STAGE 1 - JETTY ROAD DEVELOPMENT PLAN, DRYSDALE

ROAD NETWORK AND TRAFFIC MANAGEMENT PLAN

PREPARED FOR

TGM GROUP

PREPARED BY

TraffixGroup

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1. INTRODUCTION

Traffix Group has been engaged by TGM Group on behalf of Land Owners Group to prepare a Road Network and Traffic Management Plan for Stage 1 of the Jetty Road Development, Drysdale. The Land Owners Group comprises Algo Properties, Swan Bay Nominees and DNA/Eureka.

The proposed Schedule 20 of the Development Plan Overlay in the Greater Geelong Planning Scheme requires the preparation of a single Development Plan for Stage 1 of the Jetty Road Growth Area. This plan must generally accord with the Jetty Road Urban Growth Plan (26th June 2007, Amended 23rd September, 2008). Schedule 20 also requires, amongst other things, the preparation of a Road Network and Traffic Management Plan for Stage 1 of the Jetty Road Growth Area.

The Jetty Road Growth Area is generally bounded by Jetty Road and Griggs Creek to east, McDermott Road to the west, Port Phillip Bay to the north and Geelong-Portarlington Road to the south. Stage 1 is the section of this area located north of the Bellarine Rail Trail and to the west of an alignment that runs along the eastern boundary Curlewys Golf Club.

This report responds to the general requirements of the Road Network and Traffic Management Plan for Stage 1.

2. SCOPE OF WORK

The scope of this project relates to the preparation of Road Network and Traffic Management Plan for Stage 1 of the Jetty Road Development Plan, Drysdale as required under the proposed Schedule 20 of the Development Plan Overlay in the Greater Geelong Planning Scheme.

The tasks undertaken include:

- site inspections,
- traffic engineering review of concept plans and provision of advice to the same,
- advice on road cross-sections, traffic management and intersection arrangements,
- assessment of traffic generation for the proposed road network, and assessment of the traffic impacts on the surrounding road network,
- traffic engineering advice on intersection arrangements for the main road connections for the proposed subdivision, and advice on external upgrade requirements, if applicable,
- discussions and meetings with Client, Council officers and other consultants, and

3. REFERENCE DOCUMENTS

The following documents have been considered as part this project:

- Relevant sections of the Greater Geelong Planning Scheme,
- Jetty Road Urban Growth Plan (UGP), Greater Geelong City Council, adopted 26th June 2007 (Amended 23rd September, 2008),
4. BACKGROUND

4.1. SITE LOCALITY

The Jetty Road Growth Area (UGA) is approximately 310 hectares in size, and is located west of Jetty Road, covering areas of Clifton Springs/Ourlewis and Drysdale. The area is located approximately 17 km east of the Geelong CBD.

The UGA is generally bounded by Jetty Road and Griggs Creek to the east, McDermott Road to the west, Port Phillip Bay to the north and Geelong-Portarlington Road to the south. The subject land is currently vacant land used for agricultural purposes and contains various farm buildings.

The Jetty Road Growth Area is expected to accommodate a large proportion of the population growth forecast for the Bellarine Peninsula. The growth area is expected to contain approximately 3,300 dwellings when fully developed, with a population in excess of 8,000 people.

Jetty Road Urban Growth Plan (adopted 26 June 2007, Amended 23 September 2008) sets out the strategic direction and provides the urban framework for the development of land in the Jetty Road Growth Area. A copy of Map 4 of the plan is provided at Appendix A.

Stage 1 is the section of the growth area located north of the Bellarine Rail Trail and to the west of an alignment that runs along the eastern boundary Ourlewis Golf Club. The Stage 1 area comprises 153 hectares of land, and is expected to accommodate over 2,000 lots and a centrally located Neighbourhood Activity Centre (NAC).

The NAC is expected to include:

- A supermarket – 2,500-3,500m² floor area,
- Specialty shops – 2,500-3,500m² floor area,
- Total Retail – 6,000m² floor area
- Non-retail commercial – 500-1,000m² floor area,
- Neighbourhood house – 500m² floor area,
- Childcare/kindergarten – 1,000m² site area, and
- A Hilltop park – 2ha site area.

