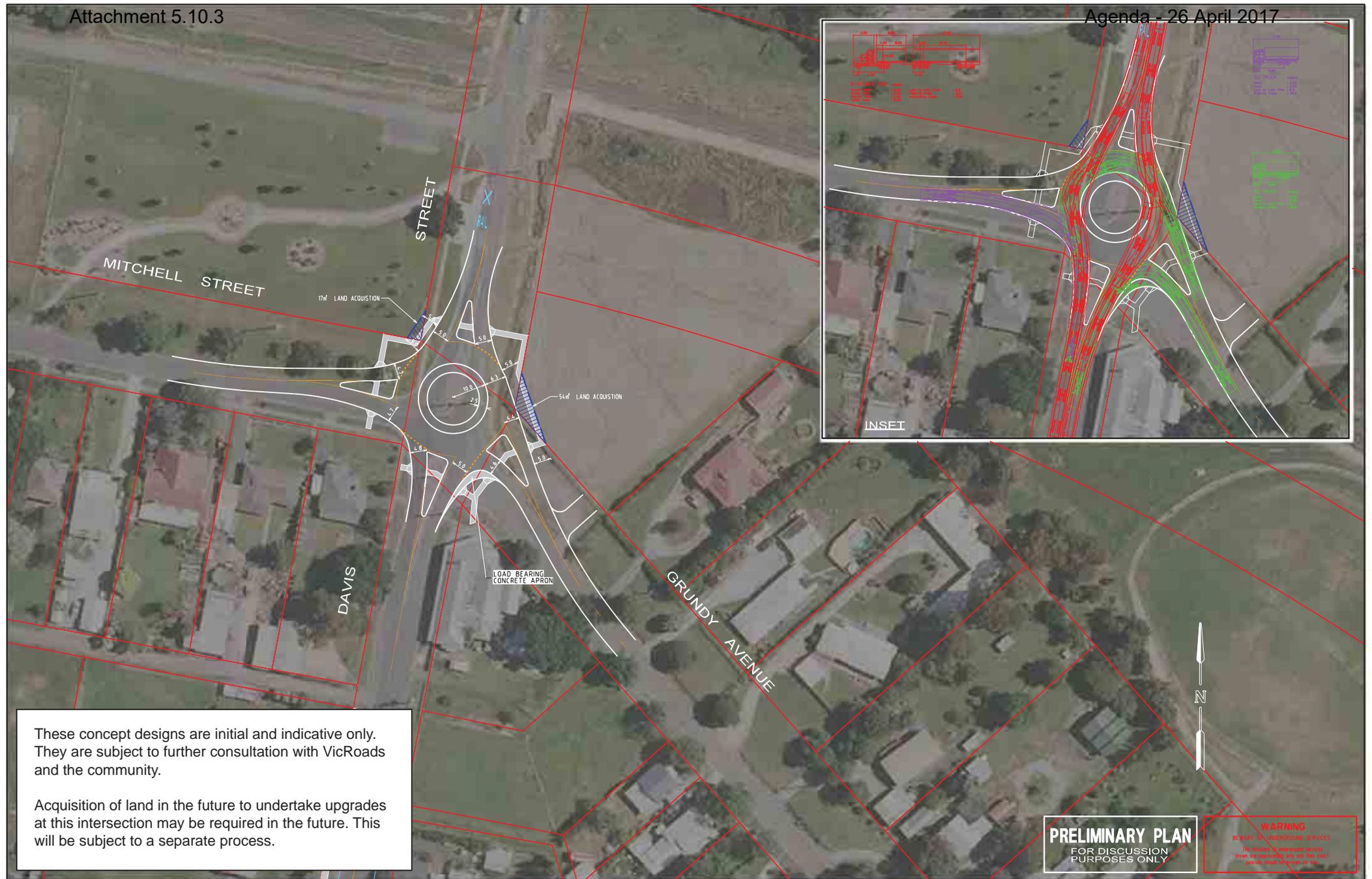
Use	Spaces	Notes & Assumptions
Supermarket carpark (long-term)	170	As identified on Masterplan, calculated by Planisphere
Community Hub carpark	45	As identified on Masterplan, calculated by Planisphere
Mitchell Street (on-street)	70	Assumes parallel parking on both sides at average 6m length, 20m setback from Davis street, 10m setback from Henley Street
Hewson Street (on-street)	35	Assumes parallel on one side only at average 6m space length, 20m setback from Davis street, 10m setback from Henley Street
Henley Street (on-street)	42	Assumes parallel parking on both sides at average 6m space length except adjacent to Town Hall. 10m setback from intersection streets and laneway.
Existing Town Hall Spaces	14	Estimated from aerial
<b>Total</b>	<b>376</b>	

Short-Term Supermarket	Spaces
Supermarket (short-term)	90

**Other Notes**

Assumed no on-street car parking along Davis Street  
 Have not considered any parking generated by Town Hall at peak times (weekday lunchtime)  
 Henley Street has an existing 9.7m carriageway between Mitchell and Town Hall, but narrower to south



These concept designs are initial and indicative only. They are subject to further consultation with VicRoads and the community.

