



**Cross' Road Residential Precinct Development Plan,
Traralgon
31 August 2012**

Prepared by CPG with SMEC on behalf of land owners for approval by Latrobe
City Council

CPG

This report has been prepared from the office of CPG

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1 Introduction

The Development Plan (Plan) has been prepared in accordance with the requirements of Schedule 5 to the Development Plan Overlay (DPO) in the Latrobe Planning Scheme.

The Plan covers 75.96 hectares of land identified in Figure 1, affected by the DPO located on the north-east corner of Cross' Road and Tyers Road, Traralgon. The land is bounded by Tyers Road to the west, Cross' Road to the south, the Riverslea Estate residential subdivision to the east and Latrobe River floodplain to the north.

The Plan covers fifteen properties including land at 150 Tyers Road, 240 Cross' Road and thirteen properties in Ashworth Drive.

Figure 1: Plan Area



Source: <http://services.land.vic.gov.au/maps/interactive.jsp>, accessed 17 November 2011

1.1 Basis for the Development Plan

150 Tyers Road and 240 Cross' Road total 47ha and were rezoned from Farming Zone to Residential 1 Zone as part of Amendment C56 to the Latrobe Planning Scheme on 5 May 2011. The rezoning provides residential land required to meet demand and implement the objectives of the *Traralgon Structure Plan*.



The thirteen properties in Ashworth Drive total 29.4ha and were not rezoned and remain Rural Living Zone Schedule 3. Amendment C56 applied the DPO to all land in Figure 1.

1.2 The Role of the Development Plan

The Plan has been prepared by consultants CPG and SMEC on behalf of the land owners of 240 Cross' Road and 150 Tyers Road which comprise 61% of the Plan area. It seeks to provide an integrated vision for co-ordinated development of all properties affected by the DPO.

Properties in Ashworth Drive require rezoning (Rural Living Zone Schedule 3 to Residential 1 Zone) before residential subdivision can occur. Nonetheless the Plan sets a framework for staged development which ensures future connections and servicing requirements can be delivered in a flexible and fair manner for all properties if land owners choose to develop.

The Plan has been prepared in consultation with Latrobe City Council, Gippsland Water, West Gippsland Catchment Management Authority, VicRoads, DSE, EPA, SP AusNet and CFA. It addresses land use and subdivision, waterways, infrastructure services, open space, community hubs and meeting places, flora and fauna and cultural heritage.



2 Site analysis

2.1 Site context

The subject site is located on the north west edge of the Traralgon township as shown in Figure 2. Urban development in this location is contained by Tyers Road which forms the logical western township boundary and a transition to farming land. The Latrobe River floodplain which adjoins the northern boundary of the site limits urban development to the north.

Standard residential subdivision has developed south of Cross' Road and east of the site in the Riverslea Estate.

The site is in proximity to a range of services and facilities listed below:

Commercial /Business Facilities

Traralgon Central Activity Centre 3.8 kilometres south east

Education

St Gabriels Primary RC Primary 1.0 kilometre south

St Pauls Anglican Primary School 1.4 kilometres east

Traralgon Secondary College (West Campus) 1.5 kilometres south east

ABC Traralgon West, Child Care Centre 2.0 kilometres south east

Lavalla RC Secondary and Primary School 2.4 kilometres south east

Health

Traralgon Medical Centre 3.4 kilometres south east

Hillcrest Family Medicine 3.6 kilometres south east

Transport

Traralgon Bus Services (Route 1, Rangeview) 1.2 kilometres south east

Traralgon Railway Station 3.4 kilometres south east

Princes Highway 3.8 kilometres south east

Recreation

Traralgon West Sports Complex 1.7 kilometres south east

Traralgon Golf Club 2.5 kilometres south

Traralgon Showgrounds 4.1 kilometres south east

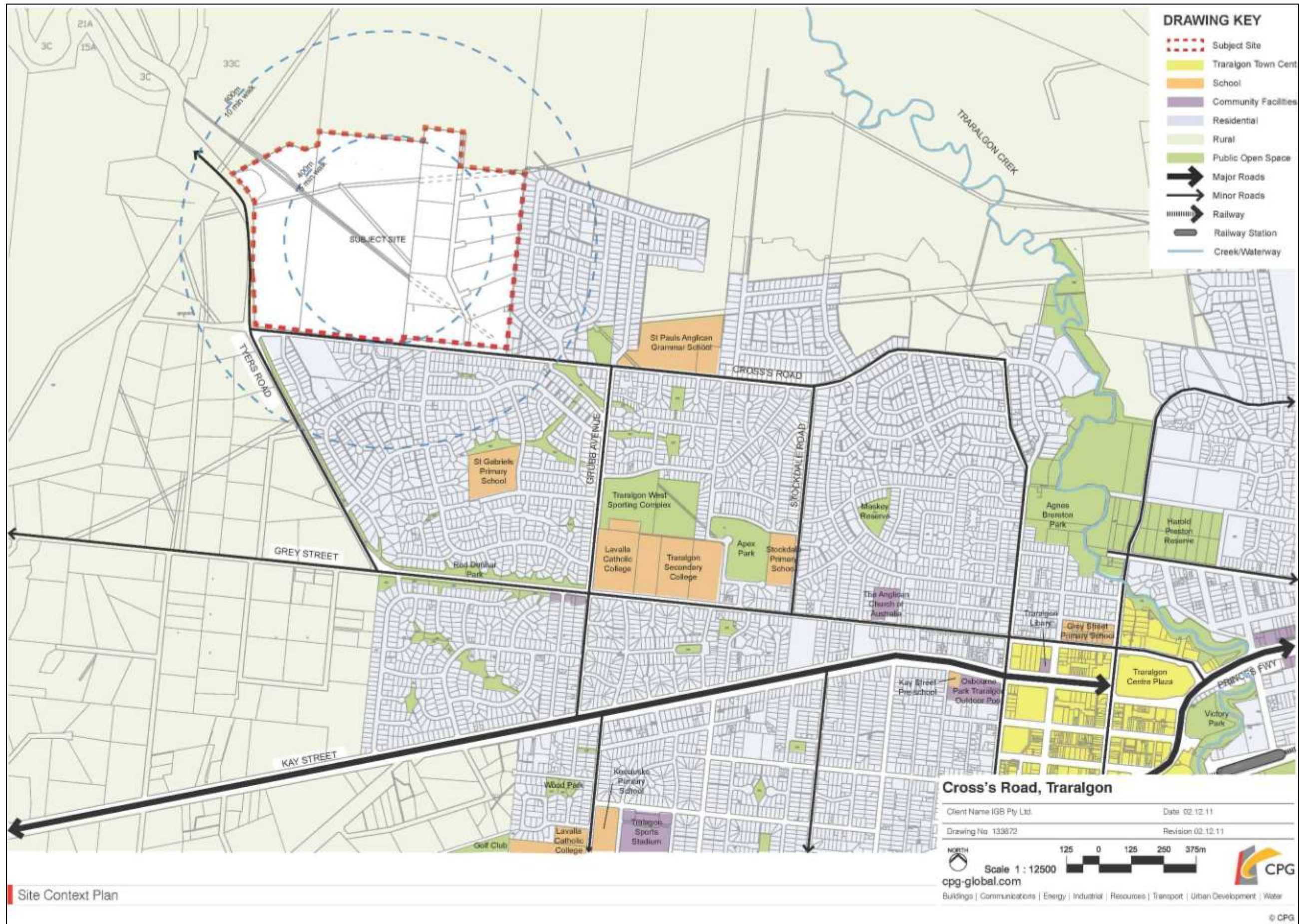
Traralgon Racecourse (Glenview Park) 5.6 kilometres southeast

Natural Environment

Wade Creek 1.0 kilometre east

Latrobe River 1.3 kilometres north

Figure 2: Site Context



2.2 Site description

The subject site consists of two adjoining farming properties and a large lot rural residential subdivision containing thirteen properties in Ashworth Drive. A site analysis plan is provided in Figure 3.

150 Tyers Road ('Yurragar') is located on the corner of Cross' Road and Tyers Road. The property is 15.2ha and is currently used for grazing purposes.

240 Cross' Road ('View Hill') adjoins the eastern boundary of 150 Tyers Road. The property is 31.4ha and is currently used as a dairying farm. The dairy grazes cattle on land in Lot 2 on Plan of Subdivision 424148C which adjoins the northern boundary of the property and extends across the floodplain. The dairy will continue to operate from the existing buildings on the northern part of the property.

Six properties in Ashworth Drive share a common boundary with 240 Cross' Road. On the east side of Ashworth Drive seven properties share a common boundary with standard residential lots in the Riverslea Estate which are approximately 1,000m² in size. The Ashworth Drive properties are rural residential or bush blocks and generally contain a dwelling and outbuildings although some are vacant.

The landform in the subject area has the following topographical features:

- Two designated waterways enter the site at Cross' Road passing through the site before intersecting in the north east corner. One waterway passes through 240 Cross' Road before entering 45 and 55 Ashworth Drive and leaving the site through 60 Ashworth Drive. The second passes through the rear of properties on the east side of Ashworth Drive. The waterways merge on 60 Ashworth Drive.
- A minor waterway enters the site at Cross' Road at the boundary of 150 Tyers Road and 240 Cross' Road and flows north east to meet the western designated waterway in Ashworth Drive.
- A ridgeline extends across the northern boundary of the site. Land south of the ridge slopes gently whilst land north of the ridge slopes steeply away into the Latrobe River floodplain approximately 20m below. Good views are available across the floodplain from the ridgeline.
- A local highpoint is situated immediately south of Cross' Road on a spur between the designated waterways.
- With the exception of land north of the ridgeline the majority of the site slopes gently toward waterways at between 2-8%.

