CLAUSE 56 REPORT

Old Peterborough Road, Peterborough
(Lot 1 PS915697E)

Summary Table

Objectives	Complies with Standard (Y/N)	Complies with Objective (Y/N)
56.01-1 Subdivision site and context description	Y	Y
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56.02-1 Strategic implementation objective	Y	Y
56.03-4 Built environment objective	Y	Y
56.04-1 Lot diversity and distribution objectives	Y	Y
56.04-2 Lot area and building envelopes objective	Y	Y
56.04-3 Solar orientation of lots objective	Y	Y
56.04-4 Street orientation objective	Y	Y
56.04-5 Common area objectives	N/A	N/A
56.05-1 Integrated urban landscape objectives	Y	Y
56.05-2 Public open space provisions objectives	Y	Y
56.06-2 Walking and cycling network objectives	Y	Y
56.06-4 Neighbourhood street network objective	Y	Y
56.06-5 Walking and cycling network detail objective	Y	Y
56.06-6 Public transport network detail objectives	N/A	N/A
56.06-7 Neighbourhood street network detail objective	Y	Y
56.06-8 Lot access objective	Y	Y
56.07-1 Drinking water supply objective	Y	Y
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56.09-2 Electricity, telecommunication, gas objective	Y	Y
56.09-3 Fire hydrants objective	Y	Y
56.09-4 Public lighting objective	Y	Y

SUBDIVISION SITE & CONTEXT DESCRIPTION & DESIGN RESPONSE

Clause 56.01 - Subdivision site and context description

The site and context description may use a site plan, photographs or other techniques and must accurately describe the site as set out in the clause:

Response – Objective and Standard Met

A comprehensive site and context description has been provided above in the planning report.

Clause 56.01-2 - Subdivision design response

The design response must explain how the proposed design:

- Derives from and responds to the site and context description.
- Responds to any site and context features for the area identified in a local planning policy or a Neighbourhood Character Overlay.
- Responds to any relevant objective, policy, strategy or plan set out for the area in this scheme.
- Meets the relevant objectives of Clause 56.

The design response must include a dimensioned plan to scale showing the layout of the subdivision in context with the surrounding area. If in the opinion of the responsible authority this requirement is not relevant to the assessment of an application, it may waive or reduce the requirement.

Response – Objective and Standard Met

A comprehensive design response has been provided above in this report and supporting documents.

The proposal responds to the natural slope of the land, to ensure that subsequent development of each lot is integrated into the surrounding urban form of the township.

The proposal avoids the introduction of un-controlled accesses onto the surrounding road network through the introduction of the internal road network that provides a rational and controlled flow of traffic and pedestrian movement to a minor street that then filters through controlled intersections at the major intersection with Old Peterborough Road.

The proposal is consistent with LPP Clause 11.01-1L-05 and PDG as detailed above in this report. The design response achieves the following:

- The subdivision is located within the settlement boundary.
- The orientation of lots are consistent with the preferred grid pattern, while also providing an opportunity for lots to gain hinterland views where they are

north facing.

- Providing onsite public open spaces that align with natural water catchment areas (in as not sink holes are present on site) that also link with pedestrian connections to the adjoining neighbourhoods to the south and west.

- The integration of habitat corridors through the site via public open space areas and pedestrian connection reserves.
    - The avoidance of the use of boundary fencing as part of the civil works to reduce the tendency for future development to include more urbanised fenced boundaries.
    - Create a less urbanised appearance in the road network with rolled kerbs, grassed verges and vegetated stormwater systems in the reserve areas (as well as other indigenous landscaping species) to better integrate the subdivision into the coastal character of Peterborough.

All objectives and standards of Clause 56 have been met as detailed.

Clause 56.02-1 – Strategic implementation policy

To ensure that the layout and design of a subdivision is consistent with and implements any objective, policy, strategy or plan for the area set out in this scheme.

Standard C1

An application must be accompanied by a written statement that describes how the subdivision is consistent with and implements any relevant growth area, activity centre, housing, access and mobility, community facilities, open space and recreation, landscape (including any native vegetation precinct plan) and urban design objective, policy, strategy or plan for the area set out in this scheme.

Response – Objective and Standard Met

The proposal is consistent with the Peterborough Framework Plan and is located within the settlement boundary as detailed at the Clause 11.01-1L-05 Settlement – Peterborough assessment above in this report.

The proposal is highly connected to the rest of the town through multiple pedestrian connections/public open space areas, which also act as habitat corridors that lead toward larger scattered remnant forest pockets to the north and east of the township.

As detailed in this report, the proposal is also highly consistent with the PDG design standards.

LIVEABLE AND SUSTAINABLE COMMUNITIES

Clause 56.03-4 – Built environment objective

To create urban places with identity and character.

Standard C5

The built environment should:

- Implement any relevant urban design strategy, plan or policy for the area set out in this scheme.
- Provide living and working environments that are functional, safe and attractive.
- Provide an integrated layout, built form and urban landscape.
- Contribute to a sense of place and cultural identity.

An application should describe the identity and character to be achieved and the elements that contribute to that identity and character.

Response – Objective and Standard Met

The proposal is consistent with the Overarching Guidelines detailed in the PDG that provide guidance for street interface and siting.

As detailed in this report, the proposal provides a positive response to all elements of the overarching guidelines, which ensures that the neighbourhood character (small coastal village) is maintained and enhanced by the development.

Clause 56.03-5 - Neighbourhood character objective

To design subdivisions that respond to neighbourhood character.

Standard C6

Subdivision should:

- Respect the existing neighbourhood character or achieve a preferred neighbourhood character consistent with any relevant neighbourhood character objective, policy or statement set out in this scheme.
- Respond to and integrate with the surrounding urban environment.
- Protect significant vegetation and site features.