The NAC will be developed as a street-based activity centre organised around a north-south and east-west ‘Main Street’.

A locality plan for the Jetty Road Growth Area is provided below, with an indicative Lot Layout Plan for Stage 1 presented at Appendix B.
4.2. SCHEDULE 20 OF DEVELOPMENT PLAN OVERLAY

The proposed Schedule 20 of the Development Plan Overlay in the Greater Geelong Planning Scheme requires the preparation of a single Development Plan for Stage 1. This plan must generally accord with Jetty Road Urban Growth Plan, 26th June 2007 (Amended 23rd September, 2008).

Schedule 20 also requires, amongst other things, the preparation of a Road Network and Traffic Management Plan for Stage 1. The requirements of this plan are specified in the draft DPO as follows:

A Road Network and Traffic Management Plan that complies with VicRoads requirements and must include:

- An internal road network that provides a high level of access within the development for all vehicular and non-vehicular traffic, which responds to the topography of the land and provides opportunities for and encourages the use of public transport.
- A hierarchy of primary, secondary and local access roads.
- A primary road network providing direct access to the Neighbourhood Activity Centre from Geelong-Portarlington Road and from Wyndham Street.
- Provision for an east-west road link between Jetty Road and the growth area in the vicinity of the Clifton Springs Primary School.
- An extension of Bay Shore Avenue crossing Griggs Creek.
- Vehicle crossings of the Essarine Rail Trail only at Jetty Road and the primary north-south entry road, and including road reserves that allow for future grade separation of the road and rail reserve.
- Major traffic control items for key intersections.
- Traffic management controls for the internal road network and provision for future bus routes.
- A road traffic safety audit and traffic study that assigns a traffic volume range to each road commensurate with its position in the road hierarchy.
- Measures to ensure local roads do not exceed the traffic volume range commensurate with their position in the road hierarchy (with particular regard to Bay Shore Avenue and Corlyule Road).
- Engineering cross-sections for all road types.

The DPO for Stage 1 is being introduced under Amendment C152 of the Greater Geelong Planning Scheme. A Panel Report (dated August, 2009) has been released for Amendment C152 and the land has subsequently been rezoned to Residential 1 Zone.

Relevant considerations to the preparation of the Road Network and Traffic Management Plan for Stage 1 are set out in the Panel’s findings as follows:

- In order to determine the life of the temporary east-west road, Council give consideration to the adoption of more performance oriented criteria related to the operation of the junction of its intersection with Jetty Road rather than the development of an arbitrary number of lots.
- Council exert all reasonable efforts to achieve a northern location through the Department of Education and Early Childhood Development for the ‘permanent’ East West Road Connection.
- For the North-South Road, the difference in the acquisition and construction costs between that for a local road and that for a ‘connector’ road should be included in the list of infrastructure items in the Section 173 agreement.
4.3. KEY ROADS

4.3.1. Arterial Road Network

The surrounding area is served by a number of key arterial roads, including:

- **Geelong-Portarlington Road**

  Geelong-Portarlington Road is a VicRoads declared ‘Main Road’ and provides the primary connection between Drysdale and the subject land. It generally runs between Portarlington and the city of Geelong through Drysdale. Jetty Road intersects Geelong-Portarlington Road at a roundabout. This intersection is proposed to be ultimately signalised by VicRoads.

  Geelong-Portarlington Road is a divided road within a road reservation of approximately 45m. It provides two traffic lanes in each direction separated by an approximately 12m wide median. The posted speed limit is 100km/h.

- **Jetty Road**

  Jetty Road currently functions as a significant Collector Road for the Clifton Springs/Drysdale area. Jetty Road is expected to ultimately function as a Council Arterial Road.

  Jetty Road is aligned in a north-south direction between the Geelong-Portarlington Road in the south and Bay Shore Avenue in the north.