The western designated waterway that enters 240 Cross' Road drains stormwater, and at times, sand filter discharge from the adjoining residential development. Prior to the construction of the adjoining residential development,



the waterway was an open ephemeral drain. At that time the primary source of input was from Stoddarts Abattoir upstream. The waterway was piped under Cross' Road approximately 40 years ago. The waterway has been cleaned out several times in an effort to confine the discharge however, this maintenance ceased 15 years ago. Rainfall in recent years in conjunction with pugging from livestock has left the area immediately north of the piped section prone to flooding.

150 Tyers Road and 240 Cross' Road have been almost entirely cleared of remnant vegetation during historic agricultural use on the land. The exception is a patch of remnant native vegetation in the riparian zone (EVC 53 Swamp Scrub) of the lower reaches of the western waterway, and two remnant River Red Gums in the southern paddock of 240 Cross' Road adjacent to the waterway.

Several plantations have been planted along boundaries, intermediate fence lines and driveways on properties across the site. Scattered native and exotic vegetation has also been planted on several properties typically around buildings.

Access to the site from the adjoining road network is currently from Ashworth Drive which is a public road, and via private driveways to 150 Tyers Road and 240 Cross' Road from Tyers Road and Cross' Road respectively.

A Gippsland Water water treatment plant is located on a 1.7ha property at 110 Cross' Road in the south east corner of the site. A raw water main supplying drinking water to the township of Tyers extends from the treatment plant and traverses the site diagonally to the north east corner. The pipeline is located within a water supply easement (future reserve) that varies in width from 10m and 17m wide across the site.

A Gippsland Water rising sewer main is located across the front of the site in the Cross' Road reserve. Gippsland Water requires land to be set aside for the future duplication of the existing rising sewer main which requires a 6.8m wide strip of land across the front of 150 Tyers Road and 240 Cross' Road.

A 66KV electricity line traverses the northern part of the site. It is located within a 12.8m wide electricity transmission easement. A second electricity transmission easement also affects the site and SPAusNet, the relevant authority, has advised this easement is redundant and can be removed.

A major gas pipeline passes close to the north west corner of the Plan area. The Latrobe Planning Scheme shows Schedule 1 to the Design and Development Overlay applied to a 200m wide strip of land along the route of the pipeline. This Overlay extends approximately 55m into the north west corner of the Plan area.

Figure 3: Site Analysis



3 Key opportunities and constraints

The subject site features opportunities and constraints that have influenced the design response underpinning the Plan. The key opportunities and constraints are summarised below:

3.1 Opportunities

- Provide a well designed urban expansion that responds to the features of the site and surrounds.
- Provide certainty of development potential for properties encumbered by easements.
- Incorporate easements into the open space network where possible.
- Provide an open space network using drainage lines, easements and local parks.
- Provide a sewerage connection to the site.
- Integrate stormwater management and existing hydraulic and ecological features into the proposed urban environment.
- Deliver a holistic drainage strategy for the site which enhances the condition of downstream properties.
- Provide a permeable and legible movement network throughout the site.
- Provide functional east west connections across the site.
- Provide a limited number of access points onto Cross' Road.
- Use views from the ridgeline across the Latrobe River floodplain.
- Provide a mix of lot sizes on the site.
- Provide larger lots north of the ridgeline on constrained land where the escarpment and slope should be protected and reticulated sewerage is not feasible to deliver.
- Maximise lots which address Cross' Road.
- Preserve existing buildings and the amenity of land owners in Ashworth Drive.
- Set a framework for possible future development of properties in Ashworth Drive.
- Remove the redundant electricity easement.
- Provide an urban layout that enables lots to address Tyers Road (where direct street access from private lots is not allowed).

3.2 Constraints

- Fragmented land holdings in Ashworth Drive.
- Intersection access and direct access to Tyers Road from private lots is not permitted by VicRoads.
- Diagonal alignment of the water main easement (future reserve) traversing the site and inability to construct driveway access to private lots across the water main easement.



- Provision of a 6.8m wide strip of land along Cross' Road to accommodate duplication of the existing rising sewer main.
- Electricity easement containing a 66KV power line traversing the northern part of the site.
- Absence of an existing reticulated sewer connection to the site.
- Unsuitability of steeply sloping land on the escarpment for traditional subdivision.
- Inability to provide a gravity fed sewer connection to lots north of the ridge.
- Boggy land prone to flooding immediately north of the piped drainage outfall on 240 Cross' Road.
- Upstream drainage catchments are not retarded or treated before entering the site.
- Protection of potential habitat for Growling Grass Frogs in the dam on 240 Cross' Road.
- Retention of remnant River Red Gums.
- Arbitrary 30 metre buffer distances from designated waterways.
- The location of a designated waterway midway through properties on the east side of Ashworth Drive.
- Water reserve adjoining the site which runs parallel to Cross' Road and restricts direct access to Cross' Road from potential private lots developed on 124 Cross' Road.
- Schedule 1 to the Design and Development Overlay affecting the north west corner of the Plan area

4 The Plan

4.1 Design response

The design response in Figure 4 demonstrates how the opportunities and constraints of the site inform and influence the design of the new community. This is explained below:

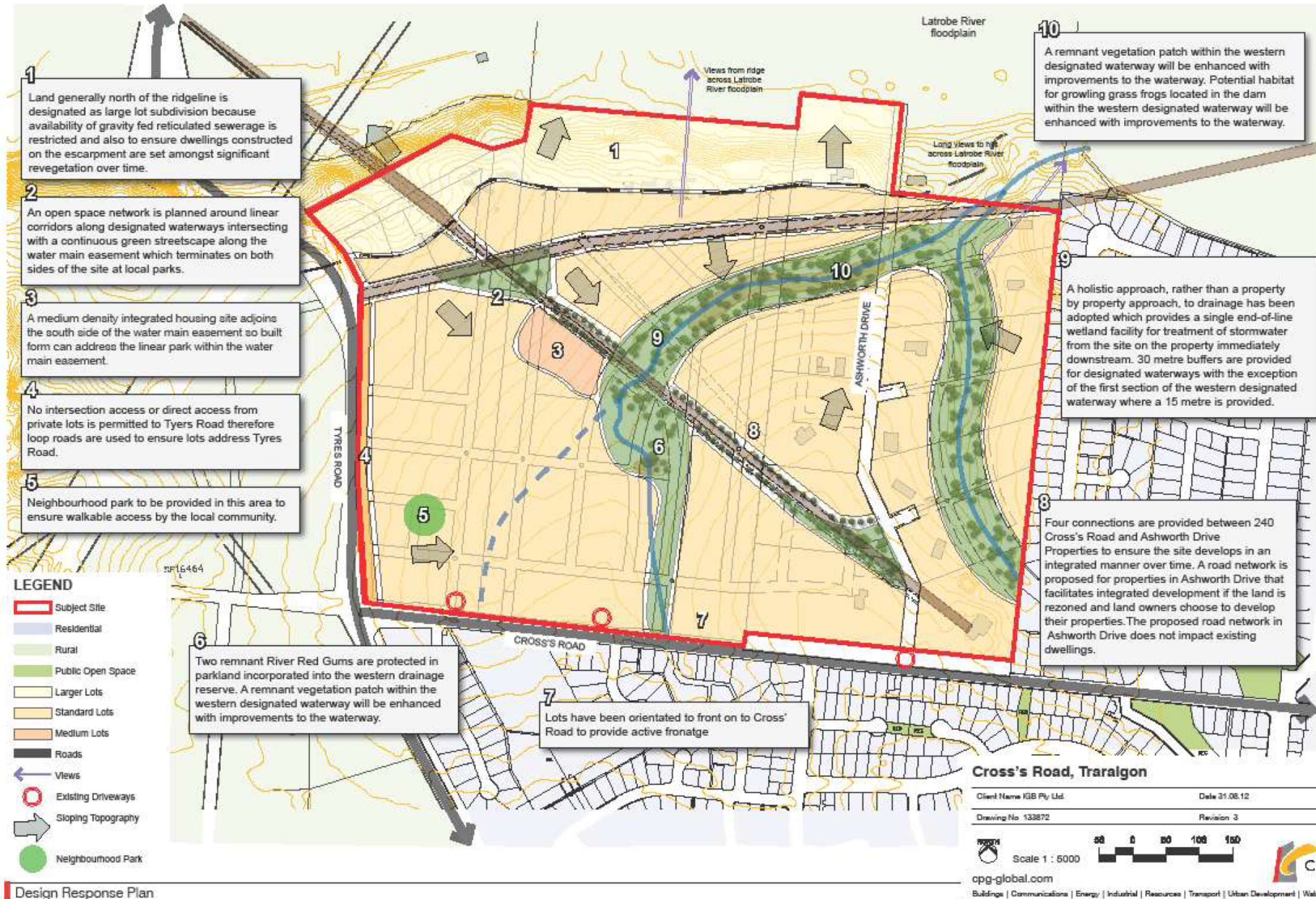
- An open space network is planned around linear corridors along designated waterways intersecting with a continuous green streetscape along the water main easement (future reserve) which terminates on both sides of the site at local parks.
- Two remnant River Red Gums are protected in parkland that is incorporated into the western drainage reserve with additional unencumbered land bolstering the park.
- A local park is located in the south west corner of the site to provide public open space for surrounding residents that are more removed from the central drainage reserve and associated parklands.
- A remnant vegetation patch within the western designated waterway will be enhanced with improvements to the waterway.
- Potential habitat for growing grass frogs located in the dam within the western designated waterway will be enhanced with improvements to the waterway.
- Local parks incorporate land encumbered by easements.
- The water main easement (future reserve) is incorporated into a continuous green streetscape which protects the water pipeline within a 10 metre wide linear park and provides a pedestrian connection from one side of the site to the other.
- As driveways from private lots cannot cross the water main easement (future reserve) modules have been orientated so side fences, not back fences, face the easement.
- An integrated housing site adjoins the south side of the water main easement (future reserve) so future built form can address the linear park within the water main easement.
- Local streets adjoin the open space network on all sides to ensure passive surveillance and activation by dwellings.
- Three connections are provided between 240 Cross' Road and Ashworth Drive to ensure the site develops in an integrated manner over time.
- The 66KV power line has been incorporated into an expanded nature strip within a non-standard access street cross-section.
- The orientation of the street layout seeks to provide logical north south and east west modules whilst responding to site topography to assist with efficient drainage of neighbourhoods.
- The street network has been designed to provide an overland flow path for the minor waterway that enters the site at Cross' Road at the boundary of 150