Response – Objective and Standard Met

All lots have the capacity to contain future development that is consistent with the PDG as detailed in this report.

The subdivision makes use of the natural topography of the site to integrate a gravity stormwater system, through a system of reserves to filter stormwater.

The proposed reserves also have multiple purposes that include them being part of the pedestrian connections across the site to surrounding neighbourhood areas, but also provide a critical link in habitat corridors to surrounding scattered remnant vegetation located east and north of the site.

The application proposes to restrict the access points onto the Old Peterborough Road, which will conserve the roadside vegetation. The entrance street is located in line with

the existing gate and is clear of vegetation. This will provide a baseline vegetated surround, therefore integrating the proposed new development into the preferred and existing small coastal village neighbourhood character.

The additional investment in indigenous vegetation across the site through pedestrian connection and stormwater/public open space reserves and street trees as part of the civil works will conservatively increase the area of indigenous vegetation on the site significantly. The considerable increase is primarily as a result of the subject site not containing any existing indigenous vegetation at present.

LOT DESIGN

Clause 56.04-1 - Lot diversity and distribution objectives

To achieve housing densities that support compact and walkable neighbourhoods and the efficient provision of public transport services.

To provide higher housing densities within walking distance of activity centres. To achieve increased housing densities in designated growth areas.

To provide a range of lot sizes to suit a variety of dwelling and household types.

Standard C7

A subdivision should implement any relevant housing strategy, plan or policy for the area set out in this scheme.

Lot sizes and mix should achieve the average net residential density specified in any zone or overlay that applies to the land or in any relevant policy for the area set out in this scheme.

A range and mix of lot sizes should be provided including lots suitable for the development of:

- Single dwellings.
- Two dwellings or more.
- Higher density housing.
- Residential buildings and Retirement villages.

Response – Objective and Standard Met

There are no specific lot size preferences detailed in the GRZ1.

The DDO24 requires that the average lot sizes should be not less than 700m2 in size, with the minimum lot size of not less than 600m2. The development achieves both of those design requirements.

Despite the compliance with the above mentioned lot sizes, the proposal cannot expressly meet the standard that seeks to locate at least 95% of dwellings within 400m to the nearest bus stop, 600m of a tram stop or 800m of a railway station. Obvious

departures from this standard that will mostly never be met in a regional context are location of dwellings from tram and train transport hubs as they are absent from regional areas.

There is a singular bus stop located at the General Store in Macs Street in the central part of Peterborough. The distance from the subject site is between 800-1050m from the bus stop, which does not strictly meet the desired outcomes of the standard. However, the Standard seeks to implement a Standard that is mostly based on urban Melbourne expectations for what is a walkable neighbourhood, which is a very different context to that of the subject land and small coastal village like Peterborough.

The subject land has been selected as one of the few growth areas for Peterborough through a strategic planning process connected with the Peterborough Urban Design Framework (UDF) and on that basis has been identified that it was acceptable to have greater pedestrian movement distances within the town.

Whilst the proposal has a minor departure from strict compliance with this Standard given the lack of existing public transport options, the proposal is able to meet the objectives by providing all lots that meet the preferred lot sizes with high quality pedestrian connections to all other parts of Peterborough that are consistent with the PDG, which is the main implementation tool from the Peterborough UDF.

Clause 56.04-2 - Lot area and building envelopes objective

To provide lots with areas and dimensions that enable the appropriate siting and construction of a dwelling, solar access, private open space, vehicle access and parking, water management, easements and the retention of significant vegetation and site features.

Standard C8

Lots greater than 500 square metres should be able to contain a rectangle measuring 10 metres by 15 metres and may contain a building envelope.

Lot dimensions and building envelopes should protect:

- Solar access for future dwellings and support the siting and design of dwellings that achieve the energy rating requirements of the Building Regulations.
- Existing or proposed easements on lots.
- Significant vegetation and site features.

Response – Objective and Standard Met

Lot size capacity analysis has been completed in the planning report, which has purposely shown lot capacity for lots of 600m2 and also larger 700m2+ lots with varying orientation.

The lot analysis in this report demonstrates that it is not only able to meet this Standard but also able to comply with the PDG. On that basis it has been determined that

building envelopes will not form part of the proposed subdivision controls as there is sufficient capacity in each lot to not have to further encumber the lots unnecessarily.

It is more than reasonable that there is sufficient guidance for future development for each lot can be reasonably guided by the DDO24 and PDG controls that currently exist in the Planning Scheme.

The analysis demonstrates that each of the lots is able to contain a rectangle with dimensions of 10m x 15m.

All lots are either large enough to provide sufficient area for solar access or have their long axis of the lot facing directly north, therefore maximising solar access to lots.

It is intended that all existing easements will be accommodated into the proposed subdivision and those services are not encumbered or compromised by the proposal when a formal plan of subdivision is prepared.

Where necessary, easements across private land will be established on the plan of subdivision document to protect services. There is no significant vegetation onsite.

The main site features that are substantially being retained are the natural undulations that are being included into the proposed gravity stormwater system that will facilitate the required onsite water filtration through retention basins in both proposed larger reserve areas.

All relevant above Standards are met as detailed.

Clause 56.04-3 - Solar orientation of lots objective

To provide good solar orientation of lots and solar access for future dwellings.

Standard C9

Unless the site is constrained by topography or other site conditions, at least 70 percent of lots should have appropriate solar orientation.

Lots have appropriate solar orientation when:

- The long axis of lots are within the range north 20 degrees west to north 30 degrees east, or east 20 degrees north to east 30 degrees south.
- Lots between 300 square metres and 500 square metres are proposed to contain dwellings that are built to the boundary, the long axis of the lots should be within 30 degrees east and 20 degrees west of north.
- Dimensions of lots are adequate to protect solar access to the lot, taking into account likely dwelling size and the relationship of each lot to the street.