  Jetty Road, south of Clifton Springs Primary School, is configured with a 6m wide pavement and 1.5m wide sealed shoulders, accommodating a single traffic lane in each direction.

  North of Clifton Springs Primary School to Bay Shore Avenue, Jetty Road is fully constructed with a 10.2m wide pavement accommodating a 3.0m wide traffic lane and a 2.1m wide parking lane in each direction. A footpath is provided on one side (alternating).

  The posted speed limit is 60km/h, with a 40km/h time-based School Speed Zone in the vicinity of Clifton Springs Primary School.

4.3.2. Local Street Network

The key local streets in the surrounding area are as follows:

- **Wyndham Street**

  Wyndham Street extends between Jetty Road in the west and a roundabout with Palmerston Street within the Drysdale Town Centre to the east. Wyndham Street is expected to ultimately function as a Collector Road.

  Wyndham Street is generally configured with a 6m wide pavement with unsealed shoulders, within a road reservation of approximately 30m. Approaching Drysdale, Wyndham Street is fully constructed with an approximately 8m to 10m wide pavement providing one traffic lane and a parking lane in each direction. The posted speed limit is 60km/h.
Bay Shore Avenue

Bay Shore Avenue extends in an east-west direction from a dead end at Griggs Creek in the west to Clifton Springs Road in the east. The UGA includes a local road connection at this point crossing Griggs Creek.

West of Jetty Road, Bay Shore Avenue is a local street with a pavement width of approximately 7.3m and a road reserve of approximately 20m. No footpaths are provided. The default urban speed limit of 50km/h applies to Bay Shore Avenue west of Jetty Road.

East of Jetty Road, Bay Shore Avenue functions as a Collector Road with a divided carriageway. The cross-section includes a 12m wide median, separating an approximately 3.5m wide traffic lane and 3.0m wide parking lane in each direction. The posted speed limit of 60km/h applies to Bay Shore Avenue, east of Jetty Road.

Coriyule Road

Coriyule Road is a local rural road aligned in an east-west direction spanning between Jetty Road in the east and Hermsley Road in the west. Coriyule Road is a gravel road with a formed width of approximately 7.6m and a road reservation of approximately 20m.

McDermott Road

McDermott Road is a local rural road aligned in a north-south direction between Coriyule Road in the south terminating near Port Phillip Bay in the north. McDermott Road is a gravel road with a formed width of approximately 6 to 8m and a road reservation of approximately 20m.

The northern section of approximately 500m in length is an unformed track, meandering within the road reserve leading to the cliff top area.

McDermott Road forms part of the western boundary of the UGA and will be retained as a rural road with limited access to the rural areas to the west. McDermott Road will not be used to provide access to the Jetty Road Growth Area once the final stage of development of the growth area is complete.

Photographs of the surrounding road network are provided below in Figure 2 to Figure 16.

Figure 2: Geelong-Portarlington Road – view east of eastbound carriageway

Figure 3: Geelong-Portarlington Road – view east of westbound carriageway
Figure 4: Jetty Road – view south from Clifton Springs Primary School

Figure 5: Jetty Road – view south from Coriyule Road

Figure 6: Bay Shore Avenue – view west from Jetty Road

Figure 7: Bay Shore Avenue – view west from 50m west of Jetty Road

Figure 8: Bay Shore Avenue – view west from mid-block location

Figure 9: Bay Shore Avenue – view west from Kewarra Drive to growth area land
Figure 10: Wyndham Street – view east from Jetty Road

Figure 11: Wyndham Street – view west from between Carolanne Drive and Barrands Lane

Figure 12: Wyndham Street – view east, 30m east of Jetty Road

Figure 13: Coriyule Road – view west between Jetty Road and McDermott Road

Figure 14: Coriyule Road – sight distance north into Jetty Road

Figure 15: Coriyule Road – sight distance south into Jetty Road
5. TRAFFIC ENGINEERING REVIEW

5.1. FUNCTIONAL ROAD HIERARCHY PLAN

The Road Network and Traffic Management Plan refers to the development of a "hierarchy of primary, secondary and local access roads".