Tyers Road and 240 Cross' Road and flows north east to the western designated waterway.

- A gravity fed rising main will be constructed through the site from the existing sewer pump station in the Riverslea Estate along the western designated drainage reserve to provide sewerage servicing.
- With no intersection access or direct access from private lots permitted to Tyers Road internally accessed loops roads are used to ensure lots address Tyers Road.
- Lots have been orientated to front on to Cross' Road.
- A path is provided within the Cross' Road reserve as required by Council's Bicycle Plan, 2007.
- A path is provided along Tyers Road, north of Cross' Road as required by Council's Bicycle Plan, 2007.
- Land generally north of the ridgeline is designated as large lot subdivision because the ridgeline, slope and future runoff from development should be sensitively managed to ensure buildings are recessive in the landscape and potential pollutants running into the floodplain are minimised.
- Land affected by Schedule 1 to the Design and Development Overlay is designated as large lot subdivision to provide flexibility in locating buildings and structures.
- A road network is proposed for properties in Ashworth Drive that facilitates integrated development if the land is rezoned and land owners choose to develop their properties.
- The proposed road network in Ashworth Drive does not impact existing dwellings.
- A holistic approach, rather than a property by property approach, to drainage has been adopted which provides a single end-of-line wetland facility for treatment of stormwater from the site on the property immediately downstream.
- 30 metre buffers are provided for designated waterways with the exception of the first section of the western designated waterway where a 15 metre is provided.
- Independent access to Ashworth Drive via access places is provided for all properties on the east side of Ashworth Drive to enable independent development by land owners.
- The layout has been designed to satisfy the requirements of Clause 56 in the Latrobe Planning Scheme and in particular building envelopes, solar orientation, public open space, walking and cycling, street network, lot access and stormwater management,

Figure 4: Design Response





4.2 Development objectives

The development objectives for the Plan are to:

- Maximise development outcomes on large consolidated properties.
- Protect lifestyle and amenity for rural residential properties in Ashworth Drive.
- Provide a framework for future development of properties in Ashworth Drive if the land is rezoned and land owners choose to develop.
- Minimise development costs through logical design.
- Consider title boundaries to ensure sustainable neighbourhood outcomes.
- Consider title boundaries to ensure independent development of large properties.
- Provide for a mix of residential lot sizes which respond to market expectation.
- Use natural features in the design of the neighbourhood.
- Provide high quality open spaces within convenient walking distance of homes.
- Integrate stormwater management and easements into the open space network.
- Create regular modules and lots acknowledging site constraints.
- Provide highly permeable and legible movement through the site.
- Provide a co-ordinated and holistic approach to drainage that benefits the site and downstream land owners.
- Incorporate Crime Prevention Through Environment Design (CPTED) principles in the neighbourhood design.
- Bring critical services to the site including sewer.

4.3 Overview of the Plan

The Plan is provided in Figure 5. The key elements of the Plan are detailed in the following sections. The land budget for the Plan is provided in Table 1 and a property specific land budget is provided in Table 2.

The gross site area is 75.96ha. The Plan provides a Net Developable Area of 64.37ha excluding encumbered land (11.59ha) and unencumbered public open space (1.34ha).

The Plan includes 14.25ha in road reserves including the existing Ashworth Drive road reserve, leaving 48.83ha as Residential Allotment Area. Different lots sizes will be developed across the site including standard and large lots and an integrated housing site.

A total of 677 lots are provided on the site at a density of 10.5 dwellings per Net Developable Hectare (NDHa)¹. In standard density areas (including integrated

¹ Definition of NDHa from Precinct Structure Planning Guidelines

housing site) 662 lots are provided at a density of 11.9 dwellings per NDHa based on an average lot size of 625m² for standard lots and 294m² for lots within the integrated housing site.

Encumbered and unencumbered land contributes to the public open space network across the site. This is detailed in Section 7. The Plan requires a public open space contribution of 5% for each property.

4.4 Community hubs, meeting place and activity centre

Traralgon Statistical Local Area has a population of 27,225 and 11,275 households (2006 Census). At full development the site will accommodate approximately 677 dwellings. By assuming an average of 2.41 persons per household consistent with the Traralgon average (2006 Census) the estimated population on the site is 1,632 people.

Planning for Community Infrastructure in Growth Areas (Australian Social & Recreational Research Pty Ltd, April 2008) recommends a process for determining community infrastructure needs in new communities. *Table 29 - Analysis of Community Infrastructure Requirements for the Hypothetical Community of Batman North (illustrative purposes only)* is an indicative approach to the threshold numbers required for the provision of community infrastructure.

The report identifies a minimum population threshold for the provision of primary schools, Council community centres, kindergartens and equivalent facilities as 1 per 3,000 households. The proposed lot yield for the site of 677 lots is considerably below the indicative threshold of 3,000 households and therefore no community facilities are proposed to be located on the site.

Figure 3 in the *Latrobe Structure Plans – Traralgon (2007)* designates land within the Plan area as 'future residential'. It also requires a future road connection through land to the west of Ashworth Drive to Cross' Road. The structure plan does not designate a 'possible future neighbourhood activity centre' in the Plan area. Such an activity centre would be the logical location in which to co-locate commercial and community facilities such as retail floor space and a maternal and child health centre. Therefore, no commercial facilities or community facilities are proposed in the Plan.

4.5 Rural and commercial land uses

A range of rural and commercial land uses occur within the Plan area. The Plan designates the majority of land for residential subdivision, however existing rural and commercial land uses may continue to lawfully operate within the Plan area.

Figure 5: Development Plan





Table 1: Land Budget

1	GROSS AREA	75.96 Ha	
	240 Cross's Road	31.40	
	150 Tyers Road	15.20	
	Ashworth Drive Properties	29.36	
2	ENCUMBERED LAND	11.59 Ha	15.3 %
	240 Cross's Road Electricity Easement	0.53	
	240 Cross's Road Water Pipe Easement	0.66	
	240 Cross's Road Drainage	2.11	
	240 Cross's Road Cross's Road Widening	0.27	
	150 Tyers Road Electricity Easement	0.27	
	150 Tyers Road Water Pipe Easement	0.52	
	150 Tyers Road Cross's Road Widening	0.11	
	Ashworth Drive Electricity Easement	0.47	
	Ashworth Drive Water Pipe Easement	0.33	
	Ashworth Drive Drainage	4.58	
	Ashworth Drive Utilities	1.73	
3	NET DEVELOPABLE AREA (NDA)	64.37 Ha	
	240 Cross's Road	27.83	
	150 Tyers Road	14.29	
	Ashworth Drive	22.25	
4	OPEN SPACE	1.30 Ha	2.0 % NDA
	240 Cross's Road	0.76	2.7
	150 Tyers Road	0.38	2.7
	Ashworth Drive	0.15	0.7
5	ROAD RESERVE AREA	14.25 Ha	22.1 % NDA
	240 Cross's Road	5.65	
	150 Tyers Road	3.71	
	Ashworth Drive Properties	4.89	
6	RESIDENTIAL ALLOTMENT AREA	48.83 Ha	
	240 Cross's Road Standard	15.99	
	240 Cross's Road Large	4.53	
	240 Cross's Road Integrated	0.90	
	150 Tyers Road Standard	8.21	
	150 Tyers Road Large	1.99	
	Ashworth Drive Standard	15.22	
	Ashworth Drive Large	1.98	
7	LOT YIELD	677 TOTAL	625 Size m2
	240 Cross's Road Standard	256	625
	240 Cross's Road Large	5	10000
	240 Cross's Road Integrated	31	294
	150 Tyers Road Standard	131	625
	150 Tyers Road Large	8	2500
	Ashworth Drive Standard	244	625
	Ashworth Drive Large	2	10000

Disclaimer

- A. Areas and yields of lots and roads are approximate only.
- B. A site visit has been undertaken before the preparation of this land budget.
- C. Areas are in hectares unless otherwise stated.
- D. Lot layout, open space allocation and road classification are indicative only and subject to Council approval.
- E. Road linkages to adjoining lands are based on preliminary discussions and are subject to approval from the land owners
- F. A drainage strategy has been prepared and the plan provides sufficient area for stormwater purposes.
- G. Encumbered land in Ashworth Drive Properties are estimates only, due to feature survey not being available.

