B00471
Traffic Impact Assessment
Kodak Residential Development (173-199 Elizabeth Street, Coburg North)

30 May 2011

Prepared for Satterley Property Group

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1 Introduction

1.1 Background

A Development Plan has been approved for the subject site. The approved development plan includes a traffic report by GTA Consultants. In accordance with the requirements of schedule 10 of the Development Plan Overlay (DPO10) of the Moreland Planning Scheme, the GTA report provides an assessment of anticipated traffic and transport implications of the proposed development including consideration of existing conditions, traffic generation, site access arrangements and transport impact.

This document includes updated traffic and transport information (relative to the GTA report) and provides an assessment of anticipated impacts in relation to an updated overall site layout.

Accordingly, this document supersedes the GTA report and is intended to formally replace that report as an approved part of the Development Plan.

The items in DPO10 that are relevant to this report are set out below:

- "A Traffic Engineering Analysis that identifies:
    - Expected traffic volumes and the impact on the existing road network;
    - Any necessary treatments of intersections to surrounding streets;
    - Any upgrades or modifications to existing roads;
    - Internal street functional hierarchy;
    - Location of any proposed traffic management devices.
- The provision of multiple access points from the existing road network that avoids the creation of a 'gated' or cul-de-sac estate.
- An indicative layout of the internal local roads proposed for the site that complements the form and structure of the surrounding network and provides a high level of amenity and connectivity.
- Typical proposed road cross-sections to demonstrate that emergency and service vehicles will be able to appropriately manoeuvre through the site.
- The designation of a possible bus route through the site and provision for appropriate road pavement widths along this potential route to facilitate the future needs for a bus along these roads that considers the views of the DoT Public Transport Division.
- The provision of pedestrian and cycle links through the site which provide convenient and safe access from / to bus stops, Edgars Creek, the Newlands Primary School and the neighbourhood hub.
- The formalisation of open space links, including provision of a shared pedestrian and cycle path along the Edgars Creek corridor in the immediate vicinity of the site.
- The retention of the former Kodak bridge for pedestrian and cycling purposes only."

1.2 Referenced Documents

The background to this report is contained within the GTA Consultants final report entitled *173-199 Elizabeth St Coburg North Transport Impact Assessment* revision F dated 7 July 2010, which presents the history and existing conditions pertaining to the subject site and its surrounds. The contents of the GTA report are largely still relevant at the Development Plan level, with any exceptions covered herein.

In addition, the following documents were referenced in the development of this report:

- Indicative development proposals prepared by Satterley Property Group
- Moreland City Council Planning Scheme, in particular clause 43.04 (DPO10)
- Victorian Department of Transport – *Public Transport Guidelines for Land Use and Development*

2 Existing Conditions

2.1 Development Site

The development site is located in Coburg North in a residential area with a small neighbourhood hub opposite its eastern boundary. It is bound by Elizabeth Street to the east, Tilley Street to the north, Edgars Creek reserve to the west and Ronald Street and Boyne Street to the south.

The development site does not comprise the entire former Kodak site, but only the land that is to the east of Edgars Creek. An existing bridge connects the site to the other portion of the Kodak site west of Edgars Creek.

The site was formerly occupied by Kodak Australia and used for industrial purposes.

Figure 1 is a map showing the location of the proposed development site (highlighted) and its environs. The extent of the former Kodak site is also shown.

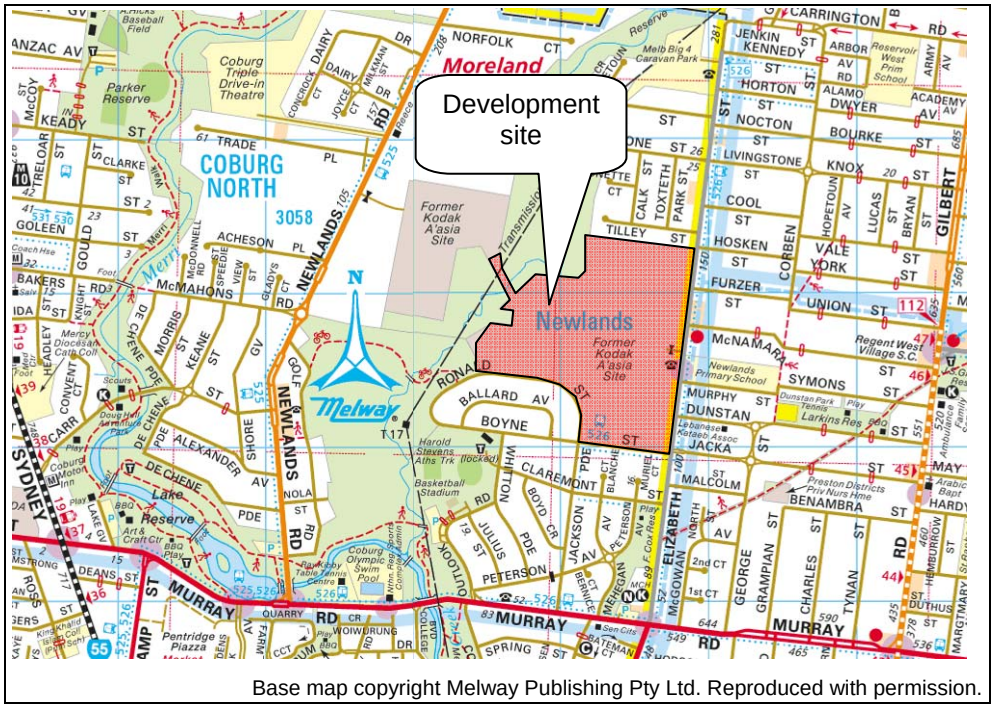


Figure 1: Map showing location of development site

2.2 Surrounding Street Network and Land Use

The land surrounding the development site is largely residential with small pockets of shops and the Newlands Primary School acting as a neighbourhood hub. There are community sports facilities to the west along the Edgars Creek reserve.

The presence of multiple traffic calming treatments in the nearby east-west roads and the lack of an east-west connector road north of Murray Road indicates that there is an east-west traffic demand in the area to access Gilbert Road that is not presently met.

2.2.1 Elizabeth Street

Elizabeth Street is a north-south municipal connector road, providing the primary means of road access to the south for the Newlands area, connecting with Murray Road and Bell Street. It is also the municipal boundary between Moreland City Council to the west and the City of Darebin to the east. Figure 2 and Figure 3 show Elizabeth Street at both ends of the development site.

Elizabeth Street has a nominal 50km/h speed limit, which is reduced to a permanent 40km/h in the vicinity of the Newlands Primary School. It operates with a two way/two lane cross section, with localised widening for approximately 50m to the north and south of McNamara Street to support parking movements associated with the local shops on the east side of Elizabeth Street.

Kerbside parking is generally permitted along the east side of Elizabeth Street, but banned along the west side (development site frontage) except in the vicinity of the shops where short term parking is permitted, and at bus stops where Bus Zones are marked.

Metropolitan bus route 526 operates along Elizabeth Street

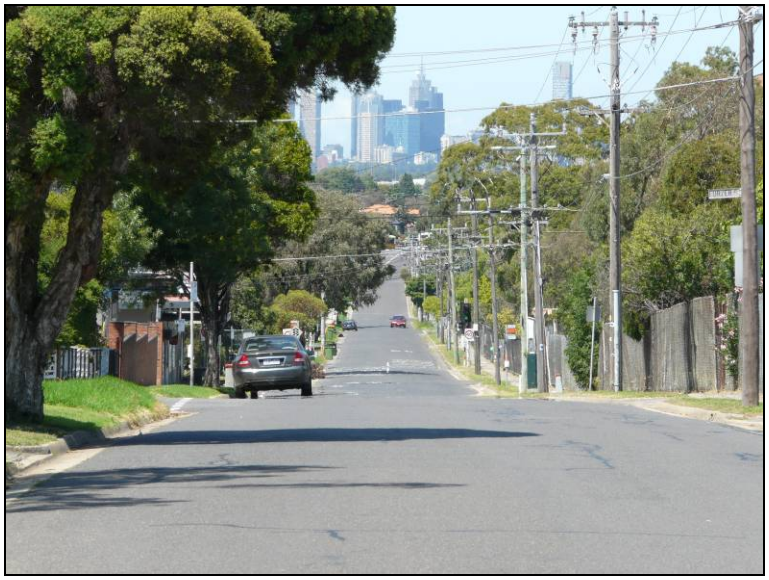


Figure 2: Elizabeth Street adjacent to the northeast corner of the development site, looking south

Figure 3: Elizabeth Street adjacent to the southeast corner of the development site, looking north

2.2.2 Boyne Street

Boyne Street is an east-west local access street branching to the west off Elizabeth Street. It is a two-way road without marked lanes and has no particular parking restrictions. Boyne Street provides access between Elizabeth Street and the community sporting facilities along the Edgars Creek Reserve, including the Harold Stevens Athletics Track.

Boyne Street carries 761 vehicles per day (both directions) in the segment between Elizabeth Street and Ronald Street. Metropolitan bus route 526 operates along Boyne Street between Jackson Parade and Elizabeth Street. Figure 4 shows Boyne Street adjacent to the development site looking east.

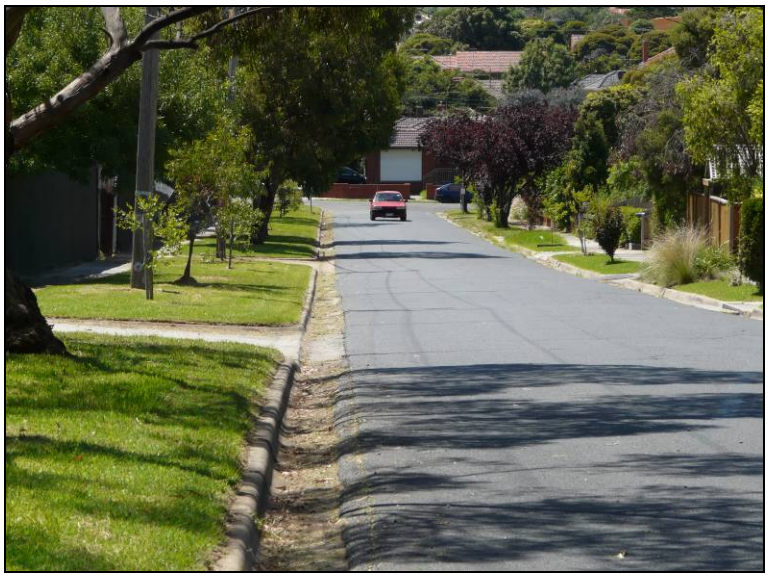


Figure 4: Boyne Street adjacent to the development site, looking east

2.2.3 Ronald Street

Ronald Street forms a loop from the western end of Boyne Street and currently only services abutting residential properties as there is no connectivity to other streets. It is a two-way road without marked lanes and has no particular parking restrictions.

Ronald Street carries very few vehicles at only 127 vehicles per day (both directions) at its straight northernmost segment. Figure 5 shows Ronald Street along the northernmost straight segment, with the development site on the left.

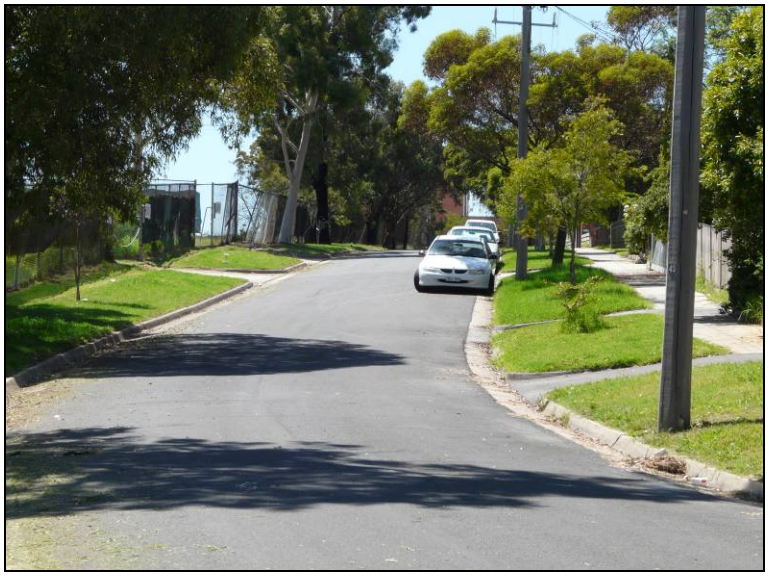


Figure 5: Ronald Street, adjacent to the westernmost corner of the development site, looking east.

2.2.4 Jackson Parade

Jackson Parade is a north-south local access street connecting the Boyne Street/Ronald Street intersection to Murray Road. It is a two-way road without marked lanes and has no particular parking restrictions.

Jackson Parade carries 400 vehicles per day (both directions) in the segment between Claremont Street and Boyd Crescent. Metropolitan bus route 526 operates along Jackson Parade between Boyne Street and Claremont Street. Figure 6 shows Jackson Parade from the intersection with Boyne Street, looking south.

Figure 6: Jackson Parade at the intersection with Boyne Street and Ronald Street, looking south.

2.3 Traffic Counts

In addition to the turning movement counts described in the GTA 2010 report, CPG undertook further investigation by means of traffic classifier surveys. A total of six sites within four streets were surveyed to obtain an up-to-date description of 2011 existing traffic volumes in the vicinity of the subject site, given that the GTA report was based on traffic data that is nearly four years old (February 2007).