Response – Objective and Standard Met

The majority of lots have appropriate solar orientation with their long axis within the range – north 20 degrees west to north 30 degrees, or east 20 degrees north to east 30 degrees south.

Other lots such as those on the south side of Road A that do not strictly meet the above Standard, those lots have sufficient size, width and orientation to accommodate sufficient solar access for future residential development.

Clause 56.04-4 - Street orientation objective

To provide a lot layout that contributes to community social interaction, personal safety and property security.

Standard C10

Subdivision should increase visibility and surveillance by:

- Ensuring lots front all roads and streets and avoid the side or rear of lots being oriented to connector streets and arterial roads.
- Providing lots of 300 square metres or less in area and lots for 2 or more dwellings around activity centres and public open space.
- Ensuring streets and houses look onto public open space and avoiding sides and rears of lots along public open space boundaries.
- Providing roads and streets along public open space boundaries.

Response – Objective and Standard Met

The PDG design standards encourage the limitation of constructed fences in residential areas to maintain the existing and preferred neighbourhood character.

While it is not proposed to construct any fencing as part of the civil works, consideration in detail design for future dwellings should include those lots that are double fronted that face internal roads and also the Old Peterborough Road have lower fences/no fences on both road frontages to maintain passive surveillance.

There are no arterial or connector roads adjacent to the subject land. The main arterial road (Great Ocean Road) is separated from the site to the south.

There are larger sites within the proposal that are capable of providing for 2 dwellings/unit development that are between 800-1000m2 or greater that are all within 200m of public open space reserves within the development. That said, it is unlikely that the lots will be further subdivided given the proposed lot layout.

As already highlighted, it is less critical to avoid locating side and rear boundaries of lots adjacent to public open space areas because of the design guidance in the PDG that encourages that dwellings overlook public open space areas, therefore it is likely that lots that have side and rear boundaries adjoining the reserves and pedestrian connections will unlikely contain fencing in the future.

Despite the design guidelines encouraging the absence of formal fencing particularly around public open space areas, all public reserves proposed are directly adjacent to public roads and are also located directly adjacent to the frontage of adjoining lots providing an activated and safe space. Bollards are proposed around the frontage of

Reserve A, and the footpath is re-directed through the reserve access tracks. All open spaces have frontage to a public road as well as private properties. The landscape design includes fencing guidelines for lots adjoining reserves.

All relevant above Standards are met as detailed.

Clause 56.04-5 - Common area objectives

To identify common areas and the purpose for which the area is commonly held.

To ensure the provision of common area is appropriate and that necessary management arrangements are in place.

To maintain direct public access throughout the neighbourhood street network.

Standard C11

An application to subdivide land that creates common land must be accompanied by a plan and a report identifying:

- The common area to be owned by the body corporate, including any streets and open space.
- The reasons why the area should be commonly held.
- Lots participating in the body corporate.
- The proposed management arrangements including maintenance standards for streets and open spaces to be commonly held.

Response – N/A

There are no common property areas within the proposed development. This Standard is not applicable.

URBAN LANDSCAPE

Clause 56.05-1 - Integrated urban landscape objectives

To provide attractive and continuous landscaping in streets and public open spaces that contribute to the character and identity of new neighbourhoods and urban places or to existing or preferred neighbourhood character in existing urban areas.

To incorporate natural and cultural features in the design of streets and public open space where appropriate.

To protect and enhance native habitat and discourage the planting and spread of noxious weeds. To provide for integrated water management systems and contribute to drinking water conservation.

Standard C12

An application for subdivision that creates streets or public open space should be accompanied by a landscape design.

Response – Objective Met

A draft landscape design for the reserves and streets of the subdivision has been developed in response to community feedback. The amended design provides for a substantial increase in tree canopy, as well as a mix of grass and vegetation in all reserves. Further refinement of landscape design will occur post permit.

All relevant above Standards are met as detailed, subject to any permit issued requiring the submission and approval of a landscaping plan as detailed in this section of the report.

Examples of this integration are evident in the two most recent greenfield subdivisions at Loch Ard Street and Callaway Court (see next page).

***TOP: North view of the pedestrian connection** to the subject land from Antares Estate*

***BOTTOM : South view of lightly vegetated public open space** through the Antares Estate towards the coastal foreshore*

Clause 56.05-2 Public open space provision objective

To provide a network of quality, well-distributed, multi-functional and cost-effective public open space that includes local parks, active open space, linear parks and trails, and links to regional open space.

To provide a network of public open space that caters for a broad range of users. To encourage healthy and active communities.

To provide adequate unencumbered land for public open space and integrate any encumbered land with the open space network.

To ensure land provided for public open space can be managed in an environmentally sustainable way and contributes to the development of sustainable neighbourhoods.

Standard C13

The provision of public open space should:

- Implement any relevant objective, policy, strategy or plan (including any growth area precinct structure plan) for open space set out in this scheme.
- Provide a network of well-distributed neighbourhood public open space that includes:
- Local parks within 400 metres safe walking distance of at least 95 percent of all dwellings. Where not designed to include active open space, local parks should be generally 1 hectare in area and suitably dimensioned and designed to provide for their intended use and to allow easy adaptation in response to changing community preferences.
- Additional small local parks or public squares in activity centres and higher density residential areas.
- Active open space of a least 8 hectares in area within 1 kilometre of 95 percent of all dwellings that is:
- Suitably dimensioned and designed to provide for the intended use, buffer areas around sporting fields and passive open space
- Sufficient to incorporate two football/cricket ovals
- Appropriate for the intended use in terms of quality and orientation
- Located on flat land (which can be cost effectively graded)
- Located with access to, or making provision for, a recycled or sustainable water supply
- Adjoin schools and other community facilities where practical
- Designed to achieve sharing of space between sports.
- Linear parks and trails along waterways, vegetation corridors and road reserves within 1 kilometre of 95 percent of all dwellings.