Table 2: Property Specific Land Budget

	Gross Area (ha)	Encumbered (ha) <i>Electricity</i>	Encumbered (ha) <i>Water</i>	Encumbered (ha) <i>Drainage</i>	Encumbered (ha) <i>Road widening</i>	Net (ha) <i>Developable</i>	Open Space	%	Net (ha) <i>Residential</i>
240 Cross's Road	31.40	0.53	0.66	2.11	0.27	27.83	0.76	2.7%	27.07
150 Tyers Road	15.20	0.27	0.52	0	0.11	14.30	0.38	2.7%	13.91
Ashworth Drive 1	3.08	0	0.10	0	0	2.98	0.15	5.0%	2.83
Ashworth Drive 2	2.11	0	0.20	0	0	1.91	0.07	3.4%	1.84
Ashworth Drive 3	2.02	0	0	0	0	2.02	0	0	2.02
Ashworth Drive 4	1.98	0	0	0.26	0	1.71	0	0	1.71
Ashworth Drive 5	1.98	0.26	0	0.67	0	1.06	0	0	1.06
Ashworth Drive 6	1.98	0	0	0	0	1.98	0	0	1.98
Ashworth Drive 7	2.09	0.26	0	0.86	0	0.98	0	0	0.98
Ashworth Drive 8	2.10	0	0	0.47	0	1.63	0	0	1.63
Ashworth Drive 9	2.09	0	0	0.48	0	1.61	0	0	1.61
Ashworth Drive 10	2.11	0	0	0.48	0	1.63	0	0	1.63
Ashworth Drive 11	2.00	0	0	0.45	0	1.55	0	0	1.55
Ashworth Drive 12	2.00	0	0	0.58	0	1.42	0	0	1.42
Ashworth Drive 13 (Utility site)	2.00	0	1.7	0.27	0	1.73	0	0	N/A
Existing Ashworth Drive Road Reserve	1.80	0.03	0.03	0	0	N/A	0	0	N/A
Total	75.95	1.34	3.24	6.63	0.38	64.35	1.36		61.27

Disclaimer

- A. Areas and yields of lots and roads are approximate only.
- B. The land budget has been prepared for preliminary feasibility purposes and the following information was not available:
 - Contamination assessment
- C. Preliminary storm water and flood assessment has been undertaken. Retarding basins have been provided for on this plan, however these will be subject to further detailed studies.
- D. A site visit has been undertaken before the preparation of this land budget.
- E. Areas are in hectares unless otherwise stated.
- F. Residential lot areas, open space allocation and road classification are indicative only and subject to Council approval of the DP.
- G. Road linkages to adjoining lands are based on preliminary discussions and are subject to approval from the land owners



5 Housing

The Plan aims to provide a variety of housing types and lots types to meet the Traralgon market demands. The Plan provides a higher proportion of larger standard residential lots that maintain the sense of openness, and respond to landform and landscape cues valued by the community.

A total of 677 lots are provided on the site. Assuming average household size of 2.41 persons the site will be home to approximately 1,632 people when fully developed.

A breakdown of lot yield is provided in Table 3.

Table 3: Lot yield by type

Lot Type	Lot Size	Total Lots
Standard density	625m ²	631
Integrated housing site	294 m ²	31
Large lot	10,000m ²	15

The density in standard lots areas including the integrated housing site is 11.9 dwellings per NDHa assuming an average lot size of 625m² and 294m² respectively.

5.1 Large lot residential

Large lot residential averaging 10,000m² is proposed north of and adjacent to the ridgeline in the northern part of the site on 240 Cross' Road and 75 Ashworth Drive. Large lots are suited to this location because standard lot sizes on the escarpment would erode the integrity of the slope and increase potential pollutant flow into the floodplain. Buildings located on the slope and ridgeline would also create undesirable visual and landscape amenity impacts.

In terms of servicing this area, there is restricted access to the proposed gravity sewer system south of the ridgeline. An additional sewer pump station would be required to pump sewerage over the ridge into the proposed system which is not considered cost effective given the Plan area will need to fund a new sewer pump station. It is likely larger lots will require septic tanks however a land capability assessment should be undertaken with any planning permit application to ensure these are appropriate to the land.

On 150 Tyers Road larger lots down to 2,500m² are provided subject to Gippsland Water's approval of Low Pressure Pump Systems (LLPS). These systems are installed where a gravity fed sewer system cannot be provided due to grade restrictions. A LLPS will connect to the reticulated sewer system constructed to service standard lots south of the ridgeline.

Subject to appropriate servicing, the provision of larger lots supports a transition from the urban to rural landscape within the northern part of the site and presents an opportunity for larger lots to be significantly revegetated so that buildings are recessive in the landscape when viewed from surrounding rural land and the slope is stabilised.

5.2 Affordable housing

Opportunities to deliver affordable housing should be considered at planning permit stage in consultations between land owners, developers, Council and Department of Housing.

5.3 124 Cross' Road

The existing dwelling and outbuildings at 124 Cross' Road may have heritage value and the significance of these should be further investigated as part of a planning permit application. The site is suitable for community uses and such activities should be encouraged in future use, management and development of the site.

5.4 Development guidelines

- Standard density areas should achieve an average density of 11.9 dwellings per NDHa.
- Dwellings in the Integrated Housing Site should achieve a minimum average lot size of 294m².
- Design of the Integrated Housing Site should ensure dwellings address the green streetscape within the water main easement (future reserve). Specifically, fencing along the green streetscape should be semi-transparent.
- Applications to subdivide land affected by Schedule 1 to the Design and Development Overlay should have regard to the relevant provisions in the planning scheme.
- Investigate the heritage significance of the dwellings and outbuildings at 124 Cross' Road as part of a planning permit application.
- The ultimate configuration of access to large lots north of the ridge and standard density lots north of the east west access street along the electricity easement on 240 Cross' Road should be investigated at planning permit stage.
- Design guidelines should be prepared to guide subdivision and development of land on 240 Cross' Road adjoining the western boundary of the drainage reserve south of the local park protecting remnant native vegetation. Guidelines should be registered as a restriction on title for this land and ensure:
 - Dwellings do not present “back fences” to the drainage reserve.



- Dwellings positively address the drainage reserve to the east and access place to the west.
- Building setbacks and design, garaging, fencing and landscaping are appropriate to activate both frontages of new lots created.

6 Integrated stormwater management

A drainage strategy has been prepared by CPG to inform the stormwater quantity and quality controls required to service development of the site. The strategy is located in Attachment 1.

The strategy has been prepared in consultation with West Gippsland Catchment Management Authority (CMA) and Council. The CMA and Council have approved the drainage strategy. Details of the tenure and maintenance of the downstream wetland will be resolved by Council with relevant land owners prior to construction of the facility.

The subject site is characterised by the following key water management issues:

- Two designated waterways;
- 150 Tyers Road drains into 240 Cross' Road along with Ashworth Drive properties due to the topographical characteristics;
- Wetland delivery on Lot 2 on PS 424148C downstream of the site;
- Management and maintenance of the wetland;
- Cost for land owners of 150 Tyers Road to connect to 240 Cross' Road drainage reserve; and,
- Management and transfer of upstream flows through the site.

The options for stormwater management include:

- a) On-site treatment for each property (150 Tyers Road, 240 Cross' Road and Ashworth Drive properties).
- b) On site end of line treatment.
- c) Holistic treatment for the entire Development Plan area downstream and offsite.
- d) Additional treatment of upstream catchments.

The drainage strategy recommends *Option c)* as the preferred option.

6.1 Stormwater conveyance and treatment

The drainage strategy is a holistic response which takes into consideration the 434ha catchment which outfalls to the Latrobe River floodplain, of which the Plan area contributes approximately 76ha.

The strategy addresses stormwater conveyance and treatment. The strategy assumes no retardation of developed flows, water quality treatment and waterway corridor link being provided within the flood plain outside the Plan area.

Modelling undertaken to inform the drainage strategy shows the vast majority of stormwater to be conveyed through 240 Cross' Road and in turn through 45, 60



and 65 Ashworth Drive is generated in the existing urban areas upstream of the Plan area, south of Cross' Road. Additional stormwater produced by the subdivision of 240 Cross' Road and 150 Tyers Road will be minimal by comparison and the strategy recommends against the provision of on-site retardation on 240 Cross' Road. Development of retardation on 240 Cross' Road will extend the period of stormwater flows through 45, 60 and 65 Ashworth Drive which is not considered desirable.