Classifier counts were undertaken at the following locations:

- Elizabeth Street
    - between Claremont Street and Murray Road
    - between Murphy Street and McNamara Street
    - between Livingstone Street and Nocton Street
- Ronald Street along the northernmost straight section
- Boyne Street between Jackson Parade and Elizabeth Street
- Jackson Parade between Claremont Street and Boyd Crescent

2.4 Turning Volumes – Intersections Adjacent to Development Site

It was found that overall, the traffic volumes had not changed uniformly between the February 2007 volumes presented in the GTA report and the classifier results obtained in February 2011. Volumes along Elizabeth Street north of the Murphy Street intersection were found to have increased by 1.85%, but conversely, volumes along Elizabeth Street north of the Murray Road intersection were found to have decreased by 1.55%.

Further north, it was found that volumes along Elizabeth Street north of the Livingstone Street intersection had risen by 9.37%

Within the local access streets, volumes along Boyne St west of Elizabeth Street were found to have increased by 10.6%, but due to the low absolute volumes in the order of 30vph, this figure may not provide an accurate gauge of traffic growth. These low volumes result in percent changes being extremely sensitive to small

variations in volume: in this case, a 10% change is caused by a mere 3vph difference.

To conservatively estimate current year turning volumes, a flat 10% growth factor was incorporated into the 2007 GTA traffic volumes for the intersections abutting the development site. This conservative approach will tend to overestimate current volumes and compares well with the traffic volume increases mentioned previously.

The turning movements adopted for analyses of intersections abutting the development site are as shown in Figure 7.

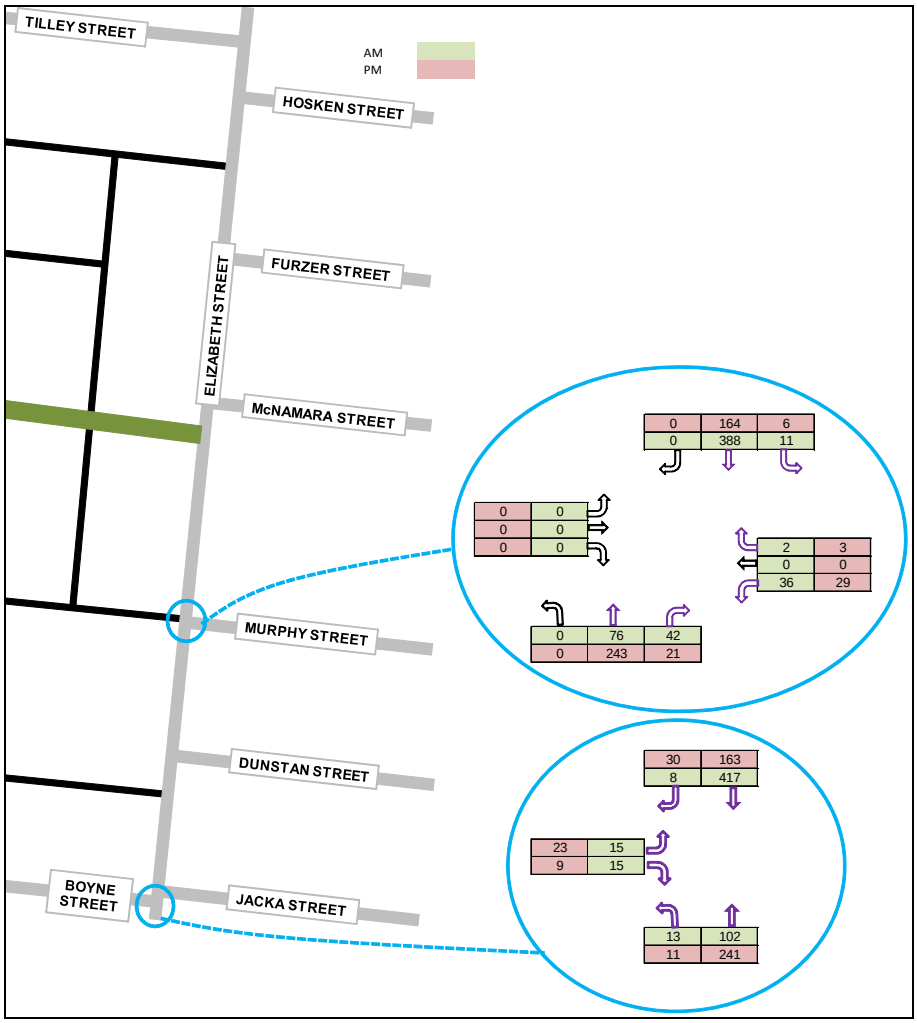


Figure 7: Existing turning volumes for intersection analysis

SIDRA analysis was undertaken to determine the existing performance of these intersections, and the results of this analysis is provided in Table 1 and Table 2.

It is evident from the results that the two intersections currently perform at an acceptable level with minimal delays and queuing experienced during the peak hours. It is therefore expected that the additional traffic generated by the proposed development can be catered for, however this will be discussed in greater detail in section 5.3.

Peak Hr	Approach Leg	DoS (X)	Avg Delay (s) (worst lane)	95%ile Queue (m)
AM	Elizabeth St (S)	0.09	4.6	4.9
	Murphy St (E)	0.06	9.3	1.8
	Elizabeth St (N)	0.22	0.2	0.0
PM	Elizabeth St (S)	0.15	1.4	9.2
	Murphy St (E)	0.04	7.8	1.2
	Elizabeth St (N)	0.10	0.2	0.0

Table 1: SIDRA model results for the existing Elizabeth Street/Murphy Street intersection

Peak Hr	Approach Leg	DoS (X)	Avg Delay (s) (worst lane)	95%ile Queue (m)
AM	Elizabeth St (S)	0.06	0.9	0.0
	Elizabeth St (N)	0.24	0.8	15.2
	Boyne St (W)	0.06	12.7	1.9
PM	Elizabeth St (S)	0.14	0.4	0.0
	Elizabeth St (N)	0.12	2.6	7.1
	Boyne St (W)	0.05	11.0	1.6

Table 2: SIDRA model results for the existing Elizabeth Street/Boyne Street intersection

2.5 Turning Volumes – Intersections Farther Afield

For the Murray Road / Elizabeth Street and Murray Road / Jackson Parade intersections, the 2007 GTA turning movement counts were adopted without applying a growth factor. This is because being arterial road intersections, their traffic volumes patterns are much more stable when compared to local access streets. Furthermore, when comparing the 2011 classifier survey to the 2007 GTA turning movement counts, volumes along Elizabeth Street north of the Murray Road intersection were found to have decreased by 1.55%. Therefore it was conservatively assumed that the 2007 GTA turning movement counts are still valid for the purposes of this assessment.

The turning movements adopted for analyses of the Murray Road / Elizabeth Street and Murray Road / Jackson Parade intersections are as shown in Figure 8 and Figure 9.

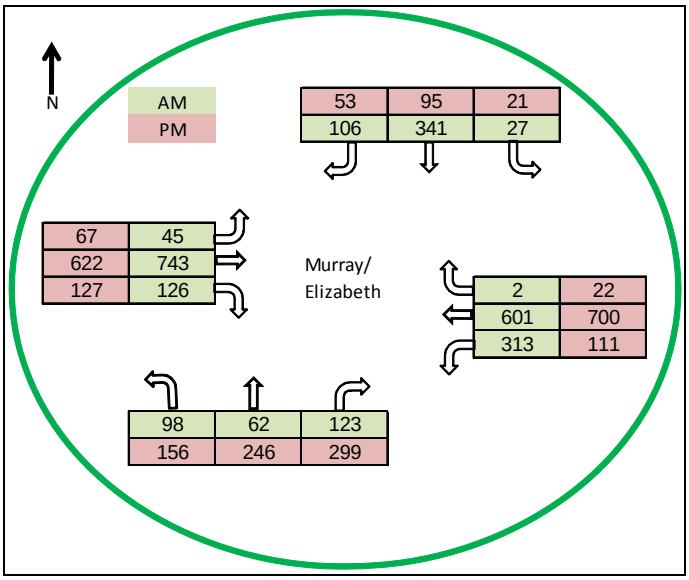


Figure 8: Existing turning volumes at the Murray Road / Elizabeth Street intersection

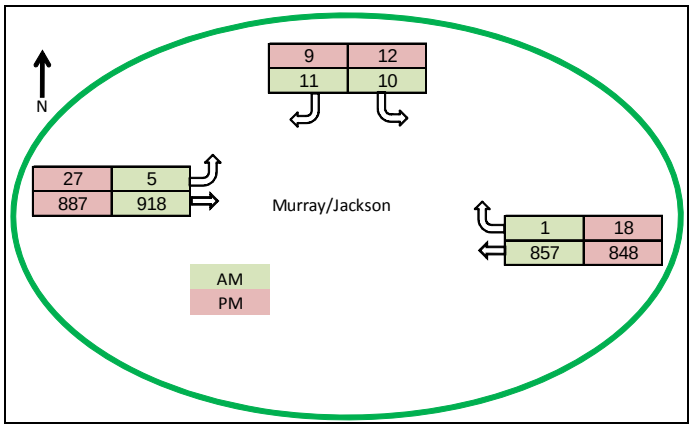


Figure 9: Existing turning volumes at the Murray Road / Jackson Parade intersection

SIDRA analysis was undertaken to determine the existing performance of these intersections, and the results of this are provided in Table 3 and Table 4.

It is apparent from these results that the Murray Road / Elizabeth Street signalised intersection performs acceptably in terms of saturation, queuing and delay.

Although queue lengths on Jackson Parade approaching Murray Road are quite short, the corresponding average delay measures indicate that some vehicles may currently experience difficulty turning out of Jackson Parade. However, as Elizabeth Street is reasonably close and accessible, it is reasonable to assume that some vehicles, particularly right turners, will migrate and access Murray Road via Elizabeth Street if delays are found to be excessive.

Peak Hr	Approach Leg	DoS (X)	Avg Delay (s) (worst lane)	95%ile Queue (m)
AM (80 sec cycle time)	Elizabeth St (S)	0.51	30.4	50.4
	Murray Rd (E)	0.79	33.6	147.3
	Elizabeth St (N)	0.80	35.7	123.2
	Murray Rd (W)	0.55	28.4	93.4
PM (80 sec cycle time)	Elizabeth St (S)	0.84	35.9	128.2
	Murray Rd (E)	0.83	37.1	138.6
	Elizabeth St (N)	0.80	46.7	50.4
	Murray Rd (W)	0.51	28.5	84.3

Table 3: SIDRA model results for the existing Murray Road / Elizabeth Street intersection

Peak Hr	Approach Leg	DoS (X)	Avg Delay (s) (worst lane)	95%ile Queue (m)
AM	Murray Rd (E)	0.48	14.0	0.1
	Jackson Pde (N)	0.15	51.5	3.6
	Murray Rd (W)	0.26	0.1	0.0
PM	Murray Rd (E)	0.47	14.3	1.1
	Jackson Pde (N)	0.12	49.7	2.8
	Murray Rd (W)	0.26	0.5	0.0

Table 4: SIDRA model results for the existing Murray Road / Jackson Parade intersection

2.6 Parking

An evening parking survey was undertaken on Wednesday 9 February 2011 at approximately 7:00pm in order to determine the existing on-street parking demand. A weekday evening such as this is considered to be a good representation of parking demand, as by this time, most residents would have returned home from work.

The survey covered all frontage roads along the development site with the exception of Tilley Street, which is not expected to have any significant parking impact due to only one lot fronting onto it.

The parking survey also incorporated an assessment of the off-street parking provision of existing dwellings adjacent to the development site. This component was required to provide a complete picture of the parking activity in the locality, particularly whether the existing residents tend to park on-street or off-street and thereby provide some insight into how much on-street parking will be required to support the new development.

2.6.1 Parking Survey Findings

- Existing parking demand on the frontage roads along the development site were generally very low.
- Most of the existing dwellings had cars parked off-street.
- During the course of the evening, there were very few observed movements to parking on the surveyed streets.
- Generally, properties in the vicinity provided ample driveway space plus a garage or carport and can accommodate two or more cars.

The results of the evening parking survey are summarised in Table 5.

Location	Observations	Summary
Elizabeth Street (Boyne-Tilley)	2 cars outside residences, 3 cars outside school/shops	Very low demand
Boyne Street (Elizabeth-Ronald)	2 cars outside existing residences (south side), none adjacent to development site (north side)	Very low demand
Ronald Street (entire length)	A total of 13 cars were parked, including 1 apparently abandoned vehicle. There is a higher concentration of parked cars towards the west, beyond the development site frontage.	Low demand

Table 5: Parking Survey Results

2.6.2 Parking Impacts of Proposed Development

The development plan allows for a significant number of lots that will be accessed directly from the existing roads of Ronald Street, Boyne Street and Elizabeth Street. It is understood that Moreland City Council have raised concerns regarding the existing roadway width of Ronald Street and Boyne Street, particularly in regards to the ability to support on-street parking on both sides of the street, whilst also catering for emergency vehicle access. The existing roadway widths of Ronald Street and Boyne Street are 6.8m and 6.7m respectively.

On the basis of providing one on-street parking space per two dwellings (as derived from the Access Place designation within the Moreland Planning Scheme), it was found that sufficient kerbside parking was available on one side of the road, therefore negating the need to widen the road.

Notwithstanding the above, agreement was reached between the developer and Moreland Planning Scheme that the widening would proceed as follows:

- Indented parking bays will be constructed along the north side of Boyne Street adjacent to the development site
- Ronald Street will be widened by approximately 0.35m, to provide a minimum width of 7.0m adjacent to the development site.