A functional road hierarchy describes how roads operate, and are managed day to day. In the context of the Jetty Road Growth Area, the basic classification of roads ranges from local streets, which principally provide an access function, to primary arterial roads, which principally provide for through traffic movements.

For the purposes of developing a Functional Road Hierarchy for the Jetty Road Growth Area, the following road classifications have been adopted:

**ARTERIAL ROADS**

**Primary Arterial Roads**

Primary Arterial Road generally relates to a 'main road' under the management of VicRoads, which is of regional significance, such as Geelong-Portarlington Road (Drysdale Road) and Drysdale-Ocean Grove Road (Grubb Road).

The main function of these roads is to form the principal road network. Primary Arterial Roads cater for through traffic movements.

VicRoads will continue to manage Geelong-Portarlington Road and Drysdale-Ocean Grove Road (Grubb Road) and accordingly, will need to approve any intersection arrangements associated with these roads. Similarly, any upgrade works at the intersection of Geelong-Portarlington Road/Drysdale-Ocean Grove Road/Jetty Road would be undertaken by VicRoads.

The existing traffic volumes on the Geelong-Portarlington Road (4 lane divided road) are approximately 15-18,000 vehicles per day, abutting the Jetty Road Growth Area.
Secondary Arterial Roads

Secondary Arterial Roads are typically arterial roads managed by Council, which supplement the primary arterial road network. The main function of these roads is to cater for through traffic movements, to an individually determined limit that is sensitive to the roadway characteristics and abutting land uses.

In the case of the Jetty Road Growth Area, all internal roads within the development plan area will be managed by Council. The north-south and east-west ‘primary’ internal road referred to in the DPO as the ‘primary road’ will be classified as Secondary Arterial Roads, managed by Council.

A key function of this route is to provide direct access to the NAC from Geelong-Portarlington Road and from Wyndham Street and provide access to the growth area. The alignment of this road through the NAC has been designed to discourage through traffic movements between Geelong-Portarlington Road and Wyndham Street.

Having reviewed a range of possible alignment options, Traffix Group is of the view that the alignment presented in the Masterplan prepared for the NAC by David Lock Associates (dated February 2011) represents the most suitable arrangement. This arrangement minimises the number of major traffic control items (traffic signals, roundabouts), discourages the through movement of vehicles between Wyndham Street and Geelong Portarlington Road and avoids the situation of having an ‘arterial road’ with a series of potentially substandard tight bends.

Similarly, Jetty Road is expected to ultimately function as a Secondary Arterial Road when the area is fully developed. Jetty Road currently functions as a significant Collector Road for the Clifton Springs/Drysdale area.

LOCAL ROADS

Collector Roads (or Connector Streets)

Collector Roads (or Connector Streets) are those non-arterial roads, which distribute traffic between the arterial road network and the local street system, and provide access to abutting property. To some extent, these roads may provide a local connection between Arterial Roads.

Within the Jetty Road Growth Area, the ‘secondary loop road’ referred to within the Jetty Road UGP is expected to function as a Connector Street - Level 2. Connector Streets will also serve as ring-roads around the NAC.

Wyndham Street, which extends between Jetty Road and the roundabout with Palmerston Street within the Drysdale Town Centre, is also expected to ultimately function as a Connector Street - Level 2.

As identified in this report, it may be appropriate to apply a Connector Street - Level 1 classification to the non-arterial east-wes: connections to Jetty Road. These include the first section of road link at Coriyule Road and any ultimate road link between Wyndham Street and Bay Shore Avenue.

These connections are necessary to supplement the east-west ‘primary arterial road’ connection to Jetty Road and provide access to other local streets in the growth area. Accordingly, these street are expected to carry traffic volumes at the at the higher end of the acceptable range for a higher order Access Street (i.e. 2,000-3,000 vehicles per day for an Access Street - Level 2). As these streets would not form part of a public bus route, a minimum pavement width of 8.4m would be sufficient, depending of the requirement for parking and/or bicycles.