As shown in Figure 6 the drainage strategy consists of:

- Underground stormwater drainage with associated overland flow paths via road reservation for minor catchments.
- A 15 metre drainage reserve and road reservation with under ground drainage within 240 Cross' Road between Cross' Road and water main easement (future reserve) to allow for stormwater conveyance upstream of Cross' Road (Figure 7, Section B).
- 60 metre drainage reservations on 240 Cross' Road and in Ashworth Drive to protect the existing designated waterways (Figure 7, Section A).
- A sediment basin and wetland system external to the site in the flood plain on Lot 2 on PS 424148C downstream of the site.
- A 20 metre drainage reserve connecting the site to the existing St Paul's wetland.
- Minor alterations to the existing St Paul's wetland.

The drainage strategy requires 6.69ha of land on the site for drainage purposes.

As development of 240 Cross' Road occurs stormwater will be conveyed through 45, 60 and 65 Ashworth Drive. The existing drainage channels through these properties perform well during normal and higher flow events and will continue to do so once upstream land is fully developed. It is recommended that disturbance of these drainage channels is avoided as this can lead to erosion.

Figure 6 shows a section of land for drainage purposes traversing land at 110 Cross' Road owned by Gippsland Water. An existing easement for drainage purposes in favour of Council (as drainage authority) is in place and shown on Lot 13 in LP126409. Council and Gippsland Water have agreed this land will not be set aside in a reserve or vested in Council.

Properties on the east side of Ashworth Drive are periodically impacted by stormwater flows from upstream catchments, generally south of Cross' Road. Council will work with land owners to reduce the impact on these properties during and after rainfall events.



6.2 Development guidelines

- Drainage reserves as shown on the Plan should be shown on planning permit applications.
- Drainage reserves should be transferred to Council as responsible authority at subdivision stage.
- Land required to accommodate a wetland on Lot 2 on PS 424148C should be within a reserve vested to Council to the satisfaction of Council.
- A Waterway Management Plan is required to demonstrate the protection of waterways and minimise maintenance.

Figure 6: Drainage Strategy

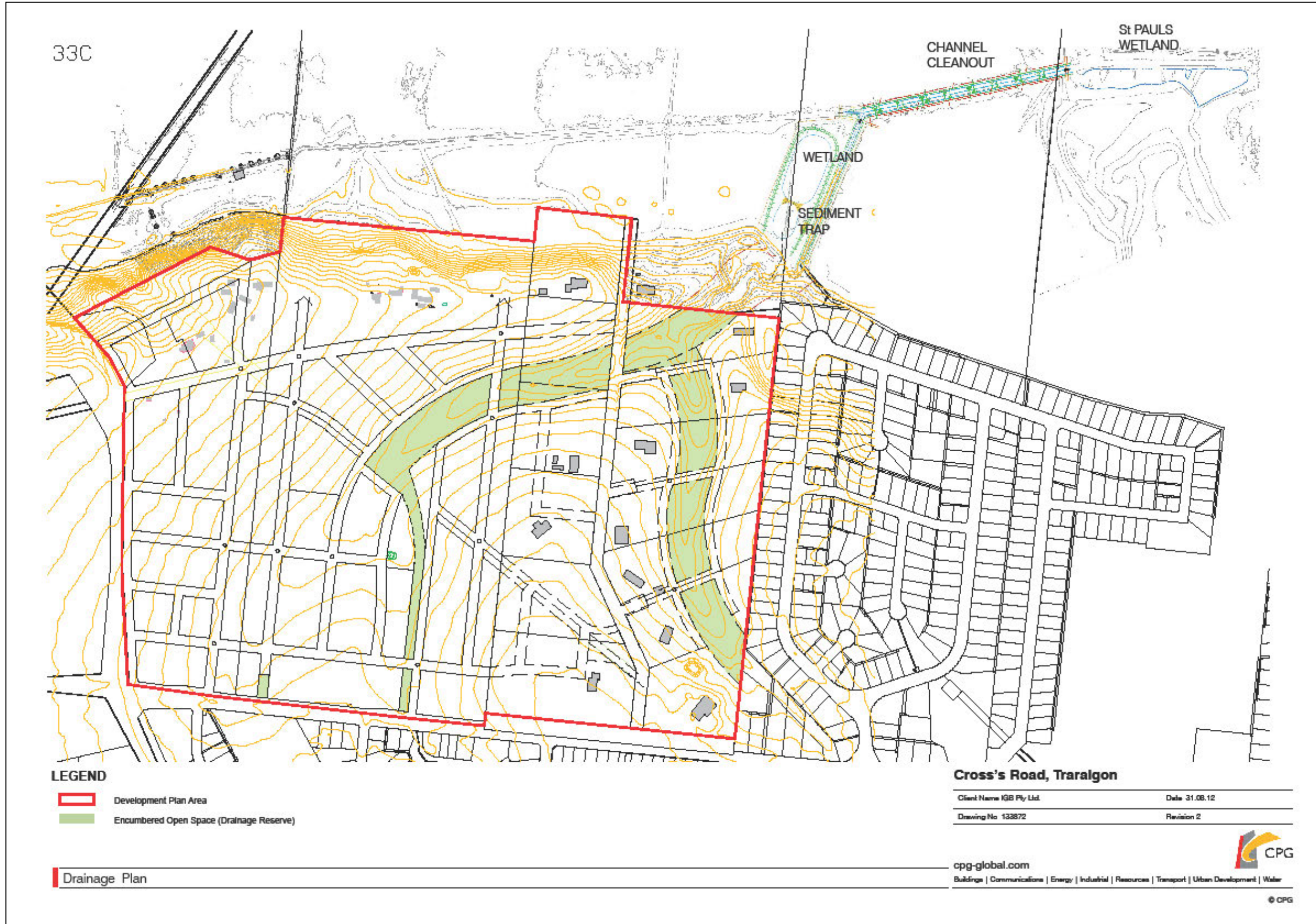
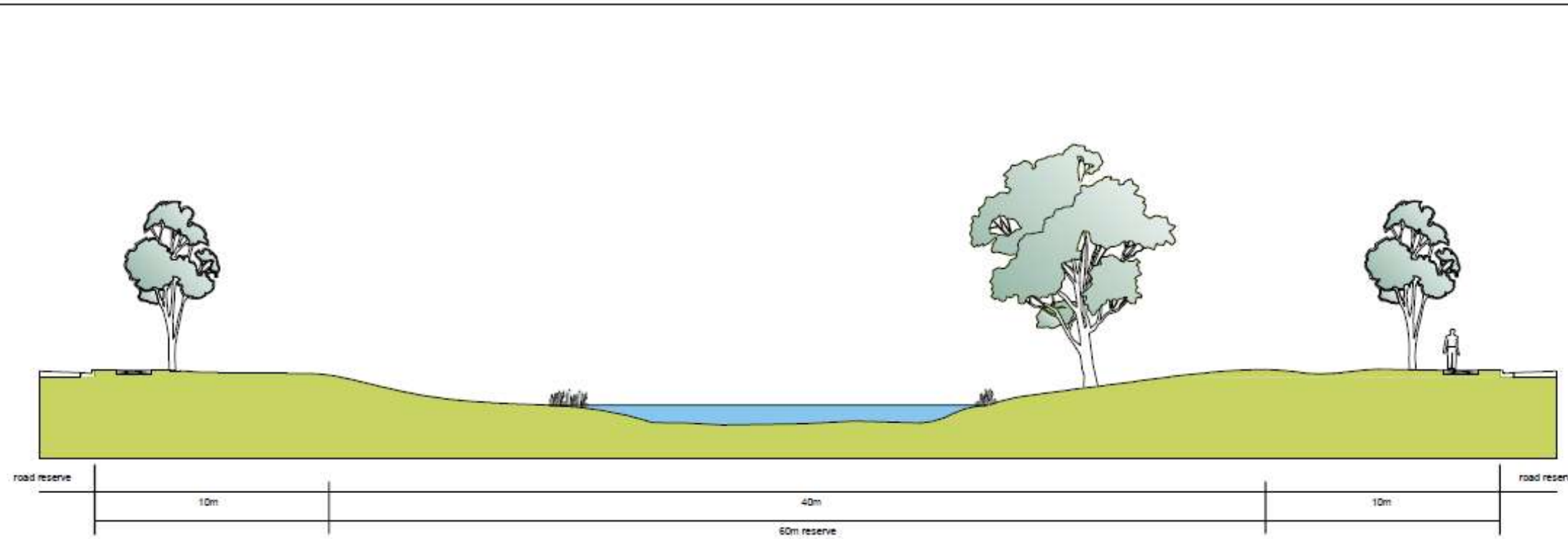
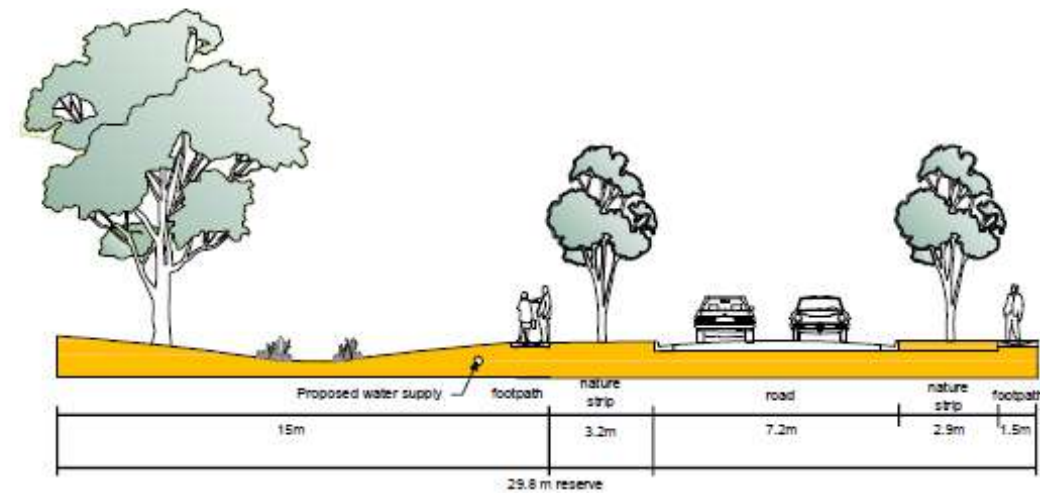


