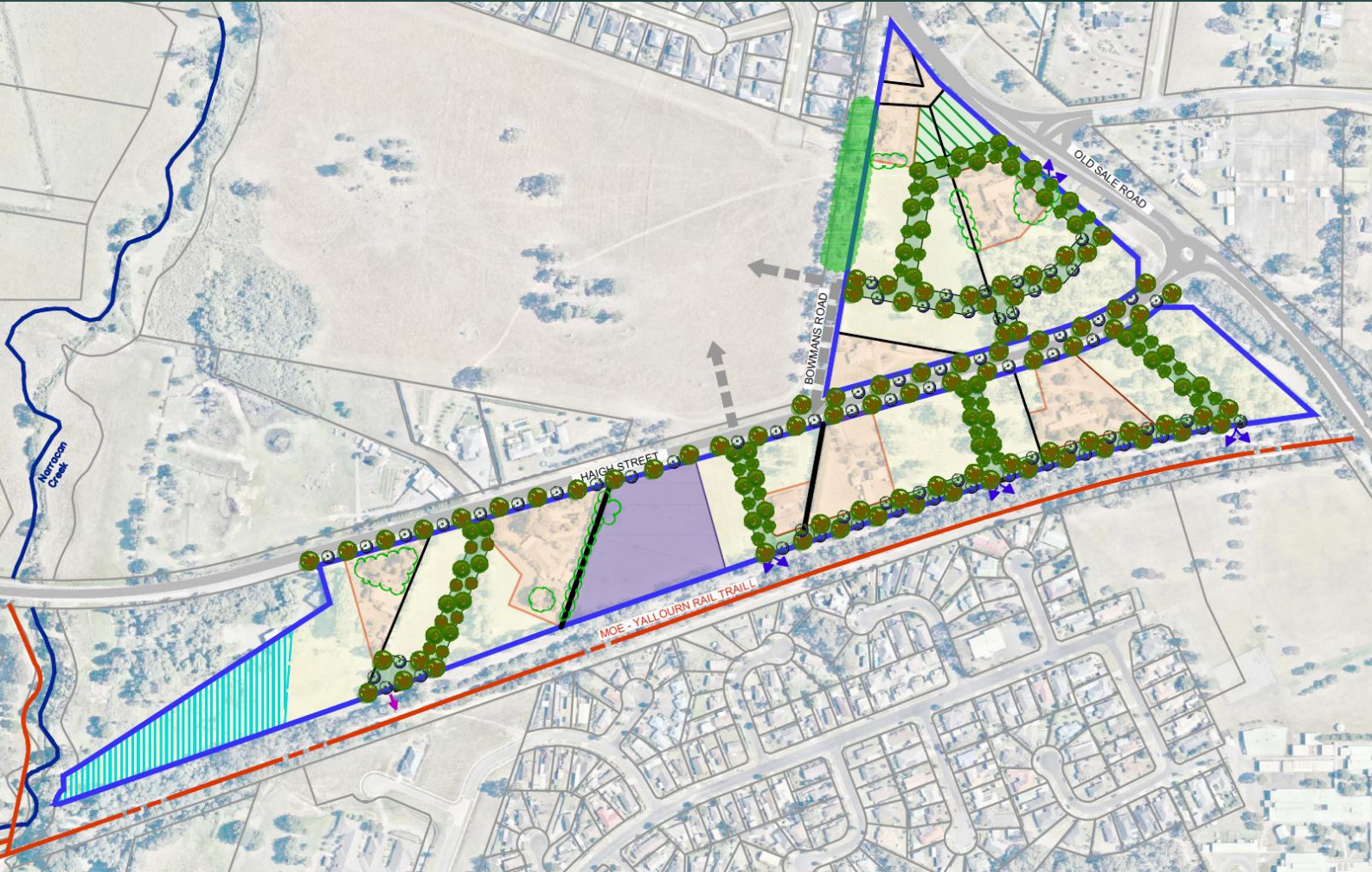


HAIGH STREET DEVELOPMENT PLAN



Prepared by NBA Group Pty Ltd
May 2017



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- Appendix 4 - Preliminary Stormwater Management Strategy
- Appendix 5 - Traffic Impact Assessment Report
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- Appendix 7 - Haigh Street Development Plan (DP2)
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- Appendix 12 - Staging Plan (DP7)
- Appendix 13 - Implementation Plan (DP8)

1 Introduction

This Development Plan applies to land referred to as 'Haigh Street' and covers an area of approximately 14.93 hectares. The land is situated on the eastern periphery of the Township of Moe as shown in Figure 1 below.

The land is zoned General Residential Zone – Schedule 1 (GRZ1) and covered by a Development Plan Overlay - Schedule 5 (DPO5). The Development Plan Overlay is a planning tool used to guide future development of land. It is commonly used in areas where land is controlled by multiple land owners and an integrated development outcome is required.

The Department of Planning and Community Development (the 'DPCD' – now 'DELWP') outline the purpose of the DPO as follows:

The DPO prevents the granting of permits under the zone before the Development Plan has been approved. The purpose of this provision is to restrain use and development of the land until a plan has been prepared and ensure that future use and development of the land is carried out in accordance with that plan. The Development Plan details the form and conditions that must be met by future use and development of the land.

The Haigh Street Development Plan (the 'HSDP') has been prepared in accordance with Schedule 5 of the DPO. It provides guidance for development across ten allotments in separate ownership and will ensure a cohesive and integrated development.

The Development Plan identifies where roads, reserves and physical infrastructure should be located. The HSDP has been prepared in consultation with Council Officers and is based on best practice urban design principles, it is responsive to site conditions including topography, drainage, vegetation, abuttal to neighbouring uses and site opportunities and constraints.

There are two major components that comprise the Development Plan:

- **The Plan** – depicting a broad urban layout including lot layout, road network, location of reserves and stormwater treatment; and
- **The Report** – providing context for the preparation of the Development Plan, summarising existing site conditions, analysing key opportunities and constraints and describing the plan and its implementation.