It is considered that these measures will eliminate any potential conflict between parked vehicles and passing traffic, particularly emergency vehicles.

3 Proposed Development

The proposed development consists of the following:

1. A minimum of 380 dwellings, which are likely to vary in size from approximately 150sqm to 700sqm. (Note: for the purposes of this report, we have assumed 420 dwellings.)
2. A 6700sqm (land area) Neighbourhood Hub fronting Elizabeth Street, approximately opposite the Newlands Primary School and existing shops.
3. An internal trafficable road network ranging from access lanes to connector streets.
4. An east-west green link following the Melbourne Water pipeline easement alignment, providing walking and cycling connectivity.
5. Traffic signals at the intersection of Elizabeth Street and the new access road (an extension of Murphy Street) to replace the existing pedestrian operated signals on Elizabeth Street.

An overall plan of the development is shown in Figure 10.

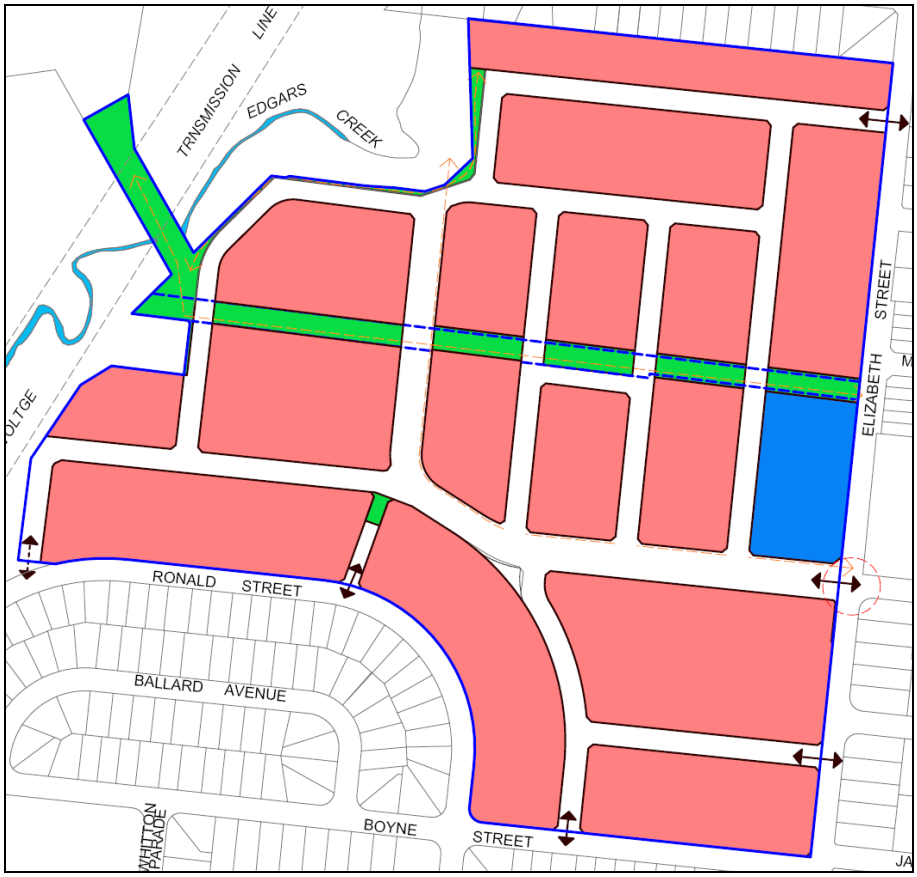


Figure 10: Overall Plan of Proposed Development

4 Proposed Internal Road Network and Functional Hierarchy

The internal road network was designed in accordance with Clause 56.06-8 and DPO10 of the Moreland Planning Scheme. The internal road network, shown in Figure 11, offers a high level of road amenity, connectivity and permeability, and complements the form and structure of the surrounding road network. It should be noted that additional access laneways may be required subject to detailed subdivision design.

This section will present the internal road hierarchy, indicative cross sections, and outline the pedestrian and cycle network where it expands on the trafficable road network. The connection points to the existing road network will also be discussed.

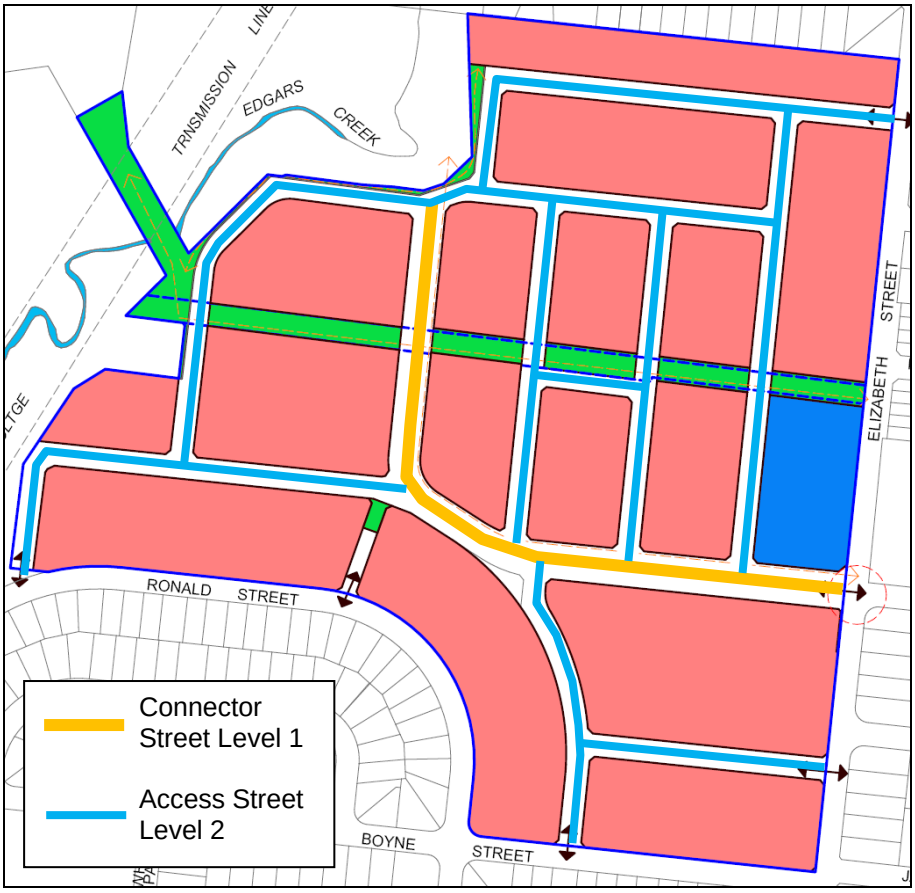


Figure 11: Internal Street Functional Hierarchy

4.1 Comparison with Previous Layout

The internal road network of the revised development plan (RDP) differs slightly from that of the previous layout in the following ways:

1. The RDP eliminates all internal four-way intersections, thereby eliminating the need for internal roundabouts and simplifying traffic control
2. The RDP has a greater degree of roads fronting the Edgars Creek open space. This enables more property frontages to address the open space.
3. The RDP improves pedestrian/cycle connectivity to Ronald Street by providing two well-spaced connections

4. The RDP reduces the two internal culs-de-sac to a short driveway link off Ronald Street, which is also used for pedestrian and cycle connectivity.
5. The RDP provides a better spread of off-road pedestrian/cycle links through the site, as the Melbourne Water easement track and the Connector Street shared paths no longer converge.

A specific requirement of DPO10 was the provision of multiple access points from the existing road network that avoids the creation of a "gated" or cul-de-sac estate. The RDP achieves this by providing three road connections to Elizabeth Street, at least one (possibly two) to Ronald Street and one to Boyne Street. In addition to these, the Melbourne Water easement will be used for pedestrian and bicycle access, whilst one of the Ronald Street connections will be partially closed and used as a green link to the rest of the estate. This provision compares well with the previous layout.

4.1.1 Connector Street – Level 1

The proposed development contains two cross section types that fall within the classification of Connector Street – Level 1. The first is proposed as the main entry boulevard, extending Murphy Street to the west across Elizabeth Street and into the development site.

This street initially features a 3.5m wide median with 5.5m carriageways in each direction to support kerbside parking. Each 5.5m wide carriageway will consist of a 2.2m wide parking lane and a 3.3m wide traffic lane. On approach to the traffic signals, the carriageway is widened to accommodate two queuing lanes as shown in Appendix 2.

The proposed cross section of the main entry boulevard is shown in Figure 12.

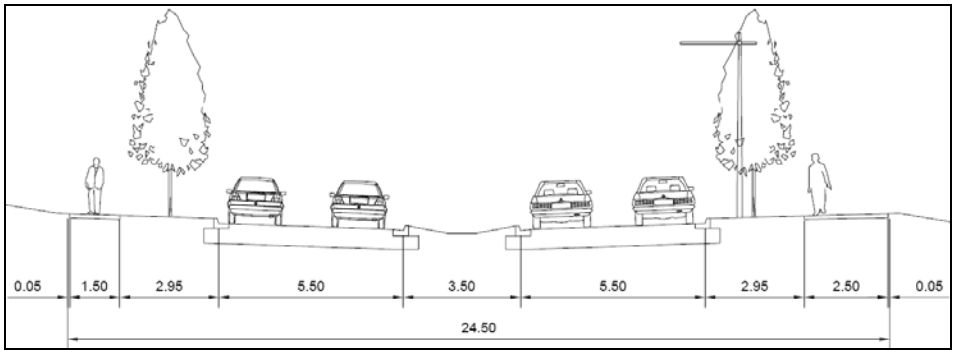


Figure 12: 24.5m Entry Boulevard

Further to the west, the connector street's median ends and the carriageway reverts to an 11.0m wide single carriageway consisting of 2.2m wide parking lanes and 3.3m through lanes in each direction.

Figure 13 shows the proposed connector street cross section for the segment with no median.

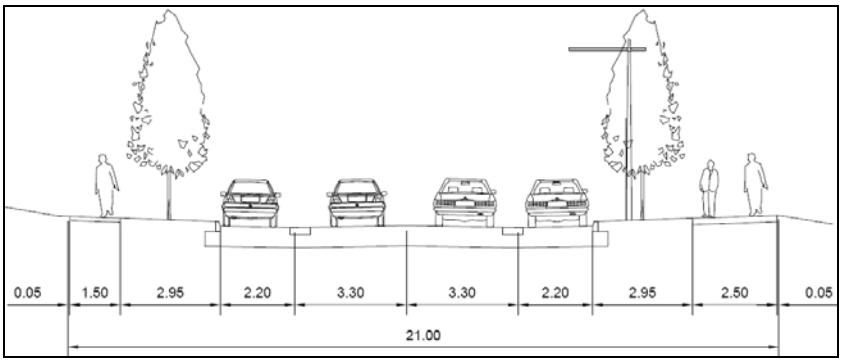


Figure 13: 21.0m Connector Street

No on-road bicycle lanes are proposed as the parallel shared path on the north side (shown as the 2.5m path to the right of Figure 12 and Figure 13) of the connector street is proposed to cater for cyclists.

4.1.2 Access Street – Level 2

The majority of internal roads are classed as Access Street – Level 2, with 15.0m wide road reserves and a 7.0m wide carriageway. This carriageway width is typical in suburban areas and is sufficient to support two-way traffic passing cars parked on one side of the road, or cars parked on both sides of the road with opposing traffic taking turns to pass. Figure 14 shows this cross section.

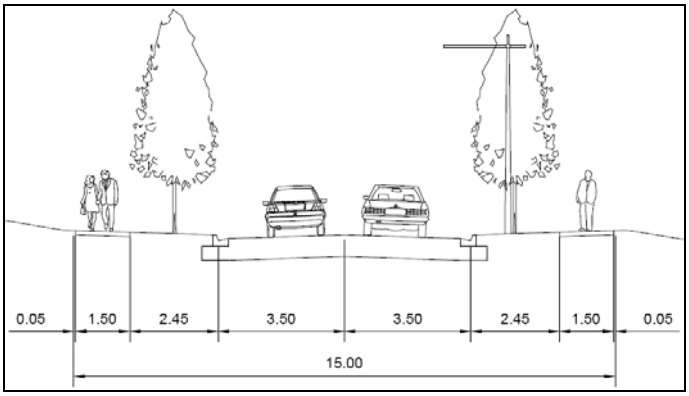


Figure 14: 15.0m Access Street

4.1.3 Access Lane

As the proposed development is anticipated to contain rear-loaded narrow frontage lots, 7.0m wide Access Lanes are proposed at the rear of these properties for dwelling garage access only. Figure 15 shows the indicative cross section for these lanes.

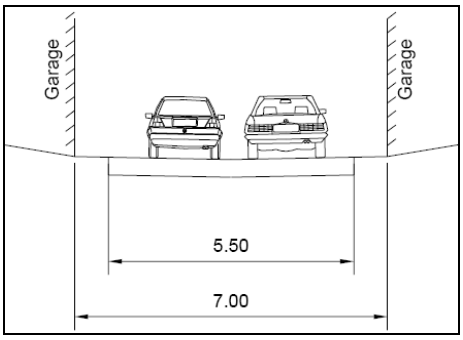


Figure 15: 7.0m Access Lane

4.2 Pedestrian and Cycle Network

The cross sections presented in the previous section show footpaths on both sides of all road types except the rear access lanes, which is an appropriate level of footpath provision and compliant with the requirements of Clause 56.06-8 of the Moreland Planning Scheme. To augment the extensive footpath network, there is an off-road shared path for pedestrians and cyclists proposed along the north side of the main internal connector road (western extension of Murphy Street) that connects the Newlands Primary School and the Neighbourhood Hub to Edgars Creek. This shared path is proposed to be 2.5 metres wide.