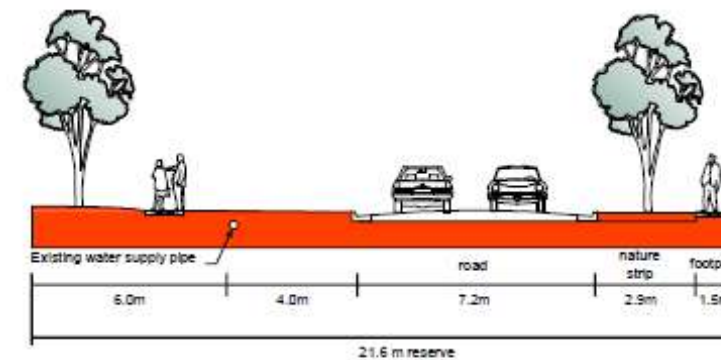
Figure 7: Drainage and road cross sections (Note: Section D below relates to Section 9 and Figure 9)



01 SECTION A: 60m Drainage Reserve with 30m buffers
Scale 1:200 @ A3



02 SECTION B: 29.8m Access Street with Drainage Reserve
Scale 1:200 @ A3



04 SECTION D: 21.6m Access Street with Water Main
Scale 1:200 @ A3

Cross' Road, Traralgon -
Road Cross Sections

Scale A3
1:200

Lengths are in metres

Co-ordinate Datum	MGA55	Sheet	1 of 1
Drawing No.	133872UUU00_SECTIONS	Version	2
CAD Ref.	G:13\133872\ACAD		
Drawn By	JY	Checked By	DD
Date	31.08.12		
REV	AMENDMENT	APPROVED	DATE

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7 Open Space

The site has strong natural and man-made features which have determined the configuration of the open space network for the site shown in Figure 8. These include:

- Designated drainage lines
- Water main easement (future reserve)
- Remnant River Red Gum trees
- Locations where water main easement and electricity easement converge

Within in the open space network, continuous open spaces are proposed along drainage lines and two local parks in the north west and south east of the site. An expanded green streetscape is proposed along the water main easement (future reserve), containing a linear trail with a shared path connecting local parks on each side of the proposed community (Figure 7, Section D). A green link path is provided within all sections of the open space network.

A further local park is provided in the south west corner of the Plan area where homes are not within 500m walking distance of the open space network. With this park, all homes are within 500m walking distance of public open space.

Figure 8 nominates five open spaces nodes across the Plan area within the open space network. These nodes provide a suitable location for community facilities such as playgrounds, barbeques, shelters and seating.

Public open spaces are adjoined by local streets to activate the spaces and provide passive surveillance. The exception is along the southern boundary of the water main easement (future reserve) where driveways are not permitted to cross the water main pipe. Here, semi-transparent boundary fences will adjoin the green streetscape. To manage a section of this interface an integrated housing site is proposed on 240 Cross' Road.

Gippsland Water has confirmed the raw water main within the expanded green streetscape will be duplicated in the future, and the 10m wide easement (future reserve) shown in Figure 7, Section D is sufficient for the existing and duplicated asset.

7.1 Open space contribution

At subdivision stage each property is required to provide a public open space contribution of 5%. The contribution can be made as land or cash or a combination of land and cash. The open space network is shown in Figures 5 and 8 and planning permits should set aside land as public open space generally in accordance with the plans.



Table 2 provides a property specific land budget for all properties in the site. It shows the public open space contribution to be set aside as land on each property. Where the land contribution is less than 5% a cash contribution for the balance amount up to 5% must be paid to Council at subdivision stage.

Cash contributions collected by Council will be used to embellish public open spaces in accordance with Council's funding priorities as outlined in Council's Open Space Strategy.

The open space network includes encumbered and unencumbered land. Council will not credit encumbered land towards the 5% public open space contribution.

7.2 Development guidelines

- Any variation to the provision of public open space must be approved by, and is at the discretion of, Council having regard to the objective of the Plan.
- All parks and drainage reserves must be transferred to Council at subdivision stage.
- Fencing around the perimeter of open spaces should be discouraged to maximise surveillance of spaces.
- Where private lots adjoin public open spaces and drainage reserves boundary fencing should be semi-transparent to encourage surveillance of public spaces and interaction between private and public areas.

8 Biodiversity and Landscape

An ecological assessment was undertaken by CPG to inform the Plan. The report is located in Attachment 2.

8.1 Flora

The key findings are described below.

- It is unlikely the site contains significant habitat for threatened species due to intensive historic land uses (heavily grazed and fertilized), high density of weeds (pasture grasses) and the level of soil disturbance caused by cattle grazing.
- Native vegetation associated with Wades Creek, below the dam on 240 Cross' Road, is a remnant patch of native vegetation despite its low species richness, low floristic and structural diversity and high density of weeds.
- Two scattered trees (River Red Gums) were recorded within the site.
- The vegetation prior to settlement was EVC 53 – Swamp Scrub. However, the historic land use including grazing, pasture improvement and more regular and concentrated inundation, has considerably altered the vegetation quality of this area. It is considered that EVC 53 - Swamp Scrub on the site is now extinct and has been replaced by a relatively new community of exotic plants.
- Under the Native Vegetation Framework, the West Gippsland Vegetation Plan and the Latrobe Planning Scheme the site is a disturbed area, and as such, the principles of net gain are not applicable.

Recommendations of the assessment include:

- The conservation values of the remnant Swamp Scrub below the dam could be greatly improved by supplementary revegetation and intensive weed control.
- The removal of the low lying, shallow saturated area in 240 Cross' Road immediately north of the piped drainage outfall under Cross' Road is not considered to significantly reduce the biodiversity values of the site particularly if it is replaced by an on site stormwater management system.
- The incorporation of the waterway and Wades Creek into such a water treatment facility which includes extensive revegetation would greatly improve the contribution the site makes to sustainable biodiversity conservation.

The alignment of a potential north south access street in the north east corner of 240 Cross' Road is shown crossing the western drainage reserve which includes an area of emergent EVC 53 – Swamp Scrub along the existing waterway. The potential suitability of the alignment of the access street in this location should be examined in the planning permit stage in consultation between Council, DSE and the permit applicant.

8.2 Fauna

The key findings are described below.

- The assessment identified it is unlikely the subject land contains significant habitat for threatened species. It is noted that the habitat in the dam on 240 Cross' Road may be suited to the breeding of the Growling Grass Frog (GGF). No frogs, other than the Common Froglet (*Crinia signifera*) were heard during the site assessment.
- The assessment also identified that Wades Creek may provide a marginal habitat for Dwarf Galaxias and, further downstream, the Australian Grayling. It is considered the current contribution Wades Creek makes to the sustainable conservation of both species of fish is marginal given the current quality of habitat.

Recommendations of the assessment include:

- An assessment of the waterway on the site for Dwarf Galaxias and Australian Grayling is not considered to be essential however, such an assessment is required by the DPO.
- There is potential for the GGF to utilise the marginal habitat of the dam on 240 Cross' Road. An assessment to determine the presence and significance of the site to the GGF should be carried out (October – November 2011). A survey was conducted in December 2011.

In December 2011 a targeted survey of GGF was undertaken and no GGF were recorded or seen on the site. Consequently it is considered unlikely that they inhabit the site. The water test results also support this conclusion. The report is located in Attachment 3.

8.3 Landscape

In addition to the open space network proposed in Section 7 landscape development will be supported by street tree planting as shown in the Concept Landscape Masterplan (Figure 8). A hierarchy of planting will be provided across the site and an indicative planting schedule for street trees, riparian planting areas and open space planting is provided in Attachment 3.

Within the hierarchy, signature planting is proposed along access streets with different plantings schemes proposed along access places and lanes and within public open spaces.

Figure 8 shows five open space nodes within the open space network. Playgrounds and other community recreational infrastructure such as barbeques and shelters are nominated within three of the park nodes in Figure 8. These nodes as well as the drainage reserves are suitable locations for public art and community events.



8.4 Cultural heritage

An Aboriginal and Historical Heritage Assessment provided in Attachment 4 was undertaken by Ecology and Heritage Partners and informed development of Plan. The assessment included desktop research and site survey. It found no Aboriginal or historical sites on the site.

[REDACTED]

8.5 Development guidelines

- A landscape masterplan must be submitted with planning permit applications to subdivide land.
- Streetscapes and public open spaces must be planted with species from the planting schedule in Attachment 5.
- Revegetation and intensive weed control in the remnant patch of native vegetation below the dam in the western drainage reserve should be undertaken to improve conservation values.
- [REDACTED]
- A management plan should be provided in the event that Growling Grass Frog or Dwarf Galaxias are detected on site following commencement of works.