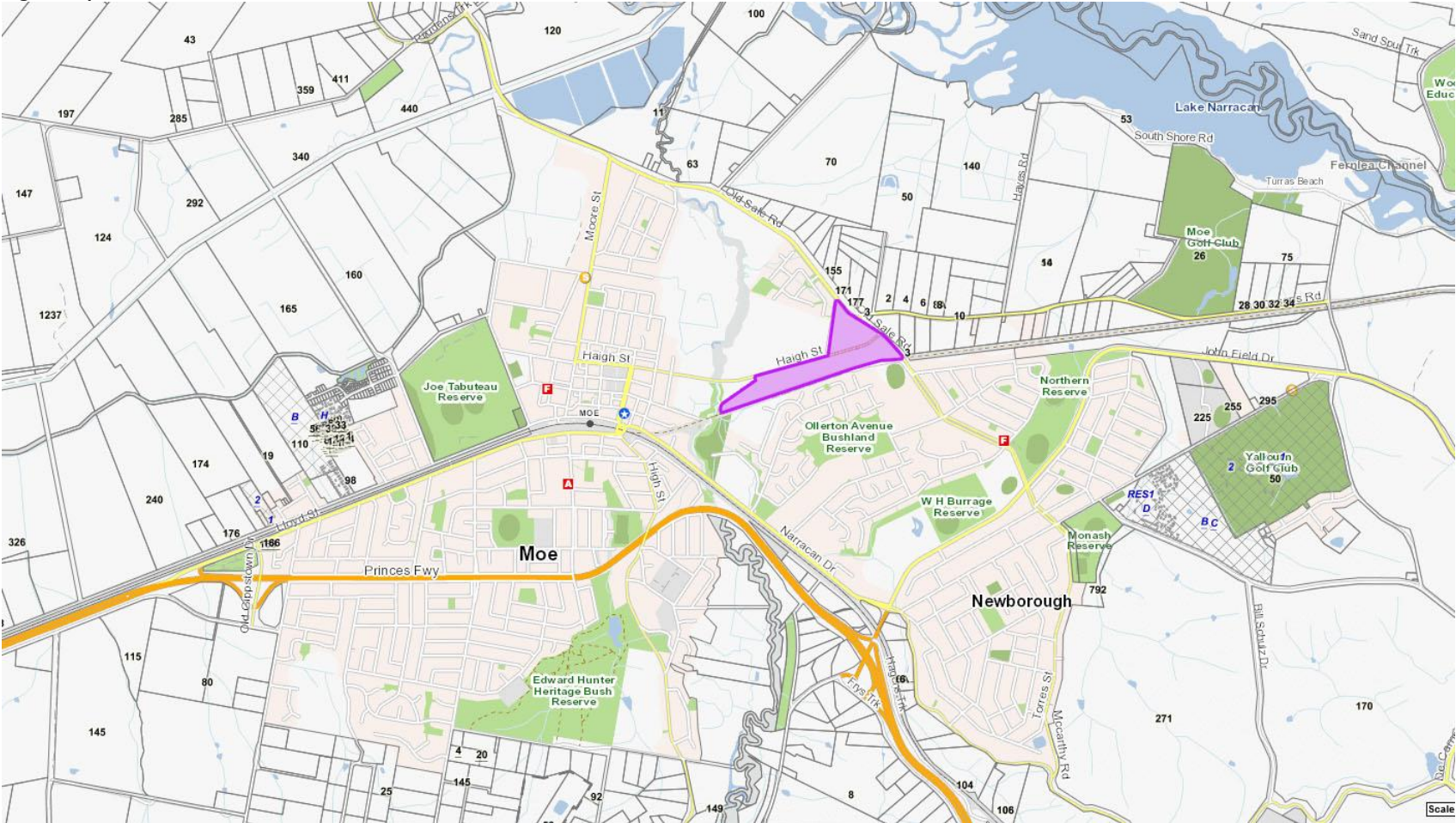
These two documents should be considered in conjunction with each other.

The Development Plan has been prepared following the preparation of several investigative reports and assessments including:

- **Infrastructure Servicing Report** – an assessment of available infrastructure and its ability to service the proposed development, prepared by Millar Merrigan, March 2017;
- **Traffic Impact Assessment** – an assessment of the surrounding road network and its ability to accommodate the proposed development, prepared by O'Brien Traffic, August 2016;
- **Ecological Assessment** – an assessment of the ecological features of the site, prepared by Millar Merrigan, May 2017; and
- **Preliminary Stormwater Management Statement** – an assessment of the drainage conditions on site and post development, prepared by Millar Merrigan, May 2017.

These reports can be found within the attached Appendices.

Figure 1 | Context Plan



2 Site & Context Analysis

The following provides a board description of the site and surrounding context.

2.1 Local Context

The Haigh Street Development Plan applies to land on the eastern periphery of the Township of Moe.

Moe is a 'main town' as identified within the Latrobe Planning Scheme and is situated approximately 140kms southeast of Melbourne. Abutting Newborough, together Moe and Newborough create one urban settlement with an estimated population of approximately 16,000 in 2014. The urban area is nestled within a valley with rolling hills situated to the south and views of Mount Baw Baw available to the north.

In the last decade, Latrobe City Council have undertaken strategic projects to plan and manage growth and change within the municipality over a 30-year period. The *Moe/Newborough Structure Plan (2015)* has been incorporated into the planning scheme and provides clear direction to the community, government and the development industry about appropriate development for the township. The plan includes the subject land as 'Area 10' which is identified as 'existing residential opportunity'.

The structure plan identifies a short supply of land available for residential development with approximately 8 years supply of land for future residential development. It identifies the subject site as underutilized residentially zoned land that should be developed in consideration of the Narracan Creek and its flood zone area.

Figure 2 | Extract of Moe/Newborough Structure Plan (Site outlined in red)



2.2 Site Description

The HSDP applies to ten parcels of land with an area of approximately 14.93 hectares. The lots are identified in Table 1 below with the property ID's corresponding to the labels identified on the site analysis plan at Appendix 2. Certificates of Title for the subject properties are contained within Appendix 1.

It should be noted that properties 7 and 10 are burdened by Section 173 Agreement AE755418U, a copy of which is also included in Appendix 1. The Agreement prohibits any further subdivision of the affected properties and was put in place prior to the land being rezoned for residential purposes and is obviously now outdated. The future development of these two properties will require the removal of the Agreement at the planning permit stage with costs borne by the subject developer.

Table 1 | Lots included within the HSDP

ID	Address	Formal Description
1	15 Haigh Street, Newborough	Lot 1 TP103681
2	30 Haigh Street, Newborough	Lot 1 TP654378
3	35 Haigh Street, Newborough	Lot 1 LP138270
4	37 Haigh Street, Newborough	CP169051
5	57 Haigh Street, Newborough	Lot 3 LP204971
6	73 Haigh Street, Newborough	Lot 2 LP204971
7	7 Bowmans Road, Newborough	Lot 1 PS528688
8	11 Bowmans Road, Newborough	Lot 1 TP910780
9	174-176 Old Sale Road, Newborough	Lot 1 LP29262
10	178-202 Old Sale Road, Newborough	Lot 2 PS528688

As shown in the aerial photograph at Figure 3, the subject site is in two parts, dissected by Haigh Street. From here on in, land on the southern side of Haigh Street shall be referred to as the 'southern portion' and land on the northern side of Haigh Street shall be referred to as the 'northern portion'.

The majority of the site is made up of pasture grass that is grazed by stock. The individual titles are typically utilised for rural living with most containing existing dwellings and associated services.