The Melbourne Water easement also provides an opportunity for a non-motorised transport connection. It conveniently links the existing bridge over Edgars Creek with the Neighbourhood Hub, existing shops and the Newlands Primary School in a direct east-west connection. This is the highest standard link available to pedestrians and cyclists as there are no passing motorised vehicles.

The alignments of the shared paths are shown in Appendix 1.

4.3 Connection to External Road Network

The proposed development will result in several vehicular access points to the existing road network. Road connections are proposed to all streets abutting the development site with the exception of Tilley Street, where the existing property access is proposed to be removed and replaced by a single residential lot.

Notable access points are discussed in greater detail in this section.

4.3.1 Primary Site Access: Elizabeth Street/Murphy Street Intersection

The primary trafficable site access is proposed to be a westwards extension of Murphy Street. This location represents the nexus of activity between the development site and its surrounds as it is directly adjacent to the Newlands Primary School, adjacent to the proposed neighbourhood hub and in close proximity to the existing shops.

Figure 16: Intersection of Elizabeth Street and Murphy Street, looking south across the existing pedestrian signals

Figure 17: Intersection of Elizabeth Street and Murphy Street, looking west along Murphy Street

Construction of this road will form a four-way intersection that is proposed to be controlled by traffic signals, replacing the existing pedestrian operated signals across Elizabeth Street. A functional layout was developed for this intersection and is included in Appendix 2. Figure 16 and Figure 17 show the intersection of Elizabeth Street and Murphy Street

4.3.2 Possible Future Westernmost Connection to Ronald Street

There is scope for an additional connection to Ronald Street at the western end of the site, subject to additional Council approval. Compared with the previous layout, this connection would benefit the overall development by:

- providing road frontage onto the Edgars Creek open space, allowing properties to front on and address the open space, promoting improved passive surveillance
- improving the permeability and connectivity of the site by providing two well-spaced connections to Ronald Street
- relocating the road connection further west, which will decrease its attractiveness to rat-running through traffic.

It is therefore desirable that this connection proceed.

Even assuming the connection is provided, the traffic distribution and assignment model outlined in section 5.2 predicts a very low volume of traffic using this link to access Ronald Street. Therefore it is considered that whether the link is provided or not, the traffic distribution model will not be significantly altered and remains valid over both scenarios.

Figure 18 shows the existing (fenced) property boundary in relation to the alignment of the Ronald Street road reserve.

Figure 18: Location of the possible future westernmost road connection to Ronald Street. (Relocation of power pole and drainage pit may be required.)

4.3.3 Midblock Connection to Ronald Street

This road is proposed to service six properties and should function as a short driveway link. This link will improve pedestrian and cyclist connectivity between Ronald Street residents and the neighbourhood hub, as the northern portion of the link will be accessible to these modes only and not open to traffic. Garbage trucks will not need to enter this street if residents place bins for collection along Ronald Street.

Compared to the Ronald Street connection shown in the previously approved development plan, it is anticipated that the combination of this midblock connection and the possible westernmost connection discussed in section 4.3.2 will result in lower traffic volumes from the proposed development using Ronald Street. This is because the links are not connective or less direct than that shown in the previous layout.

4.3.4 Green Link to Elizabeth Street

The development proposes to use the Melbourne Water easement for pedestrian and bicycle connectivity between the Edgars Creek reserve and the Neighbourhood Hub. This improves pedestrian/cycle accessibility and will encourage a greater proportion of residents to walk or cycle to the neighbourhood hub.

5 Traffic Generation and Impact

5.1 Traffic Generation

A primary consideration when determining approvals for land development is the degree to which the surrounding road network is able to cater for traffic movements generated by the development. The RTA NSW 2002 Guide to Traffic Generating Developments is the industry-accepted document that provides traffic and parking demand generation rates that are used to determine the extent of generated traffic.

Estimated peak hour and daily traffic volumes resulting from the proposed development are set out in Table 6 and Table 7, which indicate that the site could potentially generate approximately 5300 vehicle trips per day, of which 450 trips would occur in the peak hour.

Housing Type	Descrip-tion	Lot front-ages	App-rox # of lots	Traffic genera-tion rate per lot		Traffic generation	
				Daily	Peak Hr	Daily	Peak Hr
Dwelling House	Courtyard, Villa	12.5m +	84	9 vpd	0.85 vph	756 vpd	71 vph
Medium Density	Compact House Townhouse Terrace	Up to 12.0m	336	6 vpd	0.6 vph	2016 vpd	202 vph
TOTALS			**420**			**2772 vpd**	**273 vph**

Table 6: Traffic generation for residential lots

Use	Size (gross leasable floor area)	Traffic generation rate per 100 sqm		Traffic generation	
		Daily	Peak Hr	Daily	Peak Hr
Retail	1400 sqm	121 vpd	4.6 vph	1694 vpd	64 vph
Commercial (office)	1000 sqm	10 vpd	2 vph	100 vpd	20 vph
Supermarket	600 sqm	121 vpd	15.5 vph	726 vpd	93 vph
TOTALS	**3000 sqm**			**2520 vpd**	**177 vph**

Table 7: Traffic generation for Neighbourhood Hub components

The RTA NSW guide also specifies that 25% of all residential trips tend to be internal to the subdivision. This allows the external traffic impact to be reduced by a similar amount, which was modelled as part of the effect of the Neighbourhood Hub. The 25% reduction results in an external traffic impact of approximately 4000 vehicle trips per day and 340 vehicle trips during the peak hour. This reduction will be discussed further in Section 5.2.2.

It is worth noting that the site's former industrial use (Kodak) would have typically generated approximately 3200 vehicle trips per day, of which 800 trips would occur in the peak hour. As access to loading areas was provided via Boyne Street, numerous heavy vehicle trips would have also been generated on this residential street by the previous use.

5.2 Traffic Distribution and Assignment

The trip distribution and assignment of traffic to the road network is subject to many factors. To estimate the likely traffic impact on the existing road network, a

traffic assignment model was developed that accounted for various factors, which will be presented in this section. The traffic assignment model was created from first principles, without relying on earlier assumptions undertaken in the GTA 2010 traffic report.

5.2.1 Peak Hour Directional Splits

The directional splits adopted in the development of the traffic assignment model are shown in Table 8 and Table 9.

Period	Direction	Proportion
AM peak	Inbound	20%
	Outbound	80%
PM peak	Inbound	80%
	Outbound	20%

Table 8: Directional splits for the Residential component

Period	Direction	Proportion
AM peak	Inbound	90%
	Outbound	10%
PM peak	Inbound	10%
	Outbound	90%

Table 9: Directional splits for the Commercial (Neighbourhood Hub) component

5.2.2 Internal Trips to/from the Neighbourhood Hub

A key consideration in the development of the traffic assignment model is the significance of the neighbourhood hub. It is understood that the Neighbourhood Hub would be designed to meet the needs of residents in the immediate vicinity, including those within the development site. As such, it is reasonable to assume that the traffic generated by the site will be local and distributed evenly in all directions.

As a quarter of the traffic will be between the hub and the new residential lots in the development site, it was assumed that traffic generated by the hub will be split 25% to the west (that is, internal to the development site), and 75% to Elizabeth Street as the main frontage road. Due to queuing space required along the Murphy Street western extension, it is not considered appropriate to place a full-access driveway along the southern frontage of the hub site. As a result, the traffic generated by the neighbourhood hub was modelled to access the existing road network via a driveway connection along Elizabeth Street.

5.2.3 Assignment of Trips to External Street Network

The proposed development was designed to provide multiple access points from the existing road network. As a result, the traffic generated by the development has many choices when selecting a route.

The traffic assignment model allocated the majority of residential traffic generation to enter the site via the intersection of Elizabeth Street and Murphy Street. This is supported by the following points:

- The intersection is proposed to be signalised, assisting with the primary right turn out movement in the AM peak.

- The Murphy Street western extension is the designated connector road with a wider cross section unimpeded by kerbside parking.
- The alignment of the Murphy Street western extension provides excellent connectivity to internal roads within the development site.

As a significant number of residential lots have frontages onto the external street network (primarily Elizabeth Street, Boyne Street and Ronald Street), these interactions were also modelled. An overview of the full traffic generation and assignment model can be found in Appendix 3.

5.3 Post-development Intersection Performance – Adjacent to Development Site

The impact of traffic generated by the development onto the adjacent road network was assessed using SIDRA Intersection 5.0. The resultant performance of individual intersections will be discussed in this section.

Figure 19 shows the modelled post-development intersection volumes under consideration. These three intersections were set up and modelled to provide the results that will be discussed in this section. As all the intersections operate under their assessed capacity with acceptable delays, the intersection operation is expected to be satisfactory.

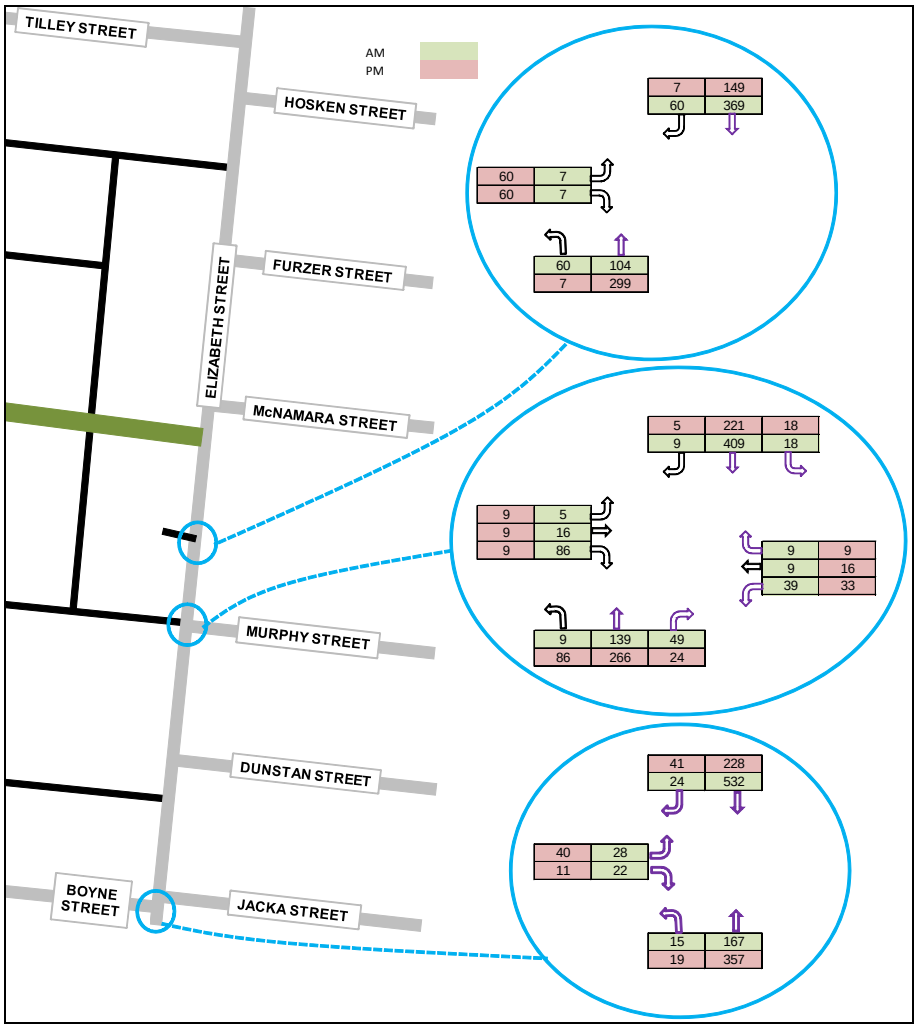


Figure 19: Post-development adjacent intersection turning volumes

5.3.1 Elizabeth Street/Murphy Street Intersection

The SIDRA model for this intersection was developed consistent with the functional design of this intersection shown in Appendix 2. This differs from the GTA model in that the western leg of the intersection has a shared left/through lane, and an exclusive right turn lane, commensurate with the predicted turning movements at this intersection. The GTA model also conservatively assumed that all traffic would access the site via this intersection, whereas the current model does not make this assumption.

Table 10 shows the SIDRA model results for the post-development signalised Elizabeth Street/Murphy Street intersection. Detailed SIDRA model results are provided in Appendix 4.

Peak Hr	Approach Leg	DoS (X)	Avg Delay (s) (worst lane)	95%ile Queue (m)
AM	Elizabeth St (S)	0.27	37.5	38.0
	Murphy St (E)	0.21	35.2	20.3
	Elizabeth St (N)	0.71	33.0	133.7
	Site Access (W)	0.27	32.7	29.3
PM	Elizabeth St (S)	0.76	29.9	150.5
	Murphy St (E)	0.33	39.5	34.8
	Elizabeth St (N)	0.47	24.2	92.9
	Site Access (W)	0.12	37.0	11.1

Table 10: Post-development SIDRA model results for the Elizabeth Street/Murphy Street intersection

5.3.2 Elizabeth Street/Neighbourhood Hub Driveway

The SIDRA model results for the post-development Elizabeth Street/ Neighbourhood Hub driveway are shown in Table 11. The modelling results indicate that this driveway is expected to operate with minimal queues and delays on each of the approaches.