Public open space should:

- Be provided along foreshores, streams and permanent water bodies.
- Be linked to existing or proposed future public open spaces where appropriate.
- Be integrated with floodways and encumbered land that is accessible for public recreation.
- Be suitable for the intended use.
- Be of an area and dimensions to allow easy adaptation to different uses in response to changing community active and passive recreational preferences.
- Maximise passive surveillance.
- Be integrated with urban water management systems, waterways and other water bodies.
- Incorporate natural and cultural features where appropriate.

Response – Objective and Standard Met

All lots are within close walking distance of one of the three reserves on the proprety, as well as Irvine Reserve to the SE of the land, across Peterborough Road.

The public open space reserves and pedestrian connections are a system of linear parks and walking trails..

The reserves are also linked to pedestrian corridors that are also linked to the existing pedestrian network that links the subject land to the Ocean foreshore to the south and the central public open space areas of Peterborough.

All areas of public open space are capable of maintaining passive surveillance, subject to the surrounding lots being developed with appropriate orientation and low fencing where side and rear fences face the public open space areas.

There are some lots that are located directly opposite public open space areas that will provide a direct passive surveillance.

Both larger public open space areas are integrated with urban water management systems. All relevant above Standards are met as detailed.

ACCESS AND MOBILITY MANAGEMENT

Clause 56.06-2 - Walking and cycling network objectives

To contribute to community health and well being by encouraging walking and cycling as part of the daily lives of residents, employees and visitors.

To provide safe and direct movement through and between neighbourhoods by pedestrians and cyclists.

To reduce car use, greenhouse gas emissions and air pollution.

Standard C15

The walking and cycling network should be designed to:

- Implement any relevant regional and local walking and cycling strategy, plan or policy for the area set out in this scheme.
- Link to any existing pedestrian and cycling networks.
- Provide safe walkable distances to activity centres, community facilities, public transport stops and public open spaces.
- Provide an interconnected and continuous network of safe, efficient and convenient footpaths, shared paths, cycle paths and cycle lanes based primarily on the network of arterial roads, neighbourhood streets and regional public open spaces.
- Provide direct cycling routes for regional journeys to major activity centres, community facilities, public transport and other regional activities and for regional recreational cycling.
- Ensure safe street and road crossings including the provision of traffic controls where required.
- Provide an appropriate level of priority for pedestrians and cyclists.
- Have natural surveillance along streets and from abutting dwellings and be designed for personal safety and security particularly at night.
- Be accessible to people with disabilities.

Response – Objective and Standard Met

The proposed pedestrian connections are consistent with the PDG as shown at Figure 14.

The pedestrian connections provide directly to the south via the Antares Estate will provide access to the coastal foreshore and the main part of Peterborough at a distance of between 800m – 1km.

The grade of all pedestrian and cycling trails is at a gently grade to ensure accessibility for all.

All pedestrian connections are provided will be constructed with a priority for pedestrian and cycling traffic, while vehicular traffic will be limited in these zones at low speeds.

Pedestrian access directly to the east and then south is also possible via the proposed and existing footpath network. A substantial north/south footpath is located on the eastern side of the Old Peterborough. To ensure that pedestrian connections are maximized and additional pedestrian crossing is proposed through the Reserve and across Old Peterborough Road, in addition to the crossing at the estate entrance.

There are more than adequate sight lines either way along the road corridor and

PEDESTRIAN MOVEMENT PLAN *- proposal highly connected to surrounding area through interconnected footpath, pedestrian connection and public open space networks*

therefore represents a safe link to the pedestrian network, an addition, no vegetation removal is necessary to construct either footpath.

Clause 56.06-4 - Neighbourhood street network objective

To provide for direct, safe and easy movement through and between neighbourhoods for pedestrians, cyclists, public transport and other motor vehicles using the neighbourhood street network.

Standard C17

The neighbourhood street network must:

- Take account of the existing mobility network of arterial roads, neighbourhood streets, cycle paths, shared paths, footpaths and public transport routes.
- Provide clear physical distinctions between arterial roads and neighbourhood street types.

- Comply with the Head, Transport for Victoria's arterial road access management policies.
- Provide an appropriate speed environment and movement priority for the safe and easy movement of pedestrians and cyclists and for accessing public transport.
- Provide safe and efficient access to activity centres for commercial and freight vehicles.
- Provide safe and efficient access to all lots for service and emergency vehicles.
- Provide safe movement for all vehicles.
- Incorporate any necessary traffic control measures and traffic management infrastructure.

The neighbourhood street network should be designed to:

- Implement any relevant transport strategy, plan or policy for the area set out in this scheme.
- Include arterial roads at intervals of approximately 1.6 kilometres that have adequate reservation widths to accommodate long term movement demand.
- Include connector streets approximately halfway between arterial roads and provide adequate reservation widths to accommodate long term movement demand.
- Ensure connector streets align between neighbourhoods for direct and efficient movement of pedestrians, cyclists, public transport and other motor vehicles.
- Provide an interconnected and continuous network of streets within and between neighbourhoods for use by pedestrians, cyclists, public transport and other vehicles.
- Provide an appropriate level of local traffic dispersal.
- Indicate the appropriate street type.
- Provide a speed environment that is appropriate to the street type.
- Provide a street environment that appropriately manages movement demand (volume, type and mix of pedestrians, cyclists, public transport and other motor vehicles).
- Encourage appropriate and safe pedestrian, cyclist and driver behaviour.
- Provide safe sharing of access lanes and access places by pedestrians, cyclists and vehicles.
- Minimise the provision of cul-de-sac.

- Provide for service and emergency vehicles to safely turn at the end of a dead-end street.
- Facilitate solar orientation of lots.
- Facilitate the provision of the walking and cycling network, integrated water management systems, utilities and planting of trees.
- Contribute to the area's character and identity.
- Take account of any identified significant features.