Image 1 | Grazing land with dwellings scattered through the DP area

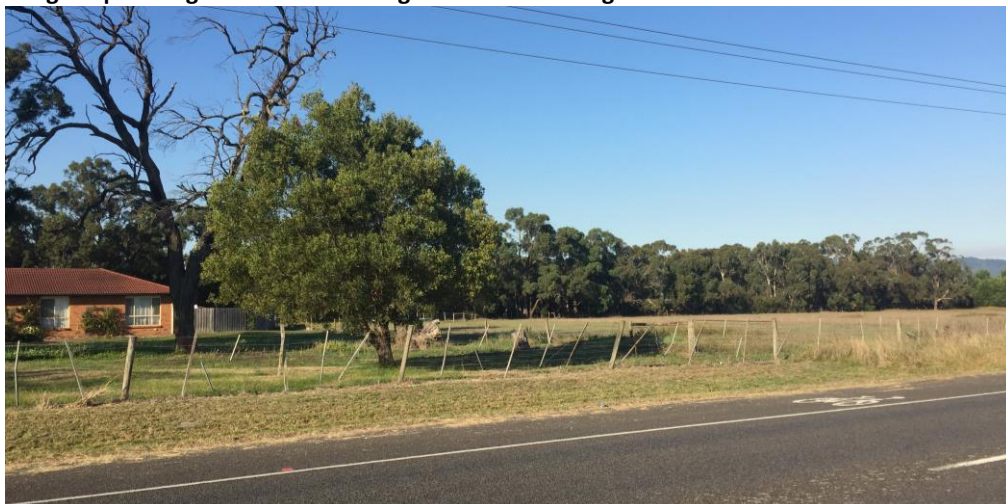
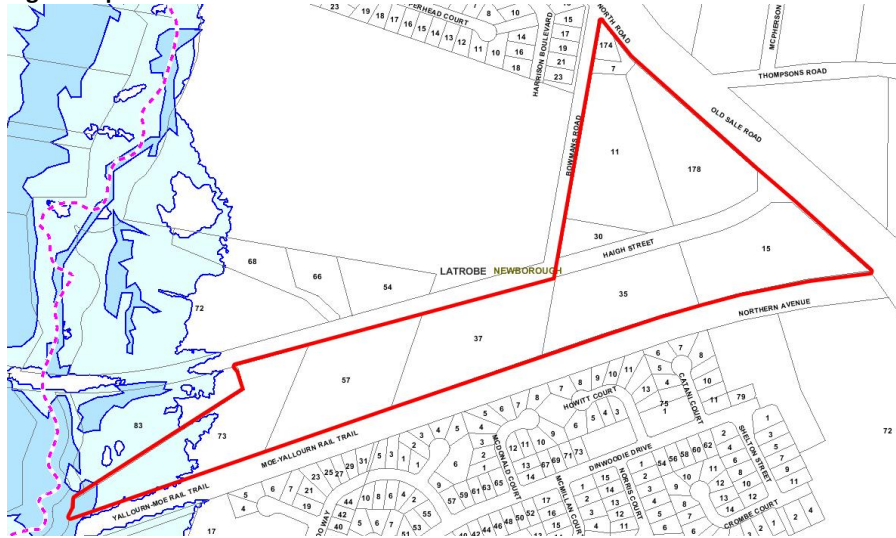


Figure 3 | Aerial photograph of site



The topography of the land is fairly flat, falling gently towards the Narracan Creek. There are no registered waterways located within the site however the most western portion of the site is subject to flooding from the adjacent Creek. The extent of the Land Subject to Inundation Overlay (LSIO) is shown light blue whilst the extent of the Flooding Overlay (FO) shown dark blue in Figure 4 below.

Figure 4 | Extent of LSIO and FO



The majority of the Development Plan area has been subjected to past agricultural practices and as such the site is highly modified. Vegetation throughout the development plan area includes trees scattered across individual titles (such as planted manicured gardens surrounding dwellings and scattered native trees), and two large patches of native vegetation situated within property ID's 1 and 10, abutting Old Sale Road. The significance of vegetation on site is discussed further in Section 3.6 below.

Image 2 | Patch of heavy vegetation within property ID 10



Part of the HSDP area is contained within an area of Aboriginal Cultural Heritage Sensitivity as shown in Figure 5 below. The design of the HSDP addresses the sensitive land by limiting ground disturbance within this area. Detailed cultural heritage investigations should be carried out on the affected property at the subdivision stage to determine the significance of the land prior to the development of the affected area.

Figure 5 | Aboriginal Cultural Heritage Sensitivity



As identified on the Title Plans at Appendix 1 and the Site Analysis Plan at Appendix 2, some easements exist throughout the DP area for the purpose of drainage and water supply. Of particular significance is a drainage easement that affects property ID 6 and generally corresponds with the land that is subject to flooding. This flood prone area is discussed in further detail at section 3.2 below.

A detailed analysis of site conditions is provided in Section 3 below and on the Site Analysis Plan (19999 DP1) at Appendix 2.

2.3 Adjoining Land Uses

South

The southern portion of the site has abuttal to the Moe-Yallourn Rail Trail to the south with a typical residential estate (GRZ) situated further south.

The residential estate comprises allotments of approximately 500-700sqm developed with single dwellings and associated services. The estate has been designed around the Ollerton Avenue Bush Reserve, a substantial centrally located reserve containing a dense coverage of native vegetation.

Image 3 | Character of abutting residential estate



The Rail Trail contains a gravel walking and cycling path within a lineal vegetated reserve that links to the town centre of Moe to the west, and Yallourn to the east. It is noted that the Rail Trail sits some 2-3m lower than the subject site and contains a bridge crossing the Narracan Creek in the Moe Botanical Gardens as pictured below.

Image 4 | Rail Trail



West

The northern portion of the site abuts Bowmans Road to the west, with residentially zoned land located further west of Bowmans Road. Near the site, Bowmans Road is unconstructed and contains scattered native vegetation.

Image 5 | Looking north up unconstructed Bowmans Road containing vegetation



The residential land adjacent to Haigh Street is undeveloped and comprises of cleared pasture grass that is grazed by stock with a few dwellings occupying large lots. This area of land is identified within the Structure Plan as existing residential.

Image 6 | Undeveloped residential land west of Bowmans Road



The western-most title of the southern portion of the site has abuttal to Narracan Creek to the west, which leads to the Moe Botanic Gardens. This land is affected by the Land Subject to Inundation Overlay (LSIO) and Flood Overlay (FO) as mentioned earlier in Figure 4.

Image 7 | Narracan Creek contained within Moe Botanic Gardens



East

The entire HSDP area abuts Old Sale Road to the east with part of Old Sale Road being contained within a Road Zone Category 1 (RDZ1) managed by VicRoads and the remainder a local road managed by Latrobe City Council. See section 3.3 below for further discussion regarding Old Sale Road.

Further east of Old Sale Road is the Lake Narracan Precinct, which is earmarked for future residential development with new community, retail and education facilities proposed throughout. A Precinct Structure Plan has been incorporated into the planning scheme for this land and it is understood subdivision applications for some of the land are under consideration by Latrobe City Council.

North

The HSDP abuts Old Sale Road to the north. A residential estate is available to the north west and is contained within the Neighbourhood Residential Zone. The lots are typically 500-800sqm in area and contain recently constructed single storey dwellings and associated services.

3 Detailed Site Assessments

The HSDP has been informed by extensive background investigations and reports which can be summarised as follows:

3.1 Infrastructure Servicing

An Infrastructure Servicing Report has been prepared by Millar Merrigan (March 2017) and provides an assessment of the infrastructure available within the area and its ability to service the Development Plan area. The report is included as Appendix 3 and provides the following summary of existing conditions:

Topography

The subject area falls gradually north-west towards Narracan Creek. The Rail Trail, which is located along the southern boundary of the site, sits approximately 2 to 3 metres below the Development Plan area.