Figure 8: Concept Landscape Masterplan



Cross's Road, Traralgon

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Drawing No 133872 Revision 4

Scale 1 : 5000

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9 Access and movement

The movement network is planned around paths in the open space network and a distorted grid street network to provide legible connections in a highly permeable street network within the site. Figure 9 shows the street hierarchy and internal and external active path network.

9.1 Pedestrian pathways

Figure 9 shows shared paths through the open space network including a shared path within the green streetscape of the water main street. Off road paths within drainage reserves should be constructed on both sides of the waterway.

A footpath is provided on the north side of Cross' Road and will be accommodated within a widening of the existing road reserve. A footpath is also provided within the existing Tyers Road reservation.

9.2 Public transport

Public transport in Traralgon is provided by Latrobe Valley Buslines. There are currently eight designated bus routes of which Route 1 Rangeview and Route 2 Freeman Park serve the north west of Traralgon. Neither of these routes travels near the site or along Cross' Road.

Consultation with the DOT and busline should be held to investigate an extension of service area to cater for residents on the site and in the adjoining Riverslea Estate and along Cross' Road. A potential bus route and indicative locations for bus stops are shown on the site in Figure 9.

The proposed street network has considered the potential for a future bus network through the site. Specifically, the access streets have been designed to allow for east to west bus travel through the site, in walkable proximity to most future residential lots.

9.3 Cross' Road widening

According with the requirements of Gippsland Water and Council, the reservation accommodating Cross' Road will be widened by 6.8m to accommodate:

- Appropriate offsets from the existing rising sewer main in the verge.
- Appropriate offsets from a future duplication of the rising sewer main,
- Appropriate offsets from new services required by future subdivision.
- A standard connector street cross section including parallel parking and street trees.



9.4 Traffic volumes and intersections

A traffic impact assessment for the Plan has been prepared by SMEC and is located in Attachment 6. The assessment has been undertaken to determine the:

- Impact of development on adjoining streets/roads
- Intersection locations and treatments
- Internal road hierarchy

VicRoads advised that no access can be provided from the site to Tyers Rd. This requires all access to the site to come from Cross' Road. A street hierarchy has been established where the three connections into the site from Cross' Road are designated as access streets. The layout provides two key east-west routes within the site that integrate across the precinct.

Full development of the site will generate approximately 5,800 vehicle trips per day. The assessment shows:

- Impact of additional trips on the capacity of Cross' Road and Tyers Road is acceptable.
- Location of proposed access points onto Cross' Rd are suitable.
- Each of the three intersections on to Cross' Road should provide an auxiliary left turn and channelized right turn treatment.
- The Cross' Road reserve width needs localised widening by 2.4m to accommodate the proposed intersection treatments into 150 Tyers Road and 240 Cross' Road.

In summary, the layout, road hierarchy and intersection treatments to adjoining roads are considered acceptable.

9.5 East side of Ashworth Drive

Properties on the east side of Ashworth Drive are provided with independent access to Ashworth Drive via access places to enable development of their properties without reliance on other land owners.

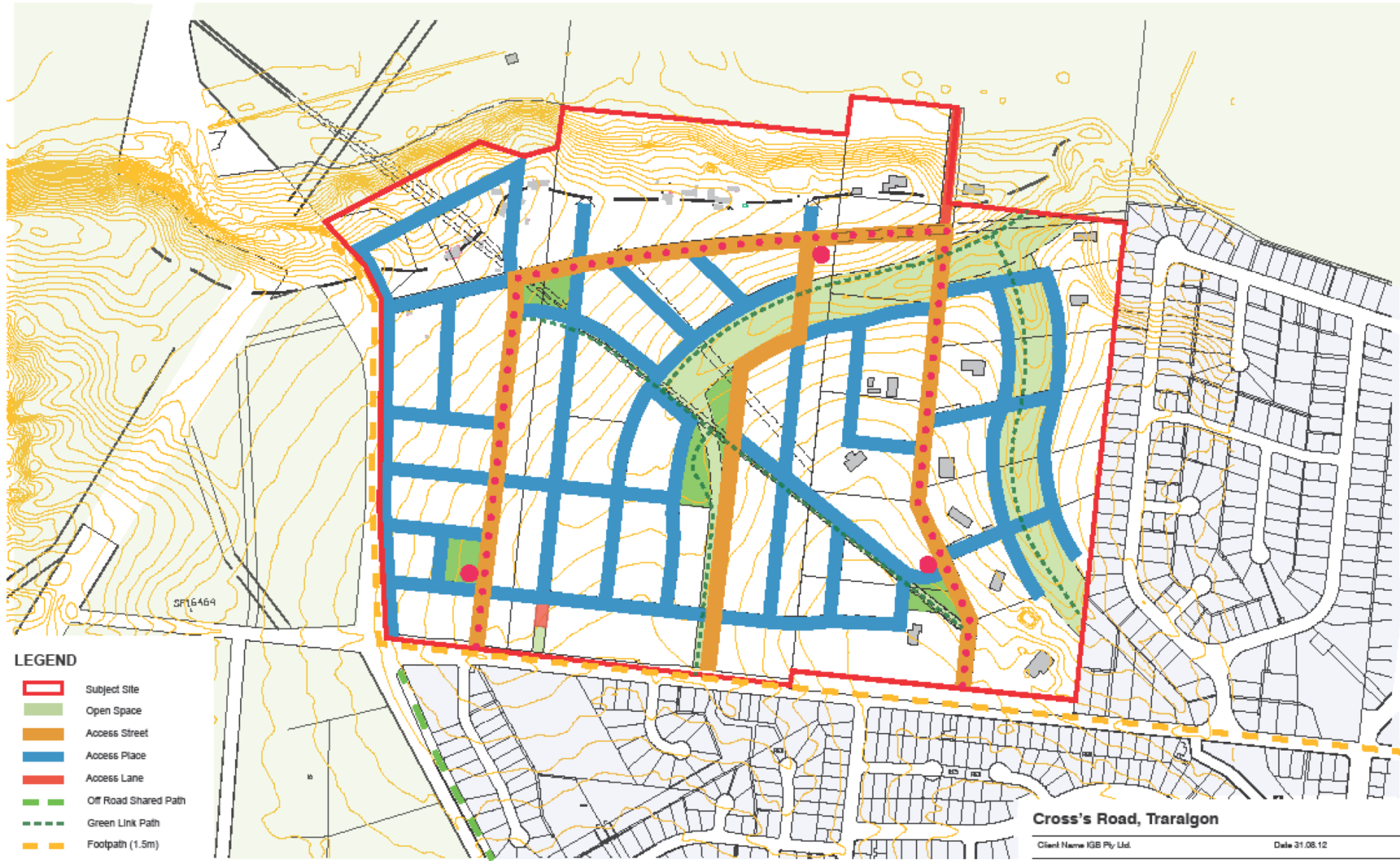
9.6 Development guidelines

- Cross sections for the road types proposed in the road hierarchy for the site are to comply with Latrobe City Council requirements:
 - o Connector Street, 20m
 - o Access Street, 16-18m
 - o Access Place, 16m
 - o Access Lane, 3-8m



- Off road paths within drainage reserves should be constructed on both sides of the waterways.

Figure 9: Street hierarchy and internal and external active path network



LEGEND

- Subject Site
- Open Space
- Access Street
- Access Place
- Access Lane
- Off Road Shared Path
- Green Link Path
- Footpath (1.5m)
- Potential Bus Route
- Indicative Bus Stop

Cross's Road, Traralgon

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10 Infrastructure Services and Development Staging

10.1 Sewer

Land in Ashworth Drive requires rezoning to Residential 1 zone before conventional subdivision can occur. Land at 240 Cross' Road and 150 Tyers Road areas is zoned for subdivision and requires a sewer connection through Ashworth Drive properties to service new development.

It is proposed that a gravity fed sewer will be brought to the site from the existing network to the east of the site. Recommendations identified in Gippsland Water's review of the Traralgon sewer network are also to be considered once final.

There are two principal options:

- a) Upgrade the existing sewer pump station in Riverslea Estate with gravity sewer to site; or
- b) Construct a new sewer pump station with gravity sewer and rising main.

The preferred option is *Option b*).

The rising main to 240 Cross' Road and 150 Tyers Road will be constructed along the low point in the western waterway through three properties in Ashworth Drive. Consent will be required from the affected land owners. The provisional route for the rising main is shown in the Shared Infrastructure Plan in Figure 10. It will connect to two existing sewer pump stations on the south side of Cross' Road.

The rising main will be a shared sewer to service the entire site and it will service land in Ashworth Drive if and when that is rezoned. Until such a time, the delivery of the rising main will be co-ordinated by the land owners of 150 Tyers Road and 240 Cross' Road. The staging of access to the rising main for each of these properties will be agreed between land owners.

10.2 Sewer on large lots

Due to the steep slope on land north of the ridgeline designated as "large lot" on 240 Cross' Road and 75 Ashworth Drive it is not feasible to provide reticulated sewerage to this part of the site. In addition, this part of 240 Cross' Road will continue to operate as a dairying property for the foreseeable future. All land south of the ridgeline, designated as standard lots, will have access to reticulated sewerage. Therefore it is not considered necessary for a land capability assessment to be undertaken on this part of the site.