Acquisition of land in the future to undertake upgrades at this intersection may be required in the future. This will be subject to a separate process.

**PRELIMINARY PLAN**  
FOR DISCUSSION  
PURPOSES ONLY

**WARNING**  
BE CAREFUL OF UNEXPECTED OBSTACLES  
This drawing is a conceptual design. It shows the proposed works and does not guarantee that the works will be completed.

ISSUE	ISSUE DESCRIPTION	ISSUE DATE
A	ROUNDBOUNT MODIFIED SLIGHTLY TO ALLOW B-DOUBLES THROUGH (NORTH/SOUTH MOVEMENT)	02 JUNE 2016

**GENERAL NOTES**

1. BASE INFORMATION FROM AERIAL PHOTOGRAPHY SUPPLIED BY COUNCIL
2. ALL DIMENSIONS ARE TO FACE OF KERB & CHANNEL
3. MAIN ROAD - DAVIS STREET (SPEED ZONE 80km/h)
4. ALL PROPOSED FOOTPATHS AND PRAM CROSSINGS ARE TO BE CONSTRUCTED WITH TACTILE GROUND SURFACE INDICATORS TO DDA COMPLIANCE GUIDELINES REFER TO AS 1428.4.2009

DESIGNED  
R CARBARNIS 01 APR 2016

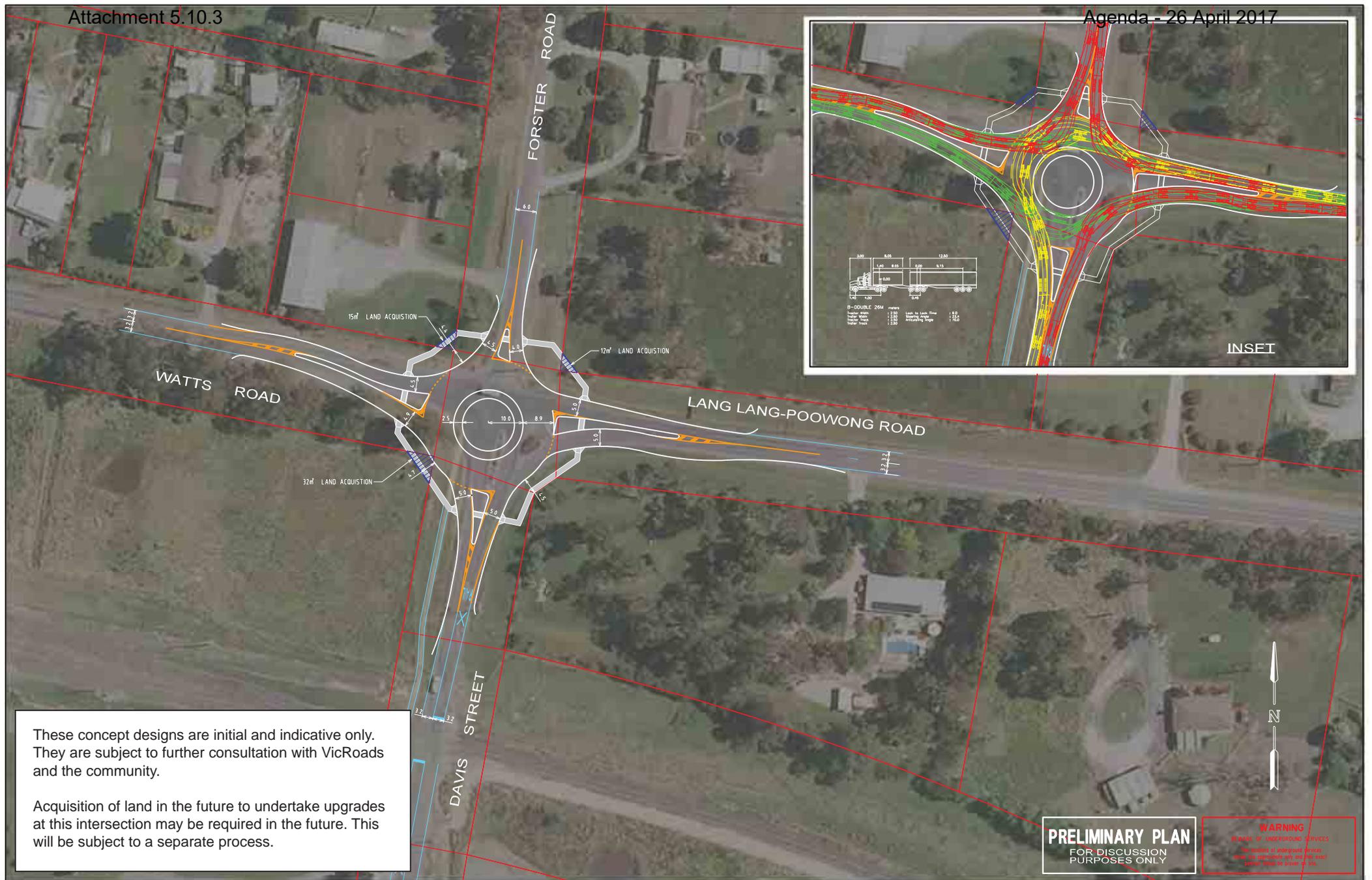
CHECKED/APPROVED  
B CHISHOLM 01 APR 2016