Peak Hr	Approach Leg	DoS (X)	Avg Delay (s) (worst lane)	95%ile Queue (m)
AM	Elizabeth St (S)	0.09	2.4	0
	Elizabeth St (N)	0.26	1.9	16.7
	Driveway (W)	0.03	4.8	0.9
PM	Elizabeth St (S)	0.17	0.1	0
	Elizabeth St (N)	0.09	1.8	5.9
	Driveway (W)	0.23	4.8	8.2

Table 11: Post-development SIDRA model results for the Elizabeth Street/Neighbourhood Hub driveway

5.3.3 Elizabeth Street/Boyne Street Intersection

The SIDRA model results for the unsignalised post-development Elizabeth Street/ Boyne Street intersection are shown in Table 12. The modelling results indicate that this intersection is expected to operate with minimal queues and delays on each of the approaches.

Peak Hr	Approach Leg	DoS (X)	Avg Delay (s) (worst lane)	95%ile Queue (m)
AM	Elizabeth St (S)	0.10	0.7	0
	Elizabeth St (N)	0.32	1.5	23.5
	Boyne St (W)	0.13	15.6	4.2
PM	Elizabeth St (S)	0.21	0.4	0
	Elizabeth St (N)	0.17	3.6	1.6
	Boyne St (W)	0.10	12.7	0.4

Table 12: Post-development SIDRA model results for the Elizabeth Street/Boyne Street intersection

5.4 Post-development Intersection Performance – Farther Afield

The impact of traffic generated by the development onto the arterial road network was assessed using SIDRA Intersection 5.0. The resultant performance of the relevant individual intersections will be discussed in this section.

5.4.1 Murray Road/Elizabeth Street intersection

Figure 20 shows the modelled post-development turning movements at the Murray Road / Elizabeth Street intersection. This intersection was set up in SIDRA and modelled to provide the results shown in Table 13.

It is evident from the modelling results that the signals will be able to cater for the increased traffic demand by increasing the cycle time from 80 seconds to 90 seconds. This will maintain degrees of saturation on all approaches at acceptable levels. Average delays and queue lengths will rise slightly, commensurate with the increased cycle time.

Therefore, the traffic generated by the proposed development can be absorbed at the arterial road level due to the adaptability of the traffic signal control at this intersection.

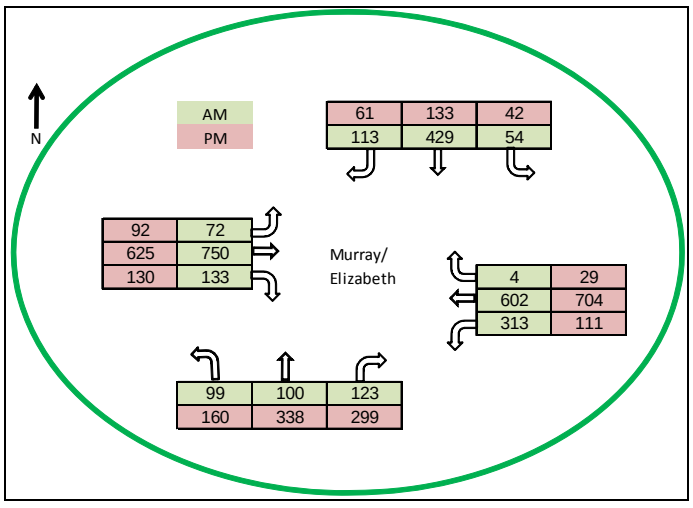


Figure 20: Post-development turning movements for the Murray Road / Elizabeth Street intersection

Peak Hr	Approach Leg	DoS (X)	Avg Delay (s) (worst lane)	95%ile Queue (m)
AM (90sec cycle time)	Elizabeth St (S)	0.55	31.4	63.6
	Murray Rd (E)	0.83	40.3	170.8
	Elizabeth St (N)	0.83	37.9	173.6
	Murray Rd (W)	0.67	33.6	112.4
PM (90 sec cycle time)	Elizabeth St (S)	0.85	35.6	163.4
	Murray Rd (E)	0.86	44.2	159.3
	Elizabeth St (N)	0.82	50.2	76.9
	Murray Rd (W)	0.86	34.4	101.9

Table 13: Post-development SIDRA model results for the Murray Road / Elizabeth Street intersection

5.4.2 Murray Road/Jackson Parade intersection

Figure 21 shows the modelled post-development turning movements at the Murray Road / Elizabeth Street intersection. This intersection was set up in SIDRA and modelled to provide the results shown in Table 14.

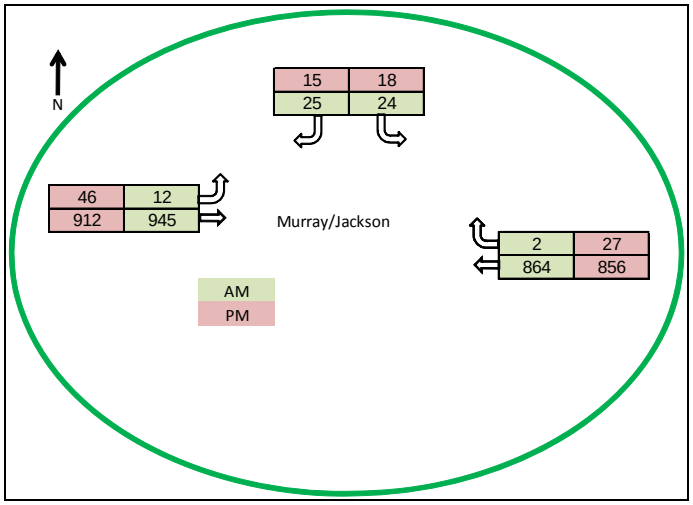


Figure 21: Post-development turning movements for the Murray Road / Jackson Parade intersection

Peak Hr	Approach Leg	DoS (X)	Avg Delay (s) (worst lane)	95%ile Queue (m)
AM	Murray Rd (E)	0.48	14.5	0.1
	Jackson Pde (N)	0.36	66.1	9.3
	Murray Rd (W)	0.27	0.1	0.0
PM	Murray Rd (E)	0.48	15.0	1.7
	Jackson Pde (N)	0.22	58.5	5.3
	Murray Rd (W)	0.27	0.8	0.0

Table 14: Post-development SIDRA model results for the Murray Road / Jackson Parade intersection

The modelling results show that the traffic generated by the proposed development increases the degrees of saturation along most approaches of the

Murray Road / Jackson Parade intersection. The largest impacts are found on the Jackson Parade north approach, where average delays are expected to increase from 51.5 seconds to 66.1 seconds during the AM peak and from 49.7 seconds to 58.5 seconds in the PM peak. Queue lengths are expected to increase also, but still to an acceptable degree, with the 95th percentile AM peak queue not exceeding 2 car lengths.

It is expected that the increase in delays experienced by the north approach will be mitigated by a degree of migration to the Murray Road / Elizabeth Street intersection if drivers find that the delays are excessive. As the traffic volumes expected to use this approach are minimal (less than one vehicle per minute in the post-development scenario), this migration is not expected to have a significant flow-on impact on Elizabeth Street.

Therefore, although delays along Jackson Parade may be seen as borderline unacceptable when viewed in isolation, the surrounding local and arterial road network as a whole is expected to satisfactorily cater for the traffic generated by the proposed development.

6 Public Transport Considerations

The development site is serviced by bus route No. 526. This route connects the subject site to the Coburg activity centre (Sydney Road/Bell Street), with a connection to the Coburg Railway Station. The bus service runs adjacent to the development site along Boyne Street and Elizabeth Street. Figure 22 shows the public transport network surrounding the development site.

The bus timetable currently provides for one service every 30 minutes consistently throughout its hours of operation, which are 6:10am to 7:45pm weekdays, and 7:15am to 5:45pm on Saturdays. There is no bus service on Sundays and public holidays.

Figure 22: Public transport network
(source: Metlink)

DPO10 requires consideration of a possible bus route through the development site, with provision of appropriate road pavement widths, which also accounts for the views of the Victorian Department of Transport Public Transport Division (DoT).

The DoT Public Transport Guidelines for Land Use and Development (clause 3.2.1) specifies that neighbourhoods should be designed so that dwellings will be within 400 metres of a bus route. This 400 metre bus catchment is shown with a yellow highlight in Figure 23. It is apparent that nearly all of the lots within the development site will comply with the DoT Public Transport Guidelines.

Further supporting bus accessibility, the internal road and footpath network is sufficiently extensive with multiple pedestrian connections provided to the bus route.

Figure 23: Bus catchment (400m) from existing bus route

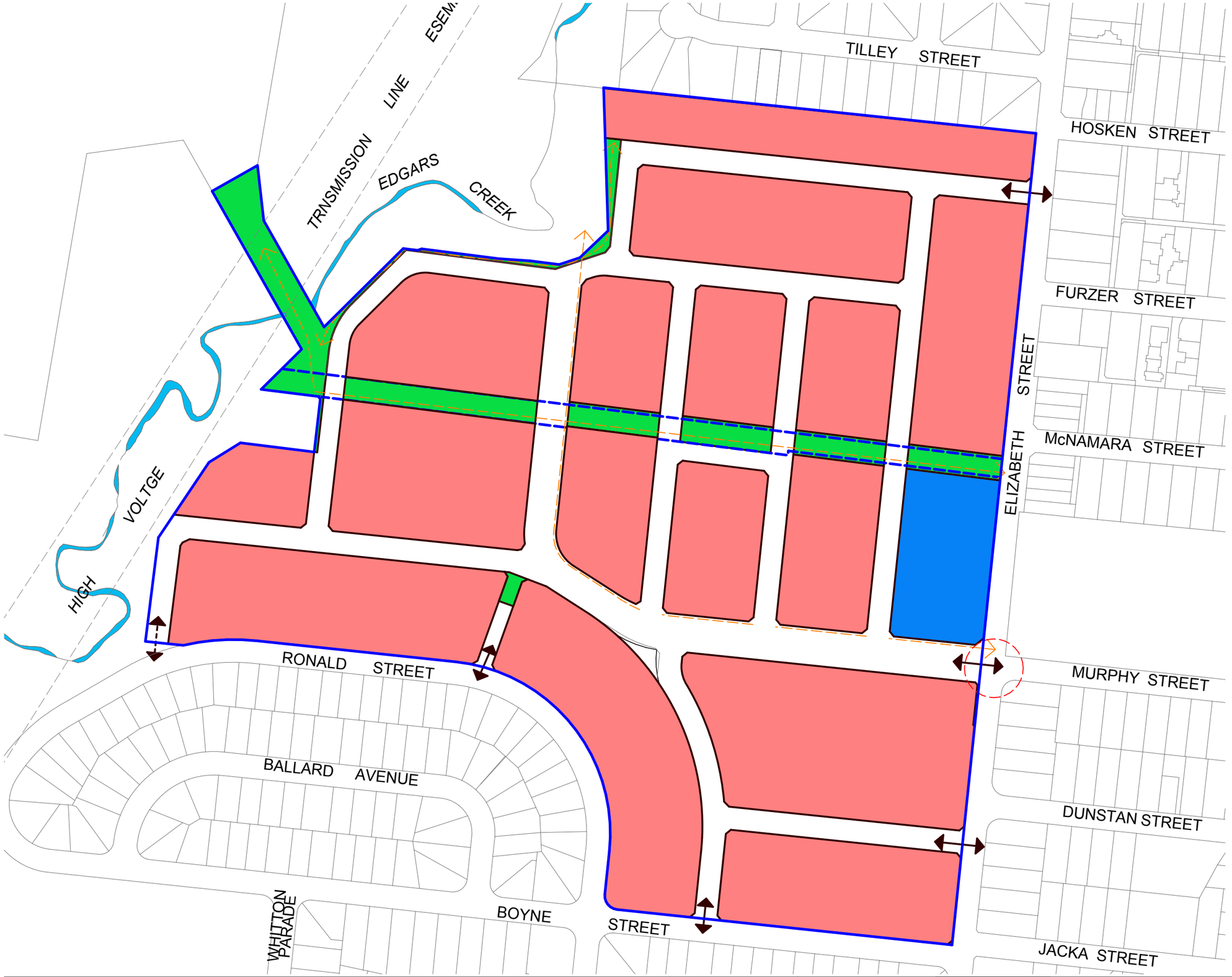
Finally, prior correspondence between GTA Consultants and the DoT has indicated that there is no intention or support to modify this bus route as a result of the proposed development, and that the existing public transport provision is satisfactory to meet the needs of the proposed development. A copy of this correspondence may be found in Appendix 5.

7 Conclusion

Based on the analysis and discussion presented in this report, the following conclusions are made:

1. There are no issues expected to arise from the location and layout of the proposed connections to the existing road network.
2. The internal road network is compliant with the requirements of the Moreland Planning Scheme.
3. The development site is expected to generate up to 5300 vehicle trips per day and 450 vehicle trips during the peak hour, of which 25% of trips will be internal to the proposed development, resulting in a net traffic impact on existing streets of approximately 4000 vehicle trips per day and 340 vehicle trips during the peak hour.
4. The existing signalised intersection at Murray Road and Elizabeth Street is expected to operate satisfactorily, with a slight increase in cycle time to cater for the increased traffic load.
5. The proposed signalised intersection at Elizabeth Street and Murphy Street is expected to operate satisfactorily.
6. Unsignalised intersections of Jackson Parade/Murray Road, Elizabeth Street/Boyne Street and Elizabeth Street/Neighbourhood Hub driveway are expected to operate satisfactorily, albeit with some migration possible away from the Jackson Parade/Murray Road intersection.
7. The existing public transport provision and routing satisfactorily meets the needs of the proposed development as nearly all the lots within the development site comply with the DoT Public Transport Guidelines without requiring a deviation in the existing bus route.
8. Parking requirements along Elizabeth Street, Boyne Street and Ronald Street is sufficiently catered for by a mix of on-street and off-street parking.
9. Constructing indented parking bays in Boyne Street and the widening of Ronald Street to 7.0m carriageways will facilitate parking on both sides of the road as well as emergency vehicle access.