The Plan requires all large lots on 240 Cross' Road and 75 Ashworth Drive to have a minimum area of 10,000m² and require a land capability assessment with a planning permit application consistent with the EPA *Code of Practice – Onsite Wastewater Management*.



The Plan also shows large lots on land generally north of the ridgeline on 150 Tyers Road with an average size of 2,500m². The size of these lots is not likely to be sufficient to sustainably treat and contain all wastewater on site as above. Therefore the developer will be required to use low pressure pump systems on large lots on 150 Tyers Road to connect these lots to the reticulated sewerage system to be built south of the ridgeline on the property. This will negate the need for on-site treatment of wastewater and also the need for a land capability assessment.

The suitability of low pressure pump systems will be assessed by Gippsland Water during the planning permit application process. In the event that use of a low pressure pump system is not supported and land designated as large lots on 150 Tyers Road cannot be connected to reticulated sewer, subdivision of this land will be required to provide lots with a minimum area determined by a land capability assessment prepared to the satisfaction of the EPA and Council.

10.3 Drainage

As described in Section 6, an integrated stormwater management strategy is proposed for the entire site. Development of 240 Cross' Road and 150 Tyers Road requires conveyance of stormwater through three properties in Ashworth Drive. The extent of stormwater to be conveyed through these properties does not warrant on-site retardation.

The eastern and western drainage reserves will be shared infrastructure servicing multiple properties within the site. Each drainage reserve can be built progressively to the satisfaction of Council, and their delivery will be co-ordinated by the land owners of the corresponding catchments.

The treatment of stormwater from the entire site will occur downstream in a wetland to be constructed on Lot 2 in PS424148C. Prior to construction of the wetland, interim stormwater treatment works should be constructed on-site to the satisfaction of Council.

10.4 Electricity, gas and telecoms

These services are available adjacent to the site and connections will be provided with the initial stage of development.

SP AusNet has advised that the existing 66KV electricity line traversing the northern part of the site must be retained within a 12.8m easement. The Plan proposes to retain the electricity line within an expanded nature strip in a road reserve. SP AusNet advised that the easement may be entirely within the future road reserve or may partially overlap private lots adjacent to the road reserve.

10.5 Development staging

Properties in Ashworth Drive require rezoning to Residential 1 Zone to enable conventional subdivision, therefore initial development of the site will occur on 240 Cross' Road and 150 Tyers Road.

Given the route of the rising sewer main along the western drainage reserve, 240 Cross' Road will be serviced by sewer before 150 Tyers Road. The initial development front is likely to be on Cross' Road in the south east corner of 240 Cross' Road. The development front is likely to progress west along Cross' Road towards Tyers Road as the western leg of the rising sewer main is developed.

Development staging is not fixed and development of land in the south west corner of the site can be brought forward with early delivery of the western leg of the rising sewer main and shared drainage infrastructure. The delivery of shared sewer and drainage infrastructure will be mutually agreed between land owners.

10.6 Infrastructure requirements

Development will require a range of infrastructure projects to be delivered in the Plan area. An outline of these projects is provided in Table 5.

Table 5: Infrastructure projects

Project	Timing	Responsibility
Cross' Road widening (land and urbanisation of rural verge)	Subdivision stage	Land owners to vest land for widening in Council in Plans of Subdivision and construct kerb and channel
Temporary stormwater treatment	Required on a staged basis prior to a Statement of Compliance for each stage	Land owners
Footpath between Rostrevor Close and Wirilda Crescent on south side of Cross' Road	At Council's discretion	Council
Footpath on north side of Cross' Road adjacent to Plan area	Required on a staged basis for stages with frontage to Cross' Road prior to a Statement of Compliance for each stage	Land owners



Intersections into 150 Tyers Road and 240 Cross' Road	Required on a staged basis for stages containing intersections with Cross' Road prior to a Statement of Compliance for each stage	Land owners
Drainage reserves with paths on both sides of waterways	In accordance with a site stormwater management plan to the satisfaction of Council	Land owners
Rising sewer main	As agreed between land owners in cost sharing agreement	Land owners

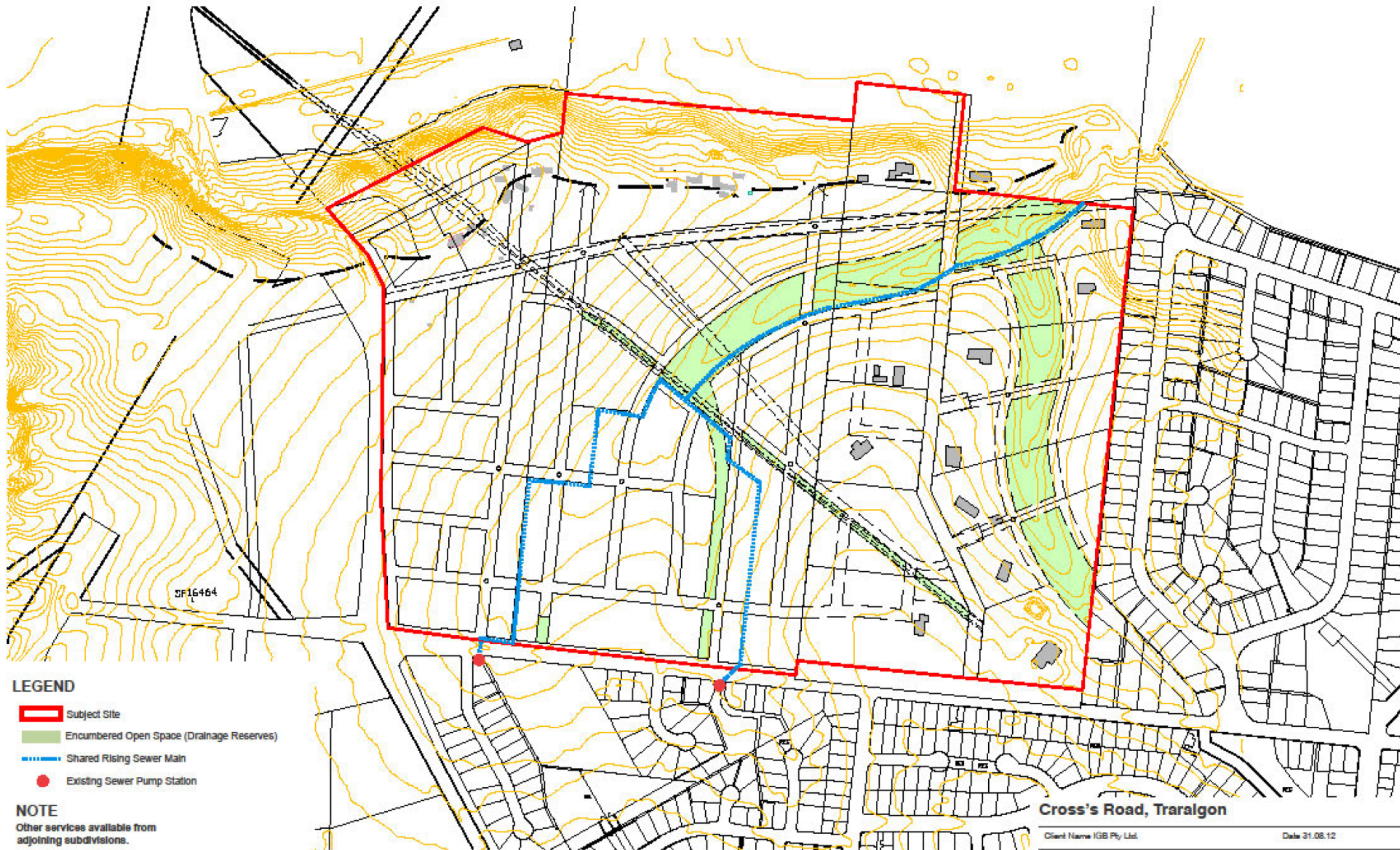
Have regard to additional stormwater likely to be generated by development of land in the Plan area and in existing upstream catchments, temporary retardation of stormwater on lots on the east side of Ashworth Drive is not recommended as discussed in Section 6.1.

The Traffic Impact Assessment (Appendix 6) does not recommend an upgrade to the intersection of Tyers Road and Cross' Road as a result of additional traffic generated by development in the Plan area.

10.7 Development guidelines

- All lots within the Plan area, unless greater than 10,000m² in area, must be connected to reticulated sewerage. A planning permit application to subdivide land at 240 Cross' Road and 75 Ashworth Drive into large lots must be accompanied by a land capability assessment to the satisfaction of the EPA and Council.
- Large lots created on 150 Tyers Road must be connected to reticulated sewerage via the use of low pressure pump systems approved by Gippsland Water at the time of a planning permit application. In the event that use of low pressure pump systems is not supported by Gippsland Water and land designated as large lots on 150 Tyers Road cannot be connected to reticulated sewer, subdivision of the land must provide lots with a minimum area determined by a land capability assessment prepared to the satisfaction of the EPA and Council.

Figure 10: Shared Infrastructure



LEGEND

- Subject Site
- Encumbered Open Space (Drainage Reserves)
- Shared Rising Sewer Main
- Existing Sewer Pump Station

NOTE

Other services available from adjoining subdivisions.

Cross' Road, Traralgon

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