Local Streets

Local Streets are roads whose function is to provide access to properties and/or other local streets.
The remaining roads within the Jetty Road Growth Area are expected to be classified as 'Access Streets' (Level 1 and 2) or 'Access Places'.

The Recommended Functional Road Hierarchy is shown in Figure 17 which has been overlaid on an indicative Lot Layout Plan.

The information presented by a number of traffic engineering consultants for various parties to the planning panel for Amendment C129 included a range of predicted traffic volumes for key roads within and surrounding the Jetty Road Growth Area. This information provides relatively robust estimates for the expected traffic levels on the key links and roads surrounding the growth area. This range of traffic volume estimates is presented in the table below.

Table 1: Range of Traffic Volume Predictions (source: traffic evidence, Amendment C129 Panel Hearing)

<table>
<thead>
<tr>
<th>Road</th>
<th>Future Traffic Volume (veh/day)</th>
<th>Recommended Classification based on Clause 56 and current practice</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jetty Road (at Geelong-Portarlington Road)</td>
<td>11-13,000</td>
<td>Secondary Arterial Road</td>
</tr>
<tr>
<td>'Primary Road' (at Geelong-Portarlington Road)</td>
<td>11-15,000</td>
<td>Secondary Arterial Road</td>
</tr>
<tr>
<td>'Primary Road' (at Jetty Road i.e. Wyndham St connection)</td>
<td>5-9,000 (1)</td>
<td>Secondary Arterial Road</td>
</tr>
<tr>
<td>'Primary Road' (at NAC – Main Street)</td>
<td>9-10,000 (2)</td>
<td>Secondary Arterial Road</td>
</tr>
<tr>
<td>Wyndham Street (east of Jetty Road)</td>
<td>8,500 (3)</td>
<td>Connector Street - Level 2</td>
</tr>
<tr>
<td>'Secondary Loop Road'</td>
<td>3-5,000</td>
<td>Connector Street - Level 2</td>
</tr>
<tr>
<td>Other internal roads, including Bay Shore Avenue</td>
<td>&lt; 3,000</td>
<td>Access Streets</td>
</tr>
</tbody>
</table>

Note:

(1) This volume may be reduced from the upper level with the additional Jetty Road connection at the Primary School. The estimated volume in this section varied significantly between the expert reports due to distribution assumptions.

(2) The current Masterplan concept for the NAC (David Lock Associates, February 2011) reduces the potential volumes using the Main Streets by the provision of ring-roads around the NAC to access the centre’s parking and cater for local through movements to and from the northern residential catchment at peak times.

(3) The predicted volume on Wyndham Street is above the desirable maximum volume of 7,000 vehicles per day for a Connector Street – Level 2.
Figure 17. Recommended Functional Road Hierarchy
5.2. PUBLIC TRANSPORT PROVISION

Clause 56.06-3 (Public transport network objectives) requires the development of "an arterial road and neighbourhood street network that supports a direct, efficient and safe public transport system" and one which encourages "maximum use of public transport".

The general requirements of Standard C16 are for a public transport network that is designed to:

- Implement any relevant public transport strategy, plan or policy for the area set out in this scheme.
- Connect new public transport routes to existing and proposed routes to the satisfaction of the relevant public transport authority.
- Provide for public transport links between activity centres and other locations that attract people using the Principal Public Transport Network in Metropolitan Melbourne and the regional public transport network outside Metropolitan Melbourne.
- Locate regional bus routes principally on arterial roads and locate local bus services principally on connector streets to provide:
  - Safe and direct movement between activity centres without complicated turning manoeuvres.
  - Direct travel between neighbourhoods and neighbourhood activity centres.
  - A short and safe walk to a public transport stop from most dwellings.

The development land is located within an outer-suburban growth area and as a result, public transport services are currently limited. Consequently, the local population is more dependent on private cars as a mode of transport when compared to metropolitan areas.

5.2.1. Existing Public Transport Services

The existing public transport services available to this area include:

Bus Services:

- **St Leonards - Geelong (Route 79)**
This service departs from the St Leonards Hotel near Murradoc Road to Geelong Railway Station, via Portarlington Shopping Centre, Drysdale Shopping Centre and Geelong Hospital.