Appendix 1 Overall Development Plan



LEGEND

- RESIDENTIAL LAND
- PUBLIC OPEN SPACE
- MIXED USE NEIGHBOURHOOD HUB
- DEVELOPMENT PLAN BOUNDARY
- WALKING / CYCLING PATH (INDICATIVE ALIGNMENT)
- PROPOSED TRAFFIC SIGNALS
- ROAD CONNECTION
- ROAD CONNECTION (SUBJECT TO ADDITIONAL COUNCIL APPROVAL)
- MELBOURNE WATER EASEMENT
- EDGARS CREEK
- ROAD RESERVE (NOTE: Additional access laneways may be required subject to detailed subdivision design)

Satterley
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Collie Pty. Ltd.
29 Coventry St, Southbank VIC 3006 | 03 8698 9300 | www.colliepl.com

Coburg Hill

Client
Satterley Property Group

Project
Kodak Site Masterplan
Melbourne

Project Number
10595

Drawing
Development Plan

Scale 1:

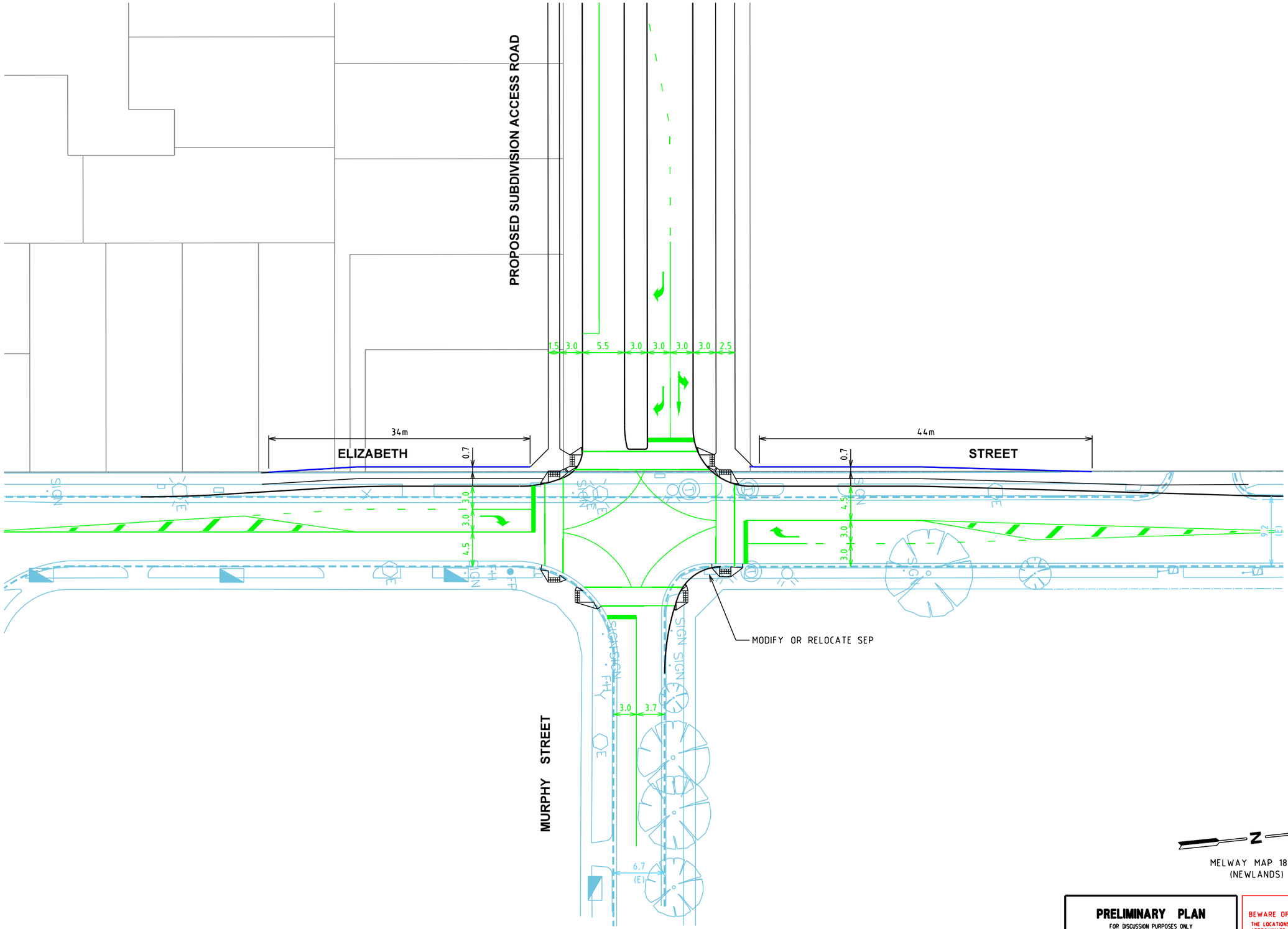
Date **30/05/2011**

Drawing No. | Rev.

Appendix 2 Elizabeth Street/Murphy Street
Traffic Signal Layout Plan

CPG INTERNAL USE ONLY

CPG PROJECT No.	REV. No.	DATE	DESCRIPTION	CPG CHECKED
B00471	C	08.02.11	ACCESS ROAD MODIFIED	ORIG SIGNED J.T. 08.02.11



MELWAY MAP 18 B9
(NEWLANDS)

PRELIMINARY PLAN
FOR DISCUSSION PURPOSES ONLY
SUBJECT TO CHANGE WITHOUT NOTIFICATION

WARNING
BEWARE OF UNDERGROUND SERVICES
THE LOCATIONS OF UNDERGROUND SERVICES ARE APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD BE PROVEN ON SITE.NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

ISSUE	APP'D	DATE	AMENDMENT
E			
D			
C			
B			
A			

GENERAL NOTES
1. BASE INFORMATION OBTAINED FROM CLIENT.
2. ALL DIMENSIONS ARE TO FACE OF KERB UNLESS OTHERWISE SHOWN.

CPG
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DESIGNED CPG DECEMBER 2010
CPG FINAL CHECKED ORIGINAL SIGNED
APPROVED
CAT:
PROJ:
FILE:

Satterley

SCALE OF METRES
HOR 0 5 10
VER 0

STAGE 1A KODAK REDEVELOPMENT
ELIZABETH STREET / MURPHY STREET
MORELAND CITY & DAREBIN CITY
CONCEPT FUNCTIONAL LAYOUT

FILE NO.	CONTRACT NO.	SHEET NO.	DRAWING NO.	ISSUE
			B00471-01	

8/02/2011 5:34:15 PM Default B00471-01.dgn

Appendix 3 Traffic Generation and Distribution Model

B00471 Kodak Residential Development
Traffic Generation and Assignment Model
Modelled turning movement volumes

Appendix 4 Intersection analysis results
(SIDRA Intersection 5.0)

LANE SUMMARY

Site: Eliz-Murphy existing AM

Elizabeth/Murphy existing T-junc
Giveway / Yield (Two-Way)

Lane Use and Performance

	Demand Flows				HV	Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	95% Back of Queue		Lane Length	SL Type	Cap. Adj.	Prob. Block.
	L	T	R	Total							Vehicles	Distance				
	veh/h	veh/h	veh/h	veh/h	%	veh/h	v/c	%	sec		veh	m	m		%	%
South: Elizabeth St S																
Lane 1	0	80	44	124	5.0	1365	0.091	100	4.6	LOS A	0.7	4.9	500	–	0.0	0.0
Approach	0	80	44	124	5.0		0.091		4.6	LOS A	0.7	4.9				
East: Murphy St																
Lane 1	38	0	2	40	5.0	697	0.057	100	9.3	LOS A	0.2	1.8	500	–	0.0	0.0
Approach	38	0	2	40	5.0		0.057		9.3	LOS A	0.2	1.8				
North: Elizabeth St N																
Lane 1	12	408	0	420	5.0	1886	0.223	100	0.2	LOS A	0.0	0.0	500	–	0.0	0.0
Approach	12	408	0	420	5.0		0.223		0.2	LOS A	0.0	0.0				
Intersection				584	5.0		0.223		1.7	NA	0.7	4.9				

LANE SUMMARY

Site: Eliz-Murphy existing PM

Elizabeth/Murphy existing T-junc
Giveway / Yield (Two-Way)

Lane Use and Performance

	Demand Flows				HV	Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	95% Back of Queue		Lane Length	SL Type	Cap. Adj.	Prob. Block.
	L	T	R	Total							Vehicles	Distance				
	veh/h	veh/h	veh/h	veh/h	%	veh/h	v/c	%	sec		veh	m	m		%	%
South: Elizabeth St S																
Lane 1	0	256	22	278	5.0	1807	0.154	100	1.4	LOS A	1.3	9.2	500	–	0.0	0.0
Approach	0	256	22	278	5.0		0.154		1.4	LOS A	1.3	9.2				
East: Murphy St																
Lane 1	31	0	3	34	5.0	886	0.038	100	7.8	LOS A	0.2	1.2	500	–	0.0	0.0
Approach	31	0	3	34	5.0		0.038		7.8	LOS A	0.2	1.2				
North: Elizabeth St N																
Lane 1	6	173	0	179	5.0	1885	0.095	100	0.2	LOS A	0.0	0.0	500	–	0.0	0.0
Approach	6	173	0	179	5.0		0.095		0.2	LOS A	0.0	0.0				
Intersection				491	5.0		0.154		1.4	NA	1.3	9.2				

LANE SUMMARY

Site: Eliz-Murphy postdev AM splitphase

Elizabeth/Murphy proposed signals
Signals - Fixed Time Cycle Time = 70 seconds

Lane Use and Performance

	Demand Flows				HV	Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	95% Back of Queue		Lane Length	SL Type	Cap. Adj.	Prob. Block.
	L	T	R	Total							Vehicles	Distance				
	veh/h	veh/h	veh/h	veh/h	%	veh/h	v/c	%	sec		veh	m	m		%	%
South: Elizabeth St S																
Lane 1	9	146	0	156	5.0	625	0.249	100	17.7	LOS B	5.2	38.0	500	–	0.0	0.0
Lane 2	0	0	52	52	5.0	189	0.273	100	37.5	LOS D	2.5	18.2	40	Turn Bay	0.0	0.0
Approach	9	146	52	207	5.0		0.273		22.6	LOS C	5.2	38.0				
East: Murphy St																
Lane 1	41	9	9	60	5.0	286	0.210	100	35.2	LOS D	2.8	20.3	500	–	0.0	0.0
Approach	41	9	9	60	5.0		0.210		35.2	LOS D	2.8	20.3				
North: Elizabeth St N																
Lane 1	20	432	0	452	5.0	638	0.707	100	33.0	LOS C	18.3	133.7	500	–	0.0	0.0
Lane 2	0	0	9	9	5.0	284[1]	0.033	100	26.7	LOS C	0.4	2.8	40	Turn Bay	0.0	0.0
Approach	20	432	9	461	5.0		0.707		32.9	LOS C	18.3	133.7				
West: Site access																
Lane 1	6	18	0	24	5.0	315	0.077	100	28.6	LOS C	1.1	8.1	500	–	0.0	0.0
Lane 2	0	0	95	95	5.0	353	0.268	100	32.7	LOS C	4.0	29.3	55	Turn Bay	0.0	0.0
Approach	6	18	95	119	5.0		0.268		31.8	LOS C	4.0	29.3				
Intersection				847	5.0		0.707		30.4	LOS C	18.3	133.7				

LANE SUMMARY

Site: Eliz-Murphy postdev PM splitphase

Elizabeth/Murphy proposed signals
Signals - Fixed Time Cycle Time = 80 seconds

Lane Use and Performance

	Demand Flows				HV	Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	95% Back of Queue		Lane Length	SL Type	Cap. Adj.	Prob. Block.
	L	T	R	Total							Vehicles	Distance				
	veh/h	veh/h	veh/h	veh/h	%	veh/h	v/c	%	sec		veh	m	m		%	%
South: Elizabeth St S																
Lane 1	141	418	0	558	5.0	736	0.759	100	25.2	LOS C	20.6	150.5	500	–	0.0	0.0
Lane 2	0	0	38	38	5.0	245[1]	0.153	100	29.9	LOS C	1.7	12.3	40	Turn Bay	0.0	0.0
Approach	141	418	38	596	5.0		0.759		25.5	LOS C	20.6	150.5				
East: Murphy St																
Lane 1	53	27	14	94	5.0	284	0.330	100	39.5	LOS D	4.8	34.8	500	–	0.0	0.0
Approach	53	27	14	94	5.0		0.330		39.5	LOS D	4.8	34.8				
North: Elizabeth St N																
Lane 1	28	346	0	374	5.0	791	0.473	100	24.2	LOS C	12.7	92.9	500	–	0.0	0.0
Lane 2	0	0	9	9	5.0	329[1]	0.029	100	22.9	LOS C	0.4	2.7	40	Turn Bay	0.0	0.0
Approach	28	346	9	383	5.0		0.473		24.2	LOS C	12.7	92.9				
West: Site access																
Lane 1	14	14	0	28	5.0	241	0.117	100	37.0	LOS D	1.5	11.1	500	–	0.0	0.0
Lane 2	0	0	14	14	5.0	309	0.046	100	36.3	LOS D	0.7	5.3	55	Turn Bay	0.0	0.0
Approach	14	14	14	42	5.0		0.117		36.7	LOS D	1.5	11.1				
Intersection				1115	5.0		0.759		26.7	LOS C	20.6	150.5				

Level of Service (Aver. Int. Delay): LOS B. Based on average delay for all lanes. LOS Method: Delay (HCM).
Level of Service (Worst Lane): LOS C. LOS Method for individual lanes: Delay (HCM).
Approach LOS values are based on average delay for all lanes.