Sewerage

No reticulated sewerage exists within the Development Plan area. Gippsland Water assets service lots directly to the south of the rail trail and the existing Montane Park Estate to the north west.

Reticulated Water

Reticulated water is available within Haigh Street and Old Sale Road. There are no anticipated issues with regard to supply.

Electricity

Existing assets under the control of AusNet services run along the southern side of Haigh Street and Old Sale Road. There are no anticipated issues with regards to supply however formal application will be required at the time of subdivision to ascertain what, if any, augmentation will be required.

Gas

There are existing assets delivering natural gas within Old Sale Road. At the time of subdivision, APA Group will determine whether it is viable to deliver services to the Development Plan area. These works, to extend the existing network, may require a contribution from the developer.

Telecommunications

Telecommunications is currently transitioning from copper wire to broadband technology. In the event that FTTP is not available, Telstra will be able to provide traditional copper service. Telstra have major infrastructure in Thompson and Old Sale Roads that may require extension to service the Development Plan Area.

For further details regarding existing services, see the Infrastructure Servicing Report at Appendix 3.

3.2 Stormwater

A Preliminary Stormwater Management Statement has been prepared by Millar Merrigan (May 2017) and describes the existing drainage conditions of the Development Plan area. It notes the following in regards to existing conditions:

- *The subject area falls gradually north-west towards Narracan Creek. There is no formal drainage within the Development Plan area with properties serviced by rural table drains within Haigh Street and Old Sale Road.*
- *An LSIO and FO currently extends over one of the properties within the Development Plan area (property id 6). The area of land affected by the LSIO and FO is constrained for development purposes.*

For further details regarding existing drainage conditions see the Preliminary Stormwater Management Statement at Appendix 4.

3.3 Existing Road Network

The Development Plan area has abuttal to the following roads which have been described in the Traffic Impact Assessment prepared by O'Brien Traffic and attached at Appendix 5:

- Haigh Street;
- Old Sale Road – RDZ1; and
- Old Sale Rd Thompsons roundabout upgrade.

According to the Traffic Report by O'Brien Traffic, all of the roads bordering the subject site have an excellent safety record, with the exception of three minor accidents at the intersection of Haigh Street and Old Sale Road, however this is planned for future modification under the Lake Narracan PSP.

3.3.1 Haigh Street

Haigh Street is designated as a "Link" (arterial) road in the Latrobe City Council Public Road Register between Anzac Street and Old Sale Road, with this section under Council's care and management. The section from Moore Street to Anzac Street, approximately 1km west of the subject site, is under VicRoads' control.

In the vicinity of the subject site, Haigh Street is an undivided road consisting of one 3.7m wide (approx.) sealed traffic lane in each direction plus sealed shoulders (marked as bicycle lanes) on both sides. The posted speed limit is 80km/h.

3.3.2 Old Sale Road

Old Sale Road is designated as a "Link" road in the Latrobe City Council Public Road Register between Thompsons Road and John Field Drive, with this section under Council's care and management. North of the subject site, Old Sale Road is a VicRoads-controlled road between Moore Street and Thompsons Road.

In the vicinity of the subject site, Old Sale Road is mostly a divided carriageway consisting of one traffic lane in each direction. Sealed shoulders (marked as bicycle lanes) are located on both sides south of Haigh Street, whilst to the north of Haigh Street the extent of sealed shoulders varies.

The intersection between Old Sale Road and Haigh Street is controlled by a single lane roundabout. The Lake Narracan PSP plans for Thompsons Road to be realigned to this roundabout, becoming a fourth leg.

3.3.3 Bowmans Road

Bowmans Road is a local access road. The road reserve extends between Old Sale Road and Haigh Street, but only the first 150m (south of Old Sale Road) is formed. The carriageway appears to be compacted gravel, with a varying width of approximately 3 – 5 metres.

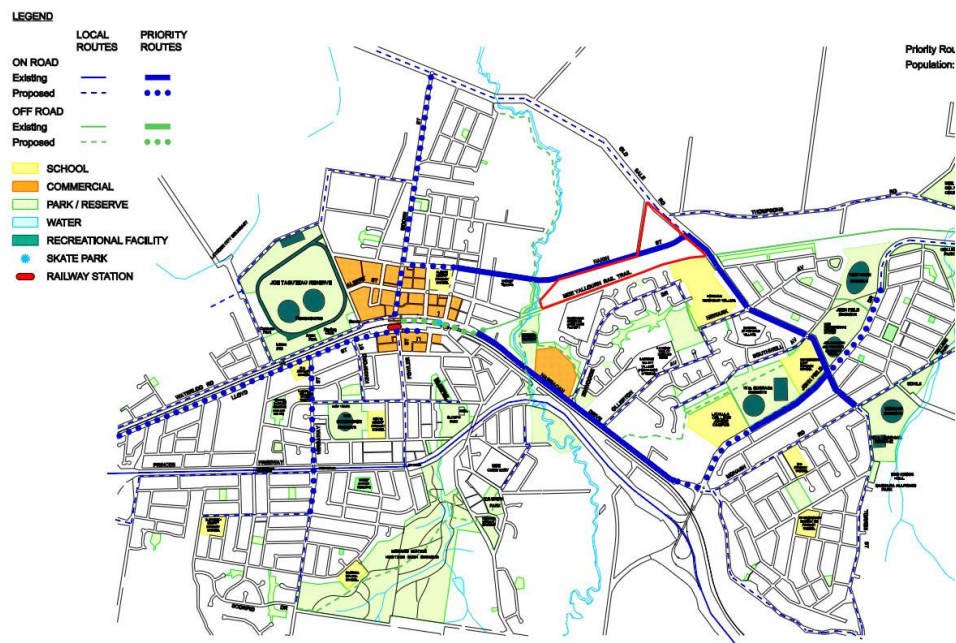
3.4 Bicycle Network

The *Latrobe City Bicycle Plan (2007)* identifies bicycle lanes along Haigh Street between Anzac Street and Old Sale Road, as well as bicycle lanes along Old Sale Road from Haigh Street to Monash Road to the south. There is no designated space for bicycles on Old Sale Road to the west of Haigh Street, however, it is understood this is a popular route for cyclists and as such the Bicycle Plan recommends signs along this section of Old Sale Road warning drivers of the presence of cyclists.

The Moe-Yallourn Rail Trail provides a shared walking/cycling path with access points limited to Narracan Drive, Old Sale Road, Sullivan’s Track and the bbq grounds of the Yallourn Power Station. The bicycle plan recommends improving access to the rail trail.

An extract of the Moe/Newborough Bicycle Plan is provided at Figure 6 below.

Figure 6 | Moe/Newborough Bicycle Plan (approximate DP area shown outlined in red)



3.5 Public Transport

Moe is located on the Melbourne to Bairnsdale rail line with V/Line train services available from Moe Railway Station, which is approximately 2km from the site.