- **Drysdales - Clifton Springs (Route 78) – deviation from Route 79**
Occasional trips from the 79 Bus Route operate as per route described above to Drysdale and extend via Clifton Springs Road, Carolanne Drive, Wyndham Street, Jetty Road, Bay Shore Avenue, Beacon Point Road, Coolangatta Drive, Beacon Point Road, Clifton Springs Road and High Street to resume regular route to Drysdale Shopping Centre and Geelong.

Bus Route 79 operates 7 days a week and also on Public Holidays (limited services provided on Sundays and Public Holidays). The Bus Route 78 deviation operates Monday-Saturday at selected times throughout the day.

- **Drysdales - Queenscliff via Ocean Grove (Cross Peninsula Service - Route 81)** – This bus service operates from St Leonards to Clifton Springs, Drysdale, Ocean Grove, Point Lonsdale and Queenscliff. This service operates Monday to Saturday.
The figure below shows the bus deviation route through the local road network.

- **Drysdale Railway Station** is located near Geelong-Portarlington Road to the east of the Jetty Road Growth Area. Bellarine Peninsula Railway operates a rail service between Drysdale Railway Station and Queenscliff Railway Station. This service is a tourist facility and primarily operates on weekenches and public holidays only.

- The nearest commuter train services are provided in Geelong City.

There is an existing rail reservation along the 'Bellarine Rail Trail' extending from Geelong to Drysdale Railway Stations. The Bellarine Rail Trail provides a shared pedestrian and cycling link from Geelong to Queenscliff. The UGF and DPO for Stage 1 prohibits development or infrastructure within this reserve which would jeopardise or limit the future use of the rail reserve for heavy rail or light rail.

The Public Transport Division of the DOT is a referral authority for this application under Clause 52.36 of the Planning Scheme as the land proposes the development of 60 or more dwellings. The plan needs to have regard to the requirements of the Public Transport: Guidelines for Land Use and Development, which set out particular requirements for the provision of public transport services within new developments as well as road cross-section requirements along public transport routes within subdivisions.

This consideration relates to any roads that will form part of a public bus route and is particularly relevant where on-road cycling facilities (marked bicycle lanes) are desired.

The figure below shows the roads that are expected to accommodate a public transport route. The service would include centrally located bus stops in the NAC.

This service is likely to be an extension of the existing Clifton Springs/Drysdale local routes and are likely to require changes to the existing route to ensure an efficient service is provided (e.g. possibly a reversal of the direction of the existing route). This issue needs to be explored in consultation with the DOT and bus operator.
5.3. EAST-WEST CONNECTIONS TO JETTY ROAD

The UGP provides for the following road connections to Jetty Road:

- Wyndham Street extension,
- Immediately south of Griggs Creek (as discussed further in Section 5.3.2),
- at Coriyule Road, and
- location between Coriyule Road and Portarlington Road.

The Wyndham Street extension is a Secondary Arterial Road, which will have signalised access at Jetty Road.

The balance of the east-west connections will be Connector Streets (Level 1) or Access Streets (Level 2). These roads are expected to carry between 2-3,000 vehicles per day.

No direct property access will be permitted to the arterial roads and service roads should be accessed internal to the development land. This is achieved by the proposed Development Plan, with no direct service road access to arterial roads.

5.3.1. Coriyule Road

The Jetty Road Infrastructure Plan indicates that access to Coriyule Road at Jetty Road will be "restricted" by Council once a development trigger has been reached so as to avoid the through use of Coriyule Road between Jetty Road and the north-south 'primary road'.

This has been achieved in the proposed Development Plan shown below.

This arrangement maintains the straight alignment of Coriyule Road that may be necessary in the early stages and truncates this road as full closure for vehicular traffic in the middle at the future stage, when the balance of the road network to provide sufficient access to the lots is in place. Pedestrian/bicycle access through the closure will be maintained.