Response – Objective and Standard Met

As it is relevant to the proposed subdivision, the above Standard has been met.

The new internal road, based on traffic estimates (530 vehicle movements per day) for the site detailed at Clause 56.06-8 (lot access objective) is classified as an Access Place and classified as an Access Street as detailed through the Infrastructure Design Manual (IDM).

The proposed access place network provides direct connection to the surrounding neighbourhood street network via Old Peterborough Road, which then connects at the intersection of the arterial road system (Great Ocean Road) 280 m south of the primary entrance intersection of the proposed subdivision.

The proposed speed through the new road network is expected to be a typical 50km per/hr vehicle movement to ensure that Australian Standards are being met.

The road network has been designed by the landowners Civil Engineering team at SITEC Engineering to comply with Australian Standards and the Infrastructure Design Manual (IDM) as detailed on the Functional Layout Plan (FLP).

The new road network has been designed to accommodate access to all lots for service and emergency vehicles. The proposed road network and intersection design has been reviewed by Traffic Engineers TTM Group and confirmation has been provided that the new intersections comply appropriately with standards.

The new road network road seal has been designed to:

- Comply with the IDM and AustRoads Standards following a traffic analysis by the proponents engineering team and as detailed on the FLP.
- Accommodate future road safety signage, as required by the road authority, traffic control measures necessary (signs/linemarking) will be constructed as part of the civil works for the proposal. It is expected that there will be typical vehicle safety signage and linemarking that will guide future traffic movement.
- Provide a safe and efficient road intersection with the Old Peterborough Road. There are generous available site lines in both directions at the proposed road intersection, providing an estimated 150m (south) and 215m (north), which in a 60km speed an hour zone will be able to meet the requirements of AustRoad Standards for the proposed intersection.

- At the proposed intersection it is also apparent that there are sufficient sight lines to provide for a safe and efficient pedestrian crossing to enable the linkage with the footpath on the eastern side of Old Peterborough Road.

Using an assumed number of 10 light vehicle movements/ house/day; there will be 530 vehicle movements entering and exiting the development each day to travel through the surrounding road network. It is expected that the predominant traffic from the development will travel south along Old Peterborough Road to travel to the CBD, boat ramp, Great Ocean Road tourist route and coastal foreshore. With more infrequent traffic generation being north where traffic might typically be travelling to other parts of the region.

The intersection has generous sight lines and an increase of 530 traffic movements per day will not require alterations to the intersection of Great Ocean Road and Old Peterborough Road as confirmed by Traffic Engineers TTM Group.

The integration of promoting walking and cycling connections, integrated water management systems, utilities (services) and the establishment of trees/landscaping and street trees have been suitably addressed, by:

- Opportunity to add multiple new pedestrian connections to the west, south and east, with a shared one way road provided to the north, should the town expand in the future;
- The road is a safe and efficient shared road space for both vehicles and pedestrians;
- WSUD design devices (sedimentation and detention basins) within each catchment reserve, including landscape plantings on reserves, pedestrian connections and street trees provide for multi-factor onsite integrated water management; and
- The lot capacity analysis provided in this report demonstrates that each lot can provide for future built form and landscaping areas on individual lots. New/additional indigenous street tree plantings are proposed, with a formal landscaping plan being submitted as a condition of any permit issued as already detailed.

Clause 56.06-5 - Walking and cycling network detail objectives

To design and construct footpaths, shared path and cycle path networks that are safe, comfortable, well constructed and accessible for people with disabilities.

To design footpaths to accommodate wheelchairs, prams, scooters and other footpath bound vehicles.

Standard C18

- Footpaths, shared paths, cycle paths and cycle lanes should be designed to:Be part of a comprehensive design of the road or street reservation.

- Be continuous and connect.
- Provide for public transport stops, street crossings for pedestrians and cyclists and kerb crossovers for access to lots.
- Accommodate projected user volumes and mix.
- Meet the requirements of Table C1.
- Provide pavement edge, kerb, channel and crossover details that support safe travel for pedestrians, footpath bound vehicles and cyclists, perform required drainage functions and are structurally sound.
- Provide appropriate signage.
- Be constructed to allow access to lots without damage to the footpath or shared path surfaces.
- Be constructed with a durable, non-skid surface.
- Be of a quality and durability to ensure:
    - Safe passage for pedestrians, cyclists, footpath bound vehicles and vehicles.
    - Discharge of urban run-off.
    - Preservation of all-weather access.
    - Maintenance of a reasonable, comfortable riding quality.
    - A minimum 20 year life span.
- Be accessible to people with disabilities and include tactile ground surface indicators, audible signals and kerb ramps required for the movement of people with disabilities.

Response – Objective and Standard Met

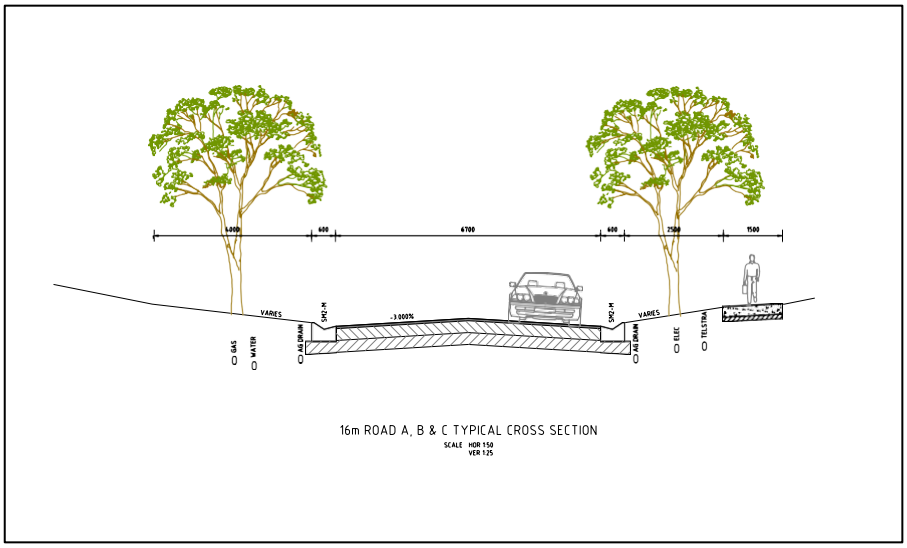
As already detailed, the access place has been designed to comply with AustRoads Standards and the IDM.