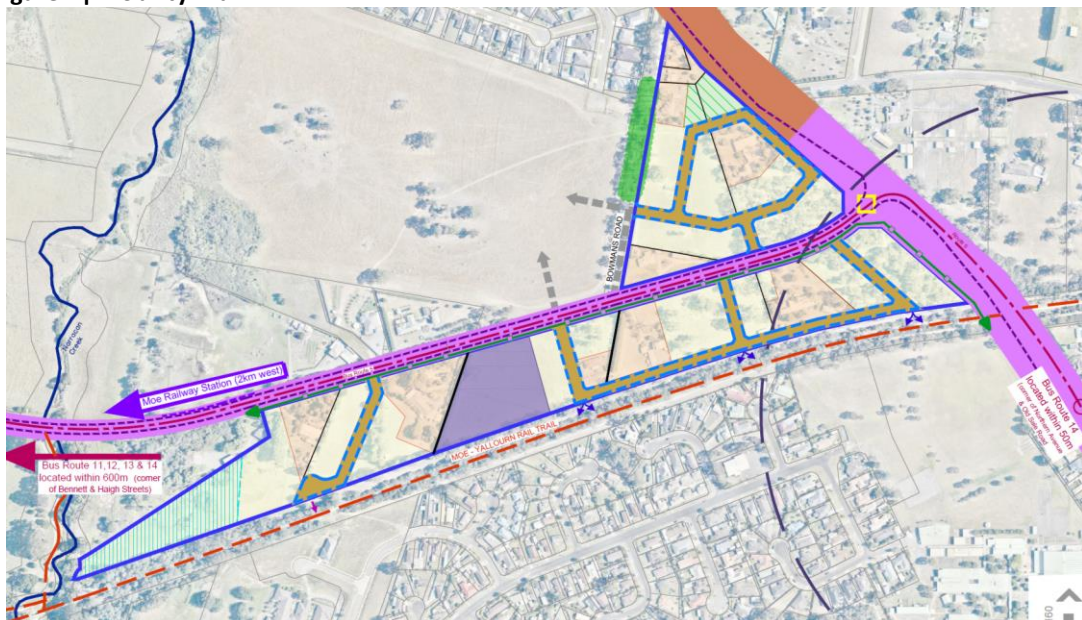
Latrobe Valley Bus Lines provide bus services throughout Moe on behalf of Public Transport Victoria. There are 7 different routes that service Moe. They are:

- Route 1 Moe – Traralgon via Morwell;
- Route 5 Moe – Traralgon via Yallourn North;
- Route 8 Traralgon – Moe;
- Route 11 Moe West;
- Route 12 Moe South;
- Route 13 Moe North; and
- Route 14 Moe – Newborough.

As can be seen on the Mobility Plan (Appendix 8 and reproduced at Figure 7 below), the HSDP area is within a 400m radius of the bus stop on Old Sale Road at the intersection of Northern Avenue. This bus stop is serviced by Route 5 Moe - Traralgon via Yallourn North.

In addition to the stop mentioned above, it should also be noted that the stop on Bennett Street just south of Haigh Street is within 600m of the site. This stop is well serviced by local routes 11, 12, 13 and 14 and can be accessed by future residents of the HSDP area.

Figure 7 | Mobility Plan



3.6 Ecological Assessment

An Ecological Assessment has been prepared by Millar Merrigan (May 2017) and is included as Appendix 6. The assessment provides the following description of the existing conditions:

- *The site has mostly been cleared of native vegetation, with the exception of two large patches and is dominated by pasture grass that is utilised for grazing stock;*
- *The composition of native vegetation on site varies throughout, with scattered trees located within individual titles, trees lining existing roads and most notably large patches of remnant vegetation exist within property IDs 1 and 10 abutting Old Sale Road;*
- *Due to past land practices such as extensive clearing and grazing, the native vegetation on site is fragmented in nature and as such is not considered to be of high ecological value;*
- *The study area historically formed part of the Plains Grassy Forest (EVC 151) in the Gippsland Plain Bioregion;*
- *Much of the subject site was significantly modified by land practices such as extensive clearing and grazing. The land is now characterized by pasture grass with few remnant patches of vegetation and scattered trees within;*
- *The 2005 mapping of EVCs illustrates that the site does contain the ecological characteristics of the original EVCs in some areas; and*
- *The Victorian Biodiversity Atlas (DELWP, 2017), determined that a number of species including the Dwarf Galaxias and Growling Grass Frog have been previously recorded within close proximity to the site. A combination of a desktop assessment and site assessment has determined that the site most likely does not contain suitable habitat species for either of these species.*

For further details regarding the sites Ecological condition, see the Ecological Assessment at Appendix 6. Note that at the time of subdivision further assessments may be required in accordance with the Permitted Clearing of Native Vegetation – Biodiversity Assessment Guidelines.

4 Consultation

The HSDP has been prepared following extensive consultation with relevant authorities. The following key conclusions have informed the design of the HSDP:

- Representatives of Millar Merrigan met with Asset Planners Paul Young and Michael Johnstone of Gippsland Water on 19/8/16 to discuss servicing of the site (sewer and water). It was agreed that there is sufficient capacity for potable water provision via existing assets, whereas reticulated sewer required augmentation of the existing network as per GHD's Moe, Trafalgar and Yarragon Sewer Networks System Performance Analysis (July 2015). It was agreed that subdivision within the Development Plan area would require completion of a new outfall sewer connecting into the network within Montane Park Estate;
- Representatives of NBA Group and Millar Merrigan met with Council officers on 14/6/16, 2/8/16 and 16/8/16 to present different iterations of the lot layout which responded to treatment of LSIO, native vegetation concerns and provision of safe access. Council comments on initial plans were received from Urban Growth Project Officer, Keisha Jones, on 8/7/16. Council comments can be summarised as follows:
 - It is noted that cash, not land contributions will be required for public open space. It would be beneficial if in the DP documentation an indication on what the contributions could be allocated towards i.e. areas for improvement in area/linkages etc.
 - The extent of the Land Subject to Inundation Overlay needs to be reflected on the plan.
 - Deanne Smith advised the group of the proposed changes to the road layout for the northern lots and this was generally acceptable from engineering's perspective.
 - It was good that all existing dwellings were shown to be retained within a lot.
 - Areas with vegetation are to be hatched, with a notation stating that further detailed assessment will be required at time of subdivision (i.e. lots 15 and 178)
 - Once the documentation is lodged, the engineers will be interested to understand how the drainage solution for the area will work.
- Version 1 of the Development Plan was lodged with Latrobe City Council September 2016; and
- 31/10/16 Latrobe City Council requested further information and amendments to the DP. Their request included referral responses from:
 - APA Group;
 - Ausnet Services;
 - Gippsland Water;
 - Department of Economic development, Jobs, Transport and Resources; and
 - West Gippsland Catchment Management Authority.