FILE NAME  
G19584-A-00.dgn

Traffix Engineers and Transport Planners  
Suite 10/11 Burke Road TEL: (03) 9522-2998  
GLEN REE VICTORIA 3146 FAX: (03) 9552-7444  
www.traffixgroup.com.au

**DAVIS STREET - NYORA**  
**MITCHELL STREET - GRUNDY AVENUE**  
SOUTH GIPPSLAND SHIRE  
**CONCEPT FUNCTIONAL LAYOUT PLAN**

SCALE 0 5 10 15 20 SHEET No. DWG No. G19584-01



These concept designs are initial and indicative only. They are subject to further consultation with VicRoads and the community.

Acquisition of land in the future to undertake upgrades at this intersection may be required in the future. This will be subject to a separate process.

**PRELIMINARY PLAN**  
FOR DISCUSSION  
PURPOSES ONLY

**WARNING**  
RISK OF UNDERGROUND SERVICES  
Do not dig or alter ground services  
without an engineering plan and prior written  
permission from the Council.

ISSUE	ISSUE DESCRIPTION	ISSUE DATE

**GENERAL NOTES**  
 1. BASE INFORMATION FROM AERIAL PHOTOGRAPHY SUPPLIED BY COUNCIL & VICMAP DATA.  
 2. ALL DIMENSIONS ARE TO FACE OF KERB & CHANNEL.  
 3. MAIN ROADS  
 - DAVIS STREET (SPEED ZONE 60km/h)  
 - LANG LANG-POOWONG ROAD (SPEED ZONE 60km/h)  
 - WATTS ROAD (SPEED ZONE 60km/h)  
 LOCAL ROADS  
 - FORSTER ROAD (DEFAULT SPEED ZONE 50km/h)  
 ALL UNIMPAVED DRIVEWAYS AND PRAM CROSSINGS ARE TO BE CONSTRUCTED WITH TACTILE GROUND SURFACE  
 AND TO COMPLY WITH COMPLIANCE GUIDELINES REFER TO AS 1428.4-2009.

DESIGNED  
GRAKITA 01 JUNE 2016  
 CHECKED/APPROVED  
B. CHISHOLM 01 JUNE 2016  
 FILE NAME  
G19584A-00.dgn



**DAVIS STREET - NYORA**  
**WATTS ROAD - LANG LANG POOWONG ROAD**  
 SOUTH GIPPSLAND SHIRE  
**CONCEPT FUNCTIONAL LAYOUT PLAN**  
 SCALE 0 5 10 15 20 SHEET No. DWG No. G19584-02



These concept designs are initial and indicative only. They are subject to further consultation with VicRoads and the community.

**PRELIMINARY PLAN**  
FOR DISCUSSION PURPOSES ONLY

**WARNING**  
BEWARE OF UNDERGROUND SERVICES  
The locations of underground services shown are approximate only and their exact position should be proven on site.

ISSUE	ISSUE DESCRIPTION	ISSUE DATE	GENERAL NOTES	DESIGNED	 Traffic Engineers and Transport Planners <small>Suite 1/131 Burke Road TEL: (03) 9522-2999                  Glen Iris VICTORIA 3146 FAX: (03) 9522-7444  <a href="http://www.traffixgroup.com.au">www.traffixgroup.com.au</a></small>	DAVIS STREET / HEWSON STREET NYORA	
			1. BASE INFORMATION FROM AERIAL PHOTOGRAPHY SUPPLIED BY COUNCIL. 2. ALL DIMENSIONS ARE TO FACE OF KERB & CHANNEL. 3. MAIN ROAD - DAVIS STREET (SPEED ZONE 60km/h) LOCAL ROAD - HEWSON STREET (DEFAULT SPEED ZONE 50km/h) 4. ALL PROPOSED FOOTPATHS AND PRAM CROSSINGS ARE TO BE CONSTRUCTED WITH TACTILE GROUND SURFACE INDICATORS TO AID COMPLIANCE GUIDELINES REFER TO AS 1428.4.2009	G. RAKITA 06 JUNE 2016		SOUTH GIPPSLAND SHIRE	
				B. CHISHOLM 06 JUNE 2016	CONCEPT FUNCTIONAL LAYOUT PLAN		
				FILE NAME: G19584A-00.dgn	SCALE: 0 5 10	SHEET No.	DWG No. G19584-03





# E

## APPENDIX E STORMWATER MANAGEMENT PLAN & REPORT

# STORMWATER MANAGEMENT PLAN

Refer to document attached