It is also important to note that the road and pedestrian network are consistent with the PDG through the use of grassed verges, paved vehicle crossovers, rollover kerbs and footpaths (Overarching Guidelines – page 3 of the PDG). This ensures that the development is consistent with the neighbourhood character established by the more recent greenfield subdivisions completed to the south and west of the site.

A section plan (Figure 27) of the proposed road and pedestrian network is provided in the SWMP detailing road seal construction that also addresses urban run-off in its design.

As already detailed, a pedestrian network connection to the existing footpath in the Old Peterborough Road at the north and south ends of the development is proposed by the landowner to integrate the site better with the existing pedestrian network on

the east side of Old Peterborough Road.



TYPICAL SECTION PLAN *for proposed road and pedestrian network*

It is not proposed that a separate footpath needs to be extended south along the western side of the Old Peterborough Road.

Clause 56.06-6 – Public transport network detail objectives

To provide for the safe, efficient operation of public transport and the comfort and convenience of public transport users.

To provide public transport stops that are accessible to people with disabilities.

Standard C19

Bus priority measures must be provided along arterial roads forming part of the existing or proposed Principal Public Transport Network in Metropolitan Melbourne and the regional public transport network outside Metropolitan Melbourne to the requirements of the relevant roads authority.

Road alignment and geometry along bus routes should provide for the efficient, unimpeded movement of buses and the safety and comfort of passengers.

The design of public transport stops should not impede the movement of pedestrians. Bus and tram stops should have:

- Surveillance from streets and adjacent lots.
- Safe street crossing conditions for pedestrians and cyclists.
- Safe pedestrian crossings on arterial roads and at schools including the provision of traffic controls as required by the roads authority.
- Continuous hard pavement from the footpath to the kerb.
- Sufficient lighting and paved, sheltered waiting areas for forecast user volume at neighbourhood centres, schools and other locations with

expected high patronage.

- Appropriate signage.

Public transport stops and associated waiting areas should be accessible to people with disabilities and include tactile ground surface indicators, audible signals and kerb ramps required for the movement of people with physical disabilities.

Response – Not applicable

The proposed road and Old Peterborough Road are not arterial road; therefore this Standard is not applicable.

There is a single bus stop provided in the township that serves an existing route along the Great Ocean Road as the main arterial road through the region.

Clause 56.06-7 - Neighbourhood street network detail objective

To design and construct street carriageways and verges so that the street geometry and traffic speeds provide an accessible and safe neighbourhood street system for all users.

Standard C20

The design of streets and roads should:

- Meet the requirements of Table C1. Where the widths of access lanes, access places, and access streets do not comply with the requirements of Table C1, the requirements of the relevant fire authority and roads authority must be met.
- Provide street blocks that are generally between 120 metres and 240 metres in length and generally between 60 metres to 120 metres in width to facilitate pedestrian movement and control traffic speed.
- Have verges of sufficient width to accommodate footpaths, shared paths, cycle paths, integrated water management, street tree planting, lighting and utility needs.
- Have street geometry appropriate to the street type and function, the physical land characteristics and achieve a safe environment for all users.
- Provide a low-speed environment while allowing all road users to proceed without unreasonable inconvenience or delay.
- Provide a safe environment for all street users applying speed control measures where appropriate.
- Ensure intersection layouts clearly indicate the travel path and priority of movement for pedestrians, cyclists and vehicles.
- Provide a minimum 5 metre by 5 metre corner splay at junctions with arterial roads and a minimum 3 metre by 3 metre corner splay at other junctions unless site conditions justify a variation to achieve safe sight lines across

corners.

- Ensure streets are of sufficient strength to:
  - Enable the carriage of vehicles.
  - Avoid damage by construction vehicles and equipment.
- Ensure street pavements are of sufficient quality and durability for the:
  - Safe passage of pedestrians, cyclists and vehicles.
  - Discharge of urban run-off.
  - Preservation of all-weather access and maintenance of a reasonable, comfortable riding quality.
- Ensure carriageways of planned arterial roads are designed to the requirements of the relevant road authority.
- Ensure carriageways of neighbourhood streets are designed for a minimum 20 year life span.
- Provide pavement edges, kerbs, channel and crossover details designed to:
  - Perform the required integrated water management functions.
  - Delineate the edge of the carriageway for all street users.
  - Provide efficient and comfortable access to abutting lots at appropriate locations.
  - Contribute to streetscape design.
- Provide for the safe and efficient collection of waste and recycling materials from lots.
- Be accessible to people with disabilities.
- Meet the requirements of Table C1. Where the widths of access lanes, access places, and access streets do not comply with the requirements of Table C1, the requirements of the relevant fire authority and roads authority must be met. Where the widths of connector streets do not comply with the requirements of Table C1, the requirements of the relevant public transport authority must be met.

A street detail plan should be prepared that shows, as appropriate:

- The street hierarchy and typical cross-sections for all street types.
- Location of carriageway pavement, parking, bus stops, kerbs, crossovers, footpaths, tactile surface indicators, cycle paths and speed control and traffic management devices.
- Water sensitive urban design features.
- Location and species of proposed street trees and other vegetation.