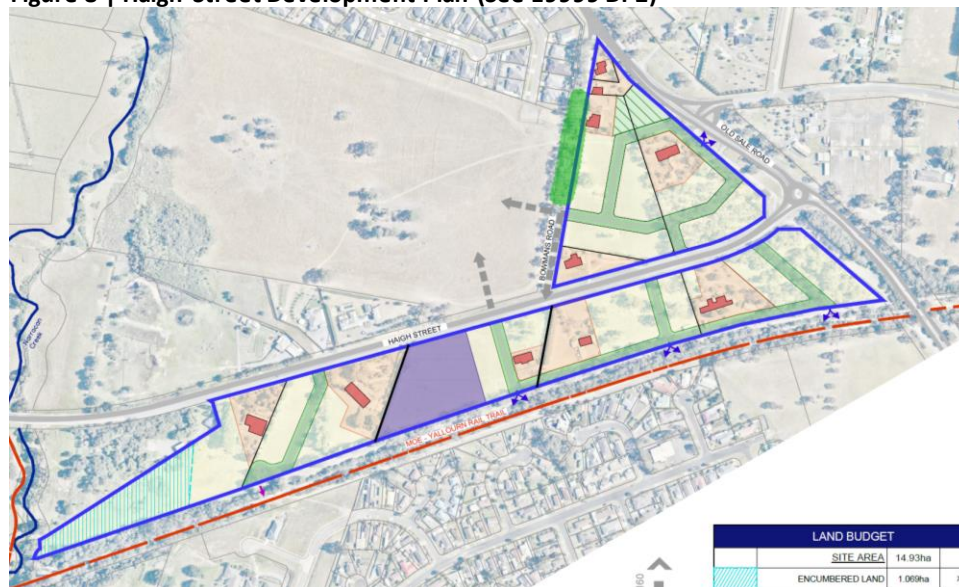
These comments have been reflected within the final design of the DP and have been specifically addressed in the body of this submission.

5 The Haigh Street Development Plan

The Haigh Street Development Plan is illustrated in Figure 8 and Appendix 7. It is a concept for the development of the subject land and will provide the basis for the preparation of future subdivision applications.

The intention of the HSDP is to provide an attractive well designed residential estate that expands on the existing urban area and takes advantage of the lands proximity to the Moe Township.

Figure 8 | Haigh Street Development Plan (See 19999 DP2)



5.1 General Residential Zone

The HSDP site area is zoned General Residential Zone (GRZ) the Purposes of which include:

- *To encourage development that respects the neighbourhood character of the area;*
- *To implement neighbourhood character policy and adopted neighbourhood character guidelines; and*
- *To provide a diversity of housing types and moderate housing growth in locations offering good access to services and transport.*

The Gippsland Regional Growth Plan identifies Latrobe City as a focal point for urban growth. Latrobe City consists of the combination of Moe, Morwell, Traralgon and Churchill and integration across the four centres is encouraged to support the functioning of a single urban system.

The HSDP has been designed to respond to the purposes of the GRZ, in particular to strike a balance between increased residential density and consideration of neighbourhood character. The HSDP achieves this through provision of scope for retention of existing buildings on larger house lots that can also provide for retention and protection of vegetation and built character, whilst providing additional residential area that can accommodate new development that contributes to and respects the character of the

neighbourhood. The mix of lot typologies within the DP promotes the planning schemes aims of increased housing diversity.

5.2 Principles & Objectives

The HSDP has been prepared in accordance with a series of strategic objectives based around best practice approach to growth area planning and established provisions of Clause 56 of the Latrobe Planning Scheme.

The Metropolitan Planning Authority (MPA) Precinct Structure Planning Guidelines provide clear objectives and direction for delivering sustainable neighbourhood design in growth areas. While these guidelines were developed for metropolitan areas they have relevance in Moe despite it being a regional centre and have been used to test the key elements of the HSDP.

The objectives of the HSDP are as follows:

Housing:

- Provide for better use of residentially zoned land;
- Provide increased residential density to meet a range of population needs as the community grows;
- Provide a range of lot sizes that promote housing choice and affordability;
- Provide flexible housing that can meet the needs of varying households as they move through life cycle changes, including aging in place;
- Provide for the retention of existing dwellings on larger allotments;
- Provide a density of development that is in keeping with the character of Moe; and
- Promote active frontages to roads and public areas including the Rail Trail.

Access and Movement

- Provide connectivity to the existing Township and the services within it;
- Provide safe and convenient street networks that are easily navigated;
- Create a well-connected street network that integrates with the existing road network;
- Promote walkability and cycling through a well-designed shared path network, thus reducing carbon emissions;
- Provide links to Moe-Yallourn Rail Trail; and
- Ensure street networks are designed to cater for varying choices of movement by the community i.e. walking, cycling, car and other motorised vehicles.

Environment

- Utilise natural site features including topography and drainage to guide design;
- Enhance the environmental values of the site;
- Protect the built environment from flooding, inundation and stormwater drainage;
- Vegetate the Development Plan area in themes that build on the existing character of Moe; and
- Have regard to existing vegetation within the precinct and the contribution it makes to Victoria's Biodiversity.

5.3 Land Budget

The MPA Precinct Structure Planning Guidelines provide the basis for calculating land use. They include the following definitions used in the land budget.

- **Encumbered Land** is constrained for development purposes. Includes easements for power/transmission, sewer, gas, waterways/drainage; retarding basins/wetlands; landfill; conservation and heritage areas. This land may be used for a range of activities (eg walking trails, sporting fields). It is not provided as a credit against public open space requirements, however regard is taken to the availability of encumbered land when determining the open space requirement.
- **Gross Developable Area** is the total precinct area excluding encumbered land, arterial roads and other roads with four or more lanes.
- **Net Developable Area** is land within the precinct available for development. This excludes encumbered land, arterial roads, railway corridor, government schools and community facilities and public open space. It includes lots, local roads and connector streets.

Table 2 | Land Budget

	HA	% of Site
TOTAL DEVELOPMENT PLAN AREA	14.93	100
ENCUMBERED LAND		
Flood Affected Land	1.069	7.16
GROSS DEVELOPABLE AREA	13.86	92.84
OPEN SPACE	-	-
NET DEVELOPABLE AREA	13.86	92.84
Roads	2.32	16.7
Residential allotment area		
▪ Standard residential allotment area	6.76	48.8
▪ Existing house lots	3.57	25.8
▪ Place of Worship	1.22	8.8

Land within the Development Plan area will be redeveloped in accordance with the requirements of the Latrobe City Planning Scheme and could include permitted land uses including a Place of Worship as is possible for property ID 4 that is owned by a local religious group.

5.4 Housing Density

The HSDP aims to achieve an urban neighbourhood that can provide a density that respects the existing residential character of Moe and is in accordance with the applicable zoning requirements.

In accordance with DPO5 and Clause 56 of the Latrobe Planning Scheme, the HSDP can provide lot sizes that vary and provide housing diversity and choice.

Clause 21.05 of the Latrobe Planning Scheme spells out Council's vision for main towns. Clause 21.05-4 contains the specific strategies for Moe/Newborough and the accompanying Moe-Newborough Structure Plan denotes the subject site as 'Area 10'. This Clause specifically shows Area 10 as 'existing residential opportunity' where residential development that is sensitive to the Narracan Creek Environment is encouraged. The provisions of the GRZ also provide for housing diversity and where appropriate, increased densities whilst protecting neighbourhood character. The HSDP caters for this by providing for the retention of existing dwellings on larger house lots surrounded by areas of preferred standard residential density.