LANE SUMMARY

Site: Elizabeth-Boyne existing AM

Elizabeth-Boyne
Giveway / Yield (Two-Way)

Lane Use and Performance

	Demand Flows				HV	Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	95% Back of Queue		Lane Length	SL Type	Cap. Adj.	Prob. Block.
	L	T	R	Total							Vehicles	Distance				
	veh/h	veh/h	veh/h	veh/h	%	veh/h	v/c	%	sec		veh	m	m		%	%
South: Elizabeth St S																
Lane 1	14	107	0	121	5.0	1877	0.064	100	0.9	LOS A	0.0	0.0	500	–	0.0	0.0
Approach	14	107	0	121	5.0		0.064		0.9	LOS A	0.0	0.0				
North: Elizabeth St N																
Lane 1	0	439	8	447	5.0	1872	0.239	100	0.8	LOS A	2.1	15.2	500	–	0.0	0.0
Approach	0	439	8	447	5.0		0.239		0.8	LOS A	2.1	15.2				
West: Boyne St																
Lane 1	16	0	16	32	5.0	531	0.059	100	12.7	LOS B	0.3	1.9	500	–	0.0	0.0
Approach	16	0	16	32	5.0		0.059		12.7	LOS B	0.3	1.9				
Intersection				600	5.0		0.239		1.4	NA	2.1	15.2				

LANE SUMMARY

Site: Elizabeth-Boyne existing PM

Elizabeth-Boyne
Giveway / Yield (Two-Way)

Lane Use and Performance

	Demand Flows				HV	Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	95% Back of Queue		Lane Length	SL Type	Cap. Adj.	Prob. Block.
	L	T	R	Total							Vehicles	Distance				
	veh/h	veh/h	veh/h	veh/h	%	veh/h	v/c	%	sec		veh	m	m		%	%
South: Elizabeth St S																
Lane 1	12	254	0	265	5.0	1884	0.141	100	0.4	LOS A	0.0	0.0	500	–	0.0	0.0
Approach	12	254	0	265	5.0		0.141		0.4	LOS A	0.0	0.0				
North: Elizabeth St N																
Lane 1	0	172	32	203	5.0	1698	0.120	100	2.6	LOS A	1.0	7.1	500	–	0.0	0.0
Approach	0	172	32	203	5.0		0.120		2.6	LOS A	1.0	7.1				
West: Boyne St																
Lane 1	24	0	9	34	5.0	686	0.049	100	11.0	LOS B	0.2	1.6	500	–	0.0	0.0
Approach	24	0	9	34	5.0		0.049		11.0	LOS B	0.2	1.6				
Intersection				502	5.0		0.141		2.0	NA	1.0	7.1				

LANE SUMMARY

Site: Elizabeth-Boyne postdev AM

Elizabeth-Boyne
Giveway / Yield (Two-Way)

Lane Use and Performance

	Demand Flows				HV	Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	95% Back of Queue		Lane Length	SL Type	Cap. Adj.	Prob. Block.
	L	T	R	Total							Vehicles	Distance				
	veh/h	veh/h	veh/h	veh/h	%	veh/h	v/c	%	sec		veh	m	m		%	%
South: Elizabeth St S																
Lane 1	16	176	0	192	5.0	1880	0.102	100	0.7	LOS A	0.0	0.0	500	–	0.0	0.0
Approach	16	176	0	192	5.0		0.102		0.7	LOS A	0.0	0.0				
North: Elizabeth St N																
Lane 1	0	565	26	592	5.0	1840	0.321	100	1.5	LOS A	3.2	23.5	500	–	0.0	0.0
Approach	0	565	26	592	5.0		0.321		1.5	LOS A	3.2	23.5				
West: Boyne St																
Lane 1	29	0	23	53	5.0	400	0.131	100	15.6	LOS C	0.6	4.2	500	–	0.0	0.0
Approach	29	0	23	53	5.0		0.131		15.6	LOS C	0.6	4.2				
Intersection				836	5.0		0.321		2.2	NA	3.2	23.5				

LANE SUMMARY

Site: Elizabeth-Boyne postdev PM

Elizabeth-Boyne
Giveway / Yield (Two-Way)

Lane Use and Performance

	Demand Flows				HV	Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	95% Back of Queue		Lane Length	SL Type	Cap. Adj.	Prob. Block.
	L	T	R	Total							Vehicles	Distance				
	veh/h	veh/h	veh/h	veh/h	%	veh/h	v/c	%	sec		veh	m	m		%	%
South: Elizabeth St S																
Lane 1	20	381	0	401	5.0	1884	0.213	100	0.4	LOS A	0.0	0.0	500	–	0.0	0.0
Approach	20	381	0	401	5.0		0.213		0.4	LOS A	0.0	0.0				
North: Elizabeth St N																
Lane 1	0	241	43	284	5.0	1634	0.174	100	3.6	LOS A	1.6	12.0	500	–	0.0	0.0
Approach	0	241	43	284	5.0		0.174		3.6	LOS A	1.6	12.0				
West: Boyne St																
Lane 1	42	0	12	54	5.0	556	0.097	100	12.7	LOS B	0.4	3.1	500	–	0.0	0.0
Approach	42	0	12	54	5.0		0.097		12.7	LOS B	0.4	3.1				
Intersection				739	5.0		0.213		2.5	NA	1.6	12.0				

LANE SUMMARY

Site: Elizabeth/Commercial postdev AM

Elizabeth St/Commercial site
Giveway / Yield (Two-Way)

Lane Use and Performance

	Demand Flows				HV	Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	95% Back of Queue		Lane Length	SL Type	Cap. Adj.	Prob. Block.
	L	T	R	Total							Vehicles	Distance				
	veh/h	veh/h	veh/h	veh/h	%	veh/h	v/c	%	sec		veh	m	m		%	%
South: Elizabeth St S																
Lane 1	63	109	0	173	5.0	1853	0.093	100	2.4	LOS A	0.0	0.0	50	–	0.0	0.0
Approach	63	109	0	173	5.0		0.093		2.4	LOS A	0.0	0.0				
North: Elizabeth St N																
Lane 1	0	389	63	453	5.0	1752	0.258	100	1.9	LOS A	2.3	16.7	500	–	0.0	0.0
Approach	0	389	63	453	5.0		0.258		1.9	LOS A	2.3	16.7				
West: Commercial site access																
Lane 1	7	0	7	15	5.0	503	0.029	100	4.8	LOS A	0.1	0.9	50	–	0.0	0.0
Approach	7	0	7	15	5.0		0.029		4.8	LOS A	0.1	0.9				
Intersection				640	5.0		0.258		2.1	NA	2.3	16.7				

LANE SUMMARY

Site: Elizabeth/Commercial postdev PM

Elizabeth St/Commercial site
Giveway / Yield (Two-Way)

Lane Use and Performance

	Demand Flows				HV	Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	95% Back of Queue		Lane Length	SL Type	Cap. Adj.	Prob. Block.
	L	T	R	Total							Vehicles	Distance				
	veh/h	veh/h	veh/h	veh/h	%	veh/h	v/c	%	sec		veh	m	m		%	%
South: Elizabeth St S																
Lane 1	7	316	0	323	5.0	1886	0.171	100	0.1	LOS A	0.0	0.0	50	–	0.0	0.0
Approach	7	316	0	323	5.0		0.171		0.1	LOS A	0.0	0.0				
North: Elizabeth St N																
Lane 1	0	157	7	164	5.0	1820	0.090	100	1.8	LOS A	0.8	5.9	500	–	0.0	0.0
Approach	0	157	7	164	5.0		0.090		1.8	LOS A	0.8	5.9				
West: Commercial site access																
Lane 1	63	0	63	126	5.0	550	0.230	100	4.8	LOS A	1.1	8.2	50	–	0.0	0.0
Approach	63	0	63	126	5.0		0.230		4.8	LOS A	1.1	8.2				
Intersection				614	5.0		0.230		1.6	NA	1.1	8.2				

LANE SUMMARY

Site: Murray/Jackson AM existing

Murray Rd/Jackson Pde, Coburg
Giveway / Yield (Two-Way)

Lane Use and Performance

	Demand Flows				HV	Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	95% Back of Queue		Lane Length	SL Type	Cap. Adj.	Prob. Block.
	L	T	R	Total							Vehicles	Distance				
	veh/h	veh/h	veh/h	veh/h	%	veh/h	v/c	%	sec		veh	m	m		%	%
East: Murray Rd E																
Lane 1	0	902	0	902	5.0	1889	0.478	100	0.0	LOS A	0.0	0.0	500	–	0.0	0.0
Lane 2	0	0	1	1	0.0	484	0.002	100	14.0	LOS B	0.0	0.1	15	Turn Bay	0.0	0.0
Approach	0	902	1	903	5.0		0.478		0.0	LOS B	0.0	0.1				
North: Jackson Pde																
Lane 1	11	0	0	11	0.0	302[1]	0.035	100	16.3	LOS C	0.1	0.8	10	Turn Bay	0.0	0.0
Lane 2	0	0	12	12	0.0	79	0.147	100	51.5	LOS F	0.5	3.6	500	–	0.0	0.0
Approach	11	0	12	22	0.0		0.147		34.7	LOS F	0.5	3.6				
West: Murray Rd W																
Lane 1	5	480	0	486	4.9	1888	0.257	100	0.1	LOS A	0.0	0.0	500	–	0.0	0.0
Lane 2	0	486	0	486	5.0	1889	0.257	100	0.0	LOS A	0.0	0.0	500	–	0.0	0.0
Approach	5	966	0	972	5.0		0.257		0.0	LOS A	0.0	0.0				
Intersection				1897	4.9		0.478		0.4	NA	0.5	3.6				

LANE SUMMARY

Site: Murray/Jackson PM existing

Murray Rd/Jackson Pde, Coburg
Giveway / Yield (Two-Way)

Lane Use and Performance

	Demand Flows				HV	Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	95% Back of Queue		Lane Length	SL Type	Cap. Adj.	Prob. Block.
	L	T	R	Total							Vehicles	Distance				
	veh/h	veh/h	veh/h	veh/h	%	veh/h	v/c	%	sec		veh	m	m		%	%
East: Murray Rd E																
Lane 1	0	893	0	893	5.0	1889	0.473	100	0.0	LOS A	0.0	0.0	500	–	0.0	0.0
Lane 2	0	0	19	19	0.0	491	0.039	100	14.3	LOS B	0.2	1.1	15	Turn Bay	0.0	0.0
Approach	0	893	19	912	4.9		0.473		0.3	LOS B	0.2	1.1				
North: Jackson Pde																
Lane 1	13	0	0	13	0.0	309[1]	0.041	100	15.9	LOS C	0.1	1.0	10	Turn Bay	0.0	0.0
Lane 2	0	0	9	9	0.0	81	0.117	100	49.7	LOS E	0.4	2.8	500	–	0.0	0.0
Approach	13	0	9	22	0.0		0.117		30.4	LOS E	0.4	2.8				
West: Murray Rd W																
Lane 1	28	452	0	481	4.7	1887	0.255	100	0.5	LOS A	0.0	0.0	500	–	0.0	0.0
Lane 2	0	481	0	481	5.0	1889	0.255	100	0.0	LOS A	0.0	0.0	500	–	0.0	0.0
Approach	28	934	0	962	4.9		0.255		0.2	LOS A	0.0	0.0				
Intersection				1896	4.8		0.473		0.6	NA	0.4	2.8				

LANE SUMMARY

Site: Murray/Jackson AM development

Murray Rd/Jackson Pde, Coburg
Giveway / Yield (Two-Way)

Lane Use and Performance

	Demand Flows				HV	Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	95% Back of Queue		Lane Length	SL Type	Cap. Adj.	Prob. Block.
	L	T	R	Total							Vehicles	Distance				
	veh/h	veh/h	veh/h	veh/h	%	veh/h	v/c	%	sec		veh	m	m		%	%
East: Murray Rd E																
Lane 1	0	909	0	909	5.0	1889	0.482	100	0.0	LOS A	0.0	0.0	500	–	0.0	0.0
Lane 2	0	0	2	2	0.0	460	0.005	100	14.5	LOS B	0.0	0.1	15	Turn Bay	0.0	0.0
Approach	0	909	2	912	5.0		0.482		0.0	LOS B	0.0	0.1				
North: Jackson Pde																
Lane 1	25	0	0	25	0.0	292[1]	0.087	100	17.1	LOS C	0.3	2.1	10	Turn Bay	0.0	0.0
Lane 2	0	0	26	26	0.0	73	0.362	100	66.1	LOS F	1.3	9.3	500	–	0.0	0.0
Approach	25	0	26	52	0.0		0.362		42.1	LOS F	1.3	9.3				
West: Murray Rd W																
Lane 1	13	491	0	504	4.9	1888	0.267	100	0.2	LOS A	0.0	0.0	500	–	0.0	0.0
Lane 2	0	504	0	504	5.0	1889	0.267	100	0.0	LOS A	0.0	0.0	500	–	0.0	0.0
Approach	13	995	0	1007	4.9		0.267		0.1	LOS A	0.0	0.0				
Intersection				1971	4.8		0.482		1.2	NA	1.3	9.3				