- Location of existing vegetation to be retained and proposed treatment to ensure its health.
- Any relevant details for the design and location of street furniture, lighting, seats, bus stops, telephone boxes and mailboxes.

Response – Objective and Standard Met

Table C1 contents classifies/requires the proposed road as an Access Place, which the geometry of the road would easily meet the requirements of Table C1.

The proposed road has been modelled on an access street on the basis that the IDM requirements are a higher standard of requirement to that of this Clause, therefore the proposed road design in fact exceeds the design standards for an Access Place with the dimensions detailed on the FLP.

The proposed street blocks are at least 72m in width.

The proposed street blocks are at least 140m in length. Both these distances are at the lower end of the recommended ranges for pedestrian safety.

Each of the proposed roads have verges that provide for a footpath on one side of each road, integrate water management, street planting, lighting and services needs

As already detailed, the proposed road exceeds the requirements for an Access Lane.

Given that the road network does not act as a collector road, all speed limits will be 50km per/hr as is typical for local residential streets.

The proposed road network does not adjoin an arterial road. Therefore, each of the internal roads have been designed with a splay of 4m, which meets this Standard of 3m.

The main road intersection has been modelled on Loch Ard Street and Callaway Court through the use of an intersection treatment with a 90 degree angle to Old Peterborough Road with at least a 6m splay, which meets this Standard.

The typical section details concept road construction layers with all roads being constructed in accordance with the IDM requirements and standards.

Clause 56.06-8 - Lot access objective

To provide for safe vehicle access between roads and lots.

Standard C21

Vehicle access to lots abutting arterial roads should be provided from service roads, side or rear access lanes, access places or access streets where appropriate and in accordance with the access management requirements of the relevant roads authority.

Vehicle access to lots of 300 square metres or less in area and lots with a frontage of 7.5 metres or less should be provided via rear or side access lanes, places or streets.

The design and construction of a crossover should meet the requirements of the

relevant road authority.

Table C1 Design of roads and neighbourhood streets - Access Street

A street providing local residential access where traffic is subservient, speed and volume are low and pedestrian and bicycle movements are facilitated	
Traffic volume[1]	1000vpd to 2000vpd
Kerbing[5]	Semi-mountable rollover or flush and swale or other water sensitive urban design treatment area.
Footpath provision	1.5m wide footpaths on both sides.
Target speed[2]	30kph Footpaths should be widened to 2.0m in vicinity of a school, shop or other activity centre.
Carriageway width[3] **& parking provision within street reservation**	5.5m[6] wide with 1 hard standing verge parking space per 2 lots. Be offset a minimum distance of 1m from the kerb.
Cycle path provision	None
Verge width[4]	4m minimum each side

Response – Objective and Standard Met

As detailed on the FLP, the proposal is able to meet the access street design standards, despite the standards applying to a development that generates an average vehicle numbers of 540 per day only requiring that the applicable design standards would be for an access place.

The development exceeds the Standards.

INTEGRATED WATER MANAGEMENT

Clause 56.07-1 - Drinking water supply objectives

To reduce the use of drinking water.

To provide an adequate, cost-effective supply of drinking water.

Standard C22

The supply of drinking water must be:

- Designed and constructed in accordance with the requirements and to the satisfaction of the relevant water authority.
- Provided to the boundary of all lots in the subdivision to the satisfaction of the relevant water authority.

Response – Objective and Standard Met

All lots as detailed in the Concept Servicing Plan and functional layout plan can be connected to the existing reticulated water supply.

Each lot will be provided with a connection at the boundary to each lot.

Clause 56.07-2 - Reused and recycled water objective

To provide for the substitution of drinking water for non-drinking purposes with reused and recycled water.

Response – Not applicable

Recycled water is not available in this location.

Clause 56.07-3 - Waste water management objective

To provide a waste water system that is adequate for the maintenance of public health and the management of effluent in an environmentally friendly manner.

Standard C24

Waste water systems must be:

- Designed, constructed and managed in accordance with the requirements and to the satisfaction of the relevant water authority and the Environment Protection Authority.
- Consistent with a domestic waste water management plan adopted by the relevant council.

Reticulated waste water systems must be provided to the boundary of all lots in the subdivision where required by the relevant water authority.

Response – Objective and Standard Met

The engineering services report (ESR) details that all lots can be connected to the existing reticulated waste water system with additions to the existing system as detailed.

Clause 56.07-4 - Stormwater management objectives

To minimise damage to properties and inconvenience to residents from stormwater.

To ensure that the street operates adequately during major storm events and provides for public safety.

To minimise increases in stormwater and protect the environmental values and physical characteristics of receiving waters from degradation by stormwater.

To encourage stormwater management that maximises the retention and reuse of stormwater.

To encourage stormwater management that contributes to cooling, local habitat improvements and provision of attractive and enjoyable spaces.

Standard C25

The stormwater management system must be:

- Designed and managed in accordance with the requirements and to the

satisfaction of the relevant drainage authority.

- Designed and managed in accordance with the requirements and to the satisfaction of the water authority where reuse of stormwater is proposed.
- Designed to meet the current best practice performance objectives for stormwater quality as contained in the *Urban Stormwater - Best Practice Environmental Management Guidelines* (Victorian Stormwater Committee, 1999).
- Designed to ensure that flows downstream of the subdivision site are restricted to pre- development levels unless increased flows are approved by the relevant drainage authority and there are no detrimental downstream impacts.
- Designed to contribute to cooling, improving local habitat and providing attractive and enjoyable spaces.
- The stormwater management system should be integrated with the overall development plan including the street and public open space networks and landscape design.
- For all storm events up to and including the 20% Average Exceedance Probability (AEP) standard:
- Stormwater flows should be contained within the drainage system to the requirements of the relevant authority.
- Ponding on roads should not occur for longer than 1 hour after the cessation of rainfall. For storm events greater than 20% AEP and up to and including 1% AEP standard:
    - Provision must be made for the safe and effective passage of stormwater flows.
    - All new lots should be free from inundation or to a lesser standard of flood protection where agreed by the relevant floodplain management authority.
    - Ensure that streets, footpaths and cycle paths that are subject to flooding meet the safety criteria $d_a V_{ave} < 0.35\ m^2/s$ (where, d_a = average depth in metres and V_{ave} = average velocity in metres per second).