An indicative subdivision plan was prepared to form the basis of background reports prepared for the HSDP. The subdivision plan indicated that the HSDP has the potential to accommodate:

- **Standard density lots** – lots that vary from approximately 500sqm to 1350sqm and are available for development of single dwellings and associated services.
- **Existing dwelling lots** – lots that can provide for the retention of existing dwellings and their associated gardens and open space. They range from approximately 1200sqm to 7,500sqm. There is also scope to redevelop these lots should the subject land owners choose to do so.
- **A place of worship site** - A site of 1.2ha that has been earmarked as a future place of worship.

The MPA Precinct Structure Planning Guidelines includes the following definition:

- **Net Housing Density** – The number of houses divided by the net developable area.

It is anticipated that the Development Plan will yield approximately 81 residential allotments (not including existing dwelling allotments), representing an overall density of **9 dwellings per hectare**. It is noted that the areas of the existing house lots and possible place of worship have been omitted from the Net Housing Density calculation. The State Planning Policy Framework encourages an average overall density in metropolitan growth areas of 15 dwellings per hectare, whilst Latrobe City Council has adopted a preferred density of 11 dwellings per hectare for growth areas associated with the major towns in the municipality. It is considered that in this circumstance a density of 9 dwellings per hectare is an acceptable response to the opportunities and constraints of the site. It allows for the possible retention of existing dwellings whilst also offering the opportunity to provide a variety of allotments suited to the needs of future residents.

6 Open Space

As shown in Figure 9 below, the HSDP abuts the Moe – Yallourn Rail Trail to the south that provides a link to the nearby Moe Botanic Gardens.

Latrobe City Council’s adopted *Public Open Space Strategy (March 2013)* is proposed to be implemented into the Latrobe Planning Scheme via Amendment C91.

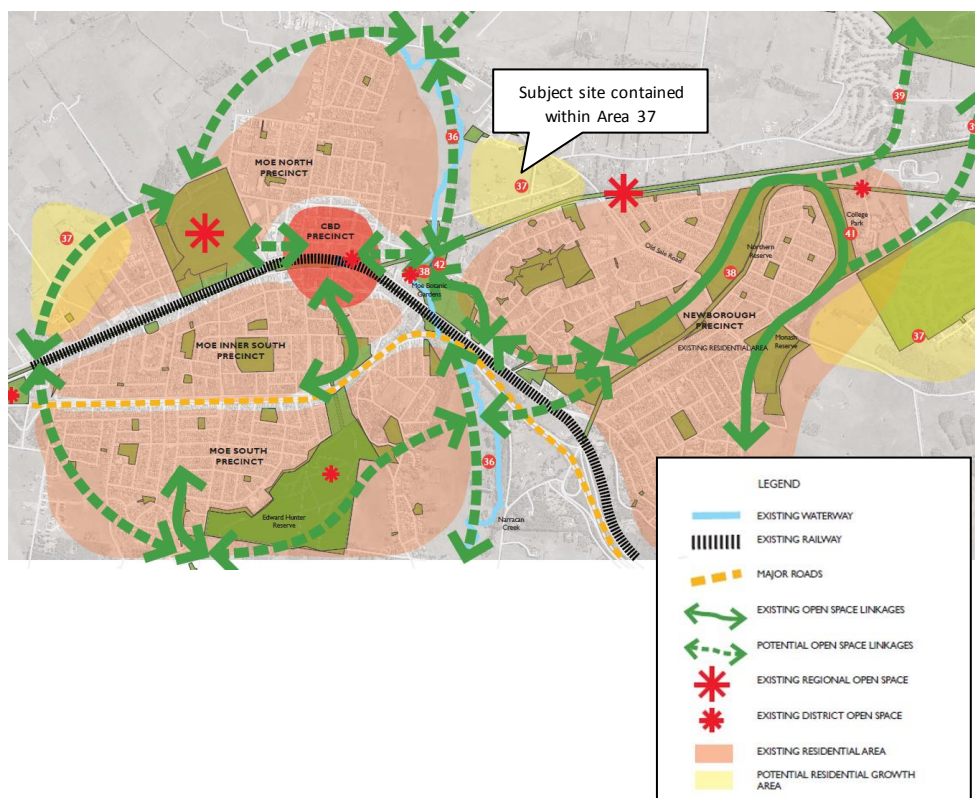
The Strategy notes that Moe/Newborough has considerably more open space than the residential average with 31.65ha available per 1000 people compared to 17.62ha per 1000 people. It does note however that a large portion of this is accounted for by Lake Narracan.

The Public Open Space Strategy also notes the following regarding open space available within Moe:

- *Parkland – General use and waterway/Drainage reserves account for a large proportion of total sites provided in Moe/Newborough.*
- *Sports open space accounts for only 9.4% of the total number of sites, which is well below the site as a whole (i.e. 13%), however sports open space in Moe/Newborough accounts for 25.1% of the total land area provided.*
- *There are 7 Conservation and Environment sites in Moe/Newborough.*
- *Waterway/drainage reserves accounts for 10% of the total size of open space available.*

The Strategy includes recommendation 37 for the subject site which notes ‘*Ensure open space in future residential growth areas contributes to an integrated network of linear trails and local parks. Contributions to be guided by the Open Space Policy*’.

Figure 9 | Moe/Newborough Open Space Recommendations Plan (HSDP contained within area 37 hatched yellow)



The Open Space Strategy includes the following relevant policy:

- *In residential areas, new subdivision be levied at 10% of the net developable area as total public open space of which a minimum 5% must be unencumbered and where required suitable for active open space development.*

Amendment C91 has been adopted by Council and is currently with the Minister for approval. It proposes to amend Clause 21.06, 21.08 and the Schedule to Clause 52.01 to introduce a specified public open space contribution for the following:

- Residential Subdivision (greenfield) - 8% of net developable area in cash or land contribution (any land contribution must be unencumbered). Land is the preferred contribution method (unless agreed otherwise at the discretion of Council).
- Residential subdivision (infill) – 5% new developable area in cash or land contribution method (any land contribution must be unencumbered). Cash is the preferred contribution method (unless otherwise agreed at the discretion of Council).

The revised Development Plan layout does not include any land private open space contribution as per Council's preference. It is expected that the developers of the individual titles will make a cash contribution equivalent to 5-8% of the value of their site as payment of open space in accordance with clause 52.01 and to the satisfaction of Latrobe City Council.

Cash collected in lieu of land for open space should be invested in embellishment of existing or proposed open space areas such as landscaping and the provision of recreational facilities or play equipment.

It is submitted that due to the nature of the site, the provision of a cash contribution is considered appropriate in this instance. The contribution can be utilised by council to improve existing connectivity to the Rail Trail including the provision of a pedestrian refuge at the intersection of Old Sale Road and Haigh Street and pedestrian crossings from the proposed internal road network to the Rail Trail. The Development Plan indicates the potential for an additional three pedestrian access points to the Rail Trail however these linkages will be subject to detailed design and negotiations with the rail trail committee at the subdivision stage.

It is also noted that the strategy identifies a number of proposed open space linkages throughout the municipality towards the Lake Narracan foreshore, which is also proposed for significant upgrade. The contributions generated by the HSDP could be allocated to these works if determined appropriate by Latrobe City Council.

It is noted that the Moe/Newborough Structure Plan does not require the provision of further open space areas within the site.