LANE SUMMARY

Site: Murray/Jackson PM development

Murray Rd/Jackson Pde, Coburg
Giveway / Yield (Two-Way)

Lane Use and Performance

	Demand Flows				HV	Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	95% Back of Queue		Lane Length	SL Type	Cap. Adj.	Prob. Block.
	L	T	R	Total							Vehicles	Distance				
	veh/h	veh/h	veh/h	veh/h	%	veh/h	v/c	%	sec		veh	m	m		%	%
East: Murray Rd E																
Lane 1	0	901	0	901	5.0	1889	0.477	100	0.0	LOS A	0.0	0.0	500	–	0.0	0.0
Lane 2	0	0	28	28	0.0	459	0.062	100	15.0	LOS B	0.2	1.7	15	Turn Bay	0.0	0.0
Approach	0	901	28	929	4.8		0.477		0.5	LOS B	0.2	1.7				
North: Jackson Pde																
Lane 1	19	0	0	19	0.0	297[1]	0.064	100	16.7	LOS C	0.2	1.5	10	Turn Bay	0.0	0.0
Lane 2	0	0	16	16	0.0	73	0.217	100	58.5	LOS F	0.8	5.3	500	–	0.0	0.0
Approach	19	0	16	35	0.0		0.217		35.7	LOS F	0.8	5.3				
West: Murray Rd W																
Lane 1	48	455	0	504	4.5	1886	0.267	100	0.8	LOS A	0.0	0.0	500	–	0.0	0.0
Lane 2	0	505	0	505	5.0	1889	0.267	100	0.0	LOS A	0.0	0.0	500	–	0.0	0.0
Approach	48	960	0	1008	4.8		0.267		0.4	LOS A	0.0	0.0				
Intersection				1973	4.7		0.477		1.0	NA	0.8	5.3				

LANE SUMMARY

Site: Elizabeth/Murray AM existing

Elizabeth St/Murray St, North Coburg
Signals - Fixed Time Cycle Time = 80 seconds

Lane Use and Performance

	Demand Flows				HV	Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	95% Back of Queue		Lane Length	SL Type	Cap. Adj.	Prob. Block.
	L	T	R	Total							Vehicles	Distance				
	veh/h	veh/h	veh/h	veh/h	%	veh/h	v/c	%	sec		veh	m	m		%	%
South: Elizabeth St S																
Lane 1	103	65	0	168	5.0	531	0.317	100	30.2	LOS C	6.9	50.4	500	–	0.0	0.0
Lane 2	0	0	129	129	5.0	253	0.511	100	30.4	LOS C	5.0	36.7	50	Turn Bay	0.0	0.0
Approach	103	65	129	298	5.0		0.511		30.3	LOS C	6.9	50.4				
East: Murray Rd E																
Lane 1	329	175	0	504	5.0	639	0.788	100	33.6	LOS C	20.2	147.3	500	–	0.0	0.0
Lane 2	0	458	0	458	5.0	581	0.788	100	30.7	LOS C	18.9	138.0	500	–	0.0	0.0
Lane 3	0	0	2	2	5.0	245	0.009	100	29.0	LOS C	0.1	0.7	50	Turn Bay	0.0	0.0
Approach	329	633	2	964	5.0		0.788		32.2	LOS C	20.2	147.3				
North: Elizabeth St N																
Lane 1	28	359	0	387	5.0	486	0.797	100	35.7	LOS D	16.9	123.2	500	–	0.0	0.0
Lane 2	0	0	112	112	5.0	388	0.288	100	28.0	LOS C	4.4	31.8	60	Turn Bay	0.0	0.0
Approach	28	359	112	499	5.0		0.797		33.9	LOS C	16.9	123.2				
West: Murray Rd W																
Lane 1	47	368	0	415	5.0	861	0.482	100	16.4	LOS B	12.6	92.3	500	–	0.0	0.0
Lane 2	0	415	0	415	5.0	860	0.482	100	16.0	LOS B	12.8	93.4	500	–	0.0	0.0
Lane 3	0	0	133	133	5.0	240	0.552	100	28.4	LOS C	4.6	33.6	40	Turn Bay	0.0	1.7
Approach	47	782	133	962	5.0		0.552		17.9	LOS B	12.8	93.4				
Intersection				2723	5.0		0.797		27.3	LOS C	20.2	147.3				

LANE SUMMARY

Site: Elizabeth/Murray PM existing

Elizabeth St/Murray St, North Coburg
Signals - Fixed Time Cycle Time = 80 seconds

Lane Use and Performance

	Demand Flows				HV	Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	95% Back of Queue		Lane Length	SL Type	Cap. Adj.	Prob. Block.
	L	T	R	Total							Vehicles	Distance				
	veh/h	veh/h	veh/h	veh/h	%	veh/h	v/c	%	sec		veh	m	m		%	%
South: Elizabeth St S																
Lane 1	164	259	0	423	5.0	547	0.774	100	34.6	LOS C	17.6	128.2	500	–	0.0	0.0
Lane 2	0	0	315	315	5.0	376[1]	0.838	100	35.9	LOS D	12.5	91.5	50	Turn Bay	0.0	48.1
Approach	164	259	315	738	5.0		0.838		35.1	LOS D	17.6	128.2				
East: Murray Rd E																
Lane 1	117	314	0	431	5.0	521	0.827	100	37.1	LOS D	19.0	138.6	500	–	0.0	0.0
Lane 2	0	423	0	423	5.0	511	0.827	100	35.4	LOS D	18.7	136.6	500	–	0.0	0.0
Lane 3	0	0	23	23	5.0	248	0.093	100	32.3	LOS C	1.1	7.9	50	Turn Bay	0.0	0.0
Approach	117	737	23	877	5.0		0.827		36.2	LOS D	19.0	138.6				
North: Elizabeth St N																
Lane 1	22	100	0	122	5.0	153	0.800	100	46.7	LOS D	6.9	50.4	500	–	0.0	0.0
Lane 2	0	0	56	56	5.0	253	0.221	100	28.5	LOS C	2.1	15.6	60	Turn Bay	0.0	0.0
Approach	22	100	56	178	5.0		0.800		41.0	LOS D	6.9	50.4				
West: Murray Rd W																
Lane 1	71	293	0	363	5.0	816	0.445	100	18.0	LOS B	11.4	83.5	500	–	0.0	0.0
Lane 2	0	362	0	362	5.0	814	0.445	100	17.0	LOS B	11.6	84.3	500	–	0.0	0.0
Lane 3	0	0	134	134	5.0	261	0.512	100	28.5	LOS C	4.8	34.8	40	Turn Bay	0.0	2.3
Approach	71	655	134	859	5.0		0.512		19.2	LOS B	11.6	84.3				
Intersection				2652	5.0		0.838		30.7	LOS C	19.0	138.6				

LANE SUMMARY

Site: Elizabeth/Murray AM development

Elizabeth St/Murray St, North Coburg
Signals - Fixed Time Cycle Time = 90 seconds

Lane Use and Performance

	Demand Flows				HV	Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	95% Back of Queue		Lane Length	SL Type	Cap. Adj.	Prob. Block.
	L	T	R	Total							Vehicles	Distance				
	veh/h	veh/h	veh/h	veh/h	%	veh/h	v/c	%	sec		veh	m	m		%	%
South: Elizabeth St S																
Lane 1	104	105	0	209	5.0	628	0.334	100	29.2	LOS C	8.7	63.6	500	–	0.0	0.0
Lane 2	0	0	129	129	5.0	234	0.553	100	31.4	LOS C	5.2	38.0	50	Turn Bay	0.0	0.0
Approach	104	105	129	339	5.0		0.553		30.0	LOS C	8.7	63.6				
East: Murray Rd E																
Lane 1	329	173	0	503	5.0	609	0.826	100	40.3	LOS D	23.4	170.8	500	–	0.0	0.0
Lane 2	0	461	0	461	5.0	558	0.826	100	37.3	LOS D	21.9	159.6	500	–	0.0	0.0
Lane 3	0	0	4	4	5.0	205	0.021	100	35.1	LOS D	0.2	1.6	50	Turn Bay	0.0	0.0
Approach	329	634	4	967	5.0		0.826		38.8	LOS D	23.4	170.8				
North: Elizabeth St N																
Lane 1	57	452	0	508	5.0	613	0.830	100	37.9	LOS D	23.8	173.6	500	–	0.0	0.0
Lane 2	0	0	119	119	5.0	417	0.286	100	27.6	LOS C	4.8	35.0	60	Turn Bay	0.0	0.0
Approach	57	452	119	627	5.0		0.830		35.9	LOS D	23.8	173.6				
West: Murray Rd W																
Lane 1	76	357	0	433	5.0	807	0.537	100	21.1	LOS C	15.3	111.4	500	–	0.0	0.0
Lane 2	0	432	0	432	5.0	806	0.537	100	20.3	LOS C	15.4	112.4	500	–	0.0	0.0
Lane 3	0	0	140	140	5.0	208	0.673	100	33.6	LOS C	5.7	41.9	40	Turn Bay	0.0	6.1
Approach	76	789	140	1005	5.0		0.673		22.5	LOS C	15.4	112.4				
Intersection				2939	5.0		0.830		31.6	LOS C	23.8	173.6				

LANE SUMMARY

Site: Elizabeth/Murray PM development

Elizabeth St/Murray St, North Coburg
Signals - Fixed Time Cycle Time = 90 seconds

Lane Use and Performance

	Demand Flows				HV	Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	95% Back of Queue		Lane Length	SL Type	Cap. Adj.	Prob. Block.
	L	T	R	Total							Vehicles	Distance				
	veh/h	veh/h	veh/h	veh/h	%	veh/h	v/c	%	sec		veh	m	m		%	%
South: Elizabeth St S																
Lane 1	168	356	0	524	5.0	679	0.772	100	33.1	LOS C	22.4	163.4	500	–	0.0	0.0
Lane 2	0	0	315	315	5.0	372[1]	0.845	100	35.6[8]	LOS D[8]	12.8[8]	93.1[8]	50	Turn Bay	0.0	50.0
Approach	168	356	315	839	5.0		0.845		34.0	LOS C	22.4	163.4				
East: Murray Rd E																
Lane 1	117	315	0	432	5.0	504	0.858	100	44.2	LOS D	21.8	159.3	500	–	0.0	0.0
Lane 2	0	426	0	426	5.0	496	0.858	100	42.4	LOS D	21.5	157.0	500	–	0.0	0.0
Lane 3	0	0	31	31	5.0	216	0.142	100	37.3	LOS D	1.6	12.0	50	Turn Bay	0.0	0.0
Approach	117	741	31	888	5.0		0.858		43.1	LOS D	21.8	159.3				
North: Elizabeth St N																
Lane 1	44	140	0	184	5.0	225	0.817	100	50.2	LOS D	10.5	76.9	500	–	0.0	0.0
Lane 2	0	0	64	64	5.0	256	0.251	100	28.7	LOS C	2.5	18.3	60	Turn Bay	0.0	0.0
Approach	44	140	64	248	5.0		0.817		44.7	LOS D	10.5	76.9				
West: Murray Rd W																
Lane 1	97	281	0	378	5.0	748	0.506	100	23.4	LOS C	13.9	101.3	500	–	0.0	0.0
Lane 2	0	376	0	376	5.0	744	0.506	100	21.9	LOS C	14.0	101.9	500	–	0.0	0.0
Lane 3	0	0	137	137	5.0	209	0.654	100	34.4	LOS C	5.9	42.8	40	Turn Bay	0.0	6.7
Approach	97	658	137	892	5.0		0.654		24.5	LOS C	14.0	101.9				
Intersection				2867	5.0		0.858		34.8	LOS C	22.4	163.4				

Appendix 5 Potential Bus Re-routing Correspondence
(Department of Transport and GTA Consultants)

From: Alan.Ripper@transport.vic.gov.au [mailto:Alan.Ripper@transport.vic.gov.au]
Sent: 11 August 2009 3:06 PM
To: Nathan Moresi
Subject: Re: Kodak Site, Coburg - DoT Bus Requirements

11 August 2009

Mr Nathan Moresi
Associate
G T A Consultants
Melbourne Vic 3000

Dear Nathan

Re: Former Kodak Site, Coburg - DoT Bus Requirements

I refer to our previous conversation regarding operating a bus service in the proposed redevelopment area.

As discussed, to divert the current route 526 service into the development would require that the streets be constructed with more width than what is shown on the Indicative Staging Plan.

However the Deparment is satisfied that the current bus route, which travels along Elizabeth Street and turns into Boyne Street, would capture the "400 metre walking distance" from any where in the estate for customers to access the bus. If further stages are developed west of the S P Ausnet transmission lines, the route 525 bus in Newlands Road will also address this requirement.

Regards

ALAN RIPPER
Regional Officer - Metro North
Bus & Regional Services
Department of Transport
Level 13 - Southern Cross SX1
121 Exhibition Street
PO Box 2797
MELBOURNE Vic 3001

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