The design of the local drainage network should:

- Ensure stormwater is retarded to a standard required by the responsible drainage authority.
- Ensure every lot is provided with drainage to a standard acceptable to the relevant drainage authority. Wherever possible, stormwater should be directed to the front of the lot and discharged into the street drainage system

or legal point of discharge.

- Ensure that inlet and outlet structures take into account the effects of obstructions and debris build up. Any surcharge drainage pit should discharge into an overland flow in a safe and predetermined manner.
- Include water sensitive urban design features to manage stormwater in streets and public open space. Where such features are provided, an application must describe maintenance responsibilities, requirements and costs.

Response – Objective and Standard Met

The proposed stormwater system meets the objectives for stormwater quality as contained in the *Urban Stormwater - Best Practice Environmental Management Guidelines* (Victorian Stormwater Committee, 1999) as detailed in the SWMP.

The proposed stormwater management system has been designed to retain a 20% AEP event onsite, which meets this Standard.

The SWMP has modelled for a 1% AEP storm event to be accommodated in the road network as is typical for other subdivisions, with the flow path shown in Figure 24 above.

The proposed WSUD features of the stormwater design are located in the two reserves and consist of a sediment basin and retention basin that will filter the stormwater to the correct percentage reduction as required by State Planning Policy.

All WSUD basins are proposed to be located within public open space areas

SITE MANAGEMENT

Clause 56.08-1 - Site management objectives

To protect drainage infrastructure and receiving waters from sedimentation and contamination.

To protect the site and surrounding area from environmental degradation or nuisance prior to and during construction of subdivision works.

To encourage the re-use of materials from the site and recycled materials in the construction of subdivisions where practicable.

Standard C26

A subdivision application must describe how the site will be managed prior to and during the construction period and may set out requirements for managing:

- Erosion and sediment.
- Dust.
- Run-off.

- Litter, concrete and other construction wastes.
- Chemical contamination.
- Vegetation and natural features planned for retention.

Recycled material should be used for the construction of streets, shared paths and other infrastructure where practicable.

Response – Objective and Standard Met

In the event that a permit is granted it is reasonably required that a construction management plan is prepared to manage the civil works to meet best practice construction standards.

There is sufficient area onsite to undertake civil works within the curtilage of the land. Where necessary, a traffic management plan may also be reasonably required as a condition of any permit, to ensure that the site management is undertaken to meet amenity expectations.

UTILITIES

Clause 56.09-1 - Shared trenching objectives

To maximise the opportunities for shared trenching.

To minimise constraints on landscaping within street reserves.

Standard C27

Reticulated services for water, gas, electricity and telecommunications should be provided in shared trenching to minimise construction costs and land allocation for underground services.

Response – Objective and Standard Met

As detailed in the engineering functional layout plan and road section plan, shared trenching opportunities have been used where possible.

Clause 56.09-2 - Electricity, telecommunications and gas objectives

To provide public utilities to each lot in a timely, efficient and cost effective manner.

To reduce greenhouse gas emissions by supporting generation and use of electricity from renewable sources.

Standard C28

The electricity supply system must be designed in accordance with the requirements of the relevant electricity supply agency and be provided to the boundary of all lots in the subdivision to the satisfaction of the relevant electricity authority.

Arrangements that support the generation or use of renewable energy at a lot or neighbourhood level are encouraged.

The telecommunication system must be designed in accordance with the requirements of the relevant telecommunications servicing agency and should be consistent with any approved strategy, policy or plan for the provision of advanced telecommunications infrastructure, including fibre optic technology. The telecommunications system must be provided to the boundary of all lots in the subdivision to the satisfaction of the relevant telecommunications servicing authority.

Where proposed to be connected, a reticulated gas supply system must be designed in accordance with the requirements of the relevant gas supply agency.

Response – Objective and Standard Met

All lots have been supplied with connection to all available services as detailed on the functional layout plan.

Clause 56.09-3 - Fire hydrants objective

To provide fire hydrants and fire plugs in positions that enable fire fighters to access water safely, effectively and efficiently.

Standard C29

Fire hydrants should be provided:

- A maximum distance of 120 metres from the rear of each lot.
- No more than 200 metres apart.

Hydrants and fire plugs must be compatible with the relevant fire service equipment. Where the provision of fire hydrants and fire plugs does not comply with the requirements of standard C29, fire hydrants must be provided to the satisfaction of the relevant fire authority.

Response – Objective and Standard Met

The rear of all lots are within 120m of the surrounding street network and no more than 200m apart including the new hydrant network installed as part of the subdivision.

Clause 56.09-4 - Public lighting objective

To provide public lighting to ensure the safety of pedestrians, cyclists and vehicles. To provide pedestrians with a sense of personal safety at night.

To contribute to reducing greenhouse gas emissions and to saving energy.

Standard C30

Public lighting should be provided to streets, footpaths, public telephones, public transport stops and to major pedestrian and cycle paths including public open spaces that are likely to be well used at night to assist in providing safe passage for pedestrians, cyclists and vehicles.

Public lighting should be designed in accordance with the relevant Australian Standards.

Public lighting should be consistent with any strategy, policy or plan for the use of renewable energy and energy efficient fittings.

Response – Objective and Standard Met

Lighting in the street will be provided as required and designed at detail design stage for the access place.