7 Infrastructure

The provision of infrastructure to service the proposed development is subject to detailed design at the subdivision stage, however the following preliminary advice is provided and is further explained in the attached Infrastructure Services Advice report.

Millar Merrigan has made enquiries of the following service authorities to determine the current location and capacity of existing infrastructure assets and the potential for these to cater for the development of the site for residential purposes as proposed:

Table 3 | Utilities Summary

Utility	Authority
Sewerage	Gippsland Water
Water	Gippsland Water
Drainage	Latrobe City Council & West Gippsland Catchment Management Authority
Electricity	AusNet Services
Gas	APA Group
Telecommunications	Telstra/NBN Co.

Detailed design of this infrastructure will be completed in line with authority's standards and permit conditions during the next phase of the project.

7.1 Sewerage

The relevant service authority for sewer in the area is Gippsland Water. It is noted that there is **no** reticulated sewerage within the Development Plan area. Gippsland Water assets service lots directly to the south of the rail trail and the existing Montane Park Estate to the north west.

Representatives of Millar Merrigan met with asset planners Paul Young and Michael Johnstone of Gippsland Water on 19/8/16 to discuss servicing of the site (sewer and water). It was agreed that the existing assets provide sufficient capacity for potable water, whereas reticulated sewer required augmentation of the existing network as per GHD's Moe, Trafalgar and Yarragon Sewer Networks System Performance Analysis (July 2015).

It was agreed that subdivision within the Development Plan area would require completion of a new outfall sewer connecting into the network within Montane Park Estate. This cross connection ensures existing surcharge issues downstream of existing development in Newborough can be resolved.

7.2 Reticulated Water

The relevant service authority for water in the area is Gippsland Water. There are no anticipated issues with capacity in the existing water mains located in Haigh Street and Old Sale Road. Gippsland Water maintained water assets will be required to be reticulated throughout the development/subdivision. It is anticipated that reticulated water can be provided to the subject site in a timely and cost effective manner.

There are no reticulated recycled water sources within this area but opportunity exists for rainwater capture and re-use.

7.3 Urban Run-Off and Drainage

The responsible authorities for local drainage are West Gippsland Catchment Management Authority (WGCMA) and Latrobe City Council. Design approval from Latrobe City Council and WGCMA will be required prior to commencement of the drainage works.

It is proposed to provide a staged approach to the implementation of formal drainage within the Development Plan area. Each stage will be required to complete on site treatment and detention works, along with construction of the corresponding section of outfall drainage. A Preliminary Stormwater Management Plan has been prepared by Millar Merrigan, which outlines the details of the proposed drainage scheme works.

7.4 Electricity

The relevant electricity supplier for the site is AusNet Services. There are no anticipated issues with regard to network capacity. New substations may need to be upgraded to facilitate development. AusNet Services have existing overhead powerlines running along the southern side of Haigh Street and Old Sale Road. Each site will need to construct an underground supply for connection to the AusNet Services network.

The existing overhead supply within the western title is to be retired.

7.5 Gas

APA Group may be able to supply the subject site with natural gas. These works could be subject to contributions from the developer. Detailed costs can be provided only at the time of formal application. Existing APA infrastructure is located within the Old Sale Road reserve.

7.6 Telecommunications

Telecommunications is currently transitioning from copper wire to broadband technology. NBN Co. have confirmed that the overall site will be provided with Fibre to the Premises (FTTP), as part of the National Broadband Network. The site sits within the current NBN footprint which triggers the need for an NBN agreement.

NBN has cable in service directly in front of the development with major infrastructure located very close. Telstra also has existing infrastructure within the area and as such there are no anticipated issues with network capacity.

8 Access & Movement

The HSDP aims to create a safe and convenient neighbourhood that includes a clear and legible street network that provides for access through the development and links with surrounding streets.

A Mobility Plan (19999 DP3) has been prepared and is attached at Appendix 8 and reproduced at Figure 7 earlier.

8.1 Proposed Road Network

The Development Plan proposes a functional street network that incorporates 14m and 16m road reserves. Cross sections of the proposed roads are available at the Cross Section Plan (19999 DP7) at Appendix 11. Detailed design will be required at the development stage however, initial investigations suggest that the proposed road widths can provide for safe and efficient movement.

Access to the southern portion of the HSDP is to be achieved via Haigh Street where four new connections are proposed. As discussed in the attached Traffic Impact Assessment, Haigh Street has the ability to service the development without significant upgrade. No new connections to Old Sale Road are proposed or required.

Access to the northern portion of the HSDP is to be achieved via Bowmans Road which will be upgraded to the satisfaction of Council and will accommodate one new connection that will service the entire northern portion of the development. An existing driveway within property ID 10 is available to Haigh Street to the south and provides an alternate access point should the development of this property precede the land to the west that abuts Bowmens Road.

The proposed road network is to be provided in accordance with Latrobe City Council standards. A detailed analysis of the proposal was undertaken by O'Brien Traffic and they have concluded that:

Based on our assessment, we find that the proposed subdivision layout plan is acceptable (from a traffic engineering perspective) for the purposes of approving the development plan for the subject site.

In accordance with Department of Economic Development, Jobs, Transport and Resources all upgraded roads that are bus capable must be consistent with the *Public Transport Guidelines for Land Use Development*.

8.2 Road Proposal in Detail

The following observations regarding the proposed road network are summarised from the O'Brien Traffic Report:

8.2.1 Haigh Street

A total of five intersections are proposed to Haigh Street, and several lots would have direct access. This is to allow for a staged development of the subject site to the south of Haigh Street, which makes reducing the number of intersections impractical. Haigh Street is

an arterial link road and within a more urban environment post-subdivision the speed limit would reduce to 60km/h. As such, the proposed access arrangements are considered acceptable.

It is highly likely (given the very low anticipated traffic volumes) that the intersections along Haigh Street (excluding Bowmans Road) would fall within the Austroads guidelines for urban type BAL and BAR turn treatments, i.e. the most basic form of intersection treatment. This may require shoulder widening on the northern side of Haigh Street (again, this is to be determined at the subdivision application stage).

There appear to be no issues with vehicle sight lines for any of the Haigh Street intersections.

The proposed 14m and 16m wide road reservations accord with the Infrastructure Design Manual that has been adopted by Latrobe City Council.

8.2.2 Bowmans Road

Bowmans Road (sic) is not proposed to be extended all the way between Old Sale Road and Haigh Street due to vegetation constraints. It would be accessed via either end (i.e. via the existing intersection with Old Sale Road and via a new intersection with in Haigh Street). This new intersection at Haigh Street would create a right-left staggered intersection together with the intersection proposed to the west of Bowmans Road ("rightleft" meaning that drivers must turn right out of the side street onto the main road, and then left into the opposite side street). A staggered intersection is a better outcome than a cross-intersection from a safety perspective as it reduces the propensity for cross-traffic crashes

Figure 7.8 of Austroads Guide to Road Design Part 4A: Unsignalised and Signalised Intersections specifies a typical stagger distance of 15-30m between the centrelines of right-left staggered roads. The proposed stagger distance is approximately 15 – 20m, which falls within this range.

The extension of Bowmans Road would also create a left-right staggered intersection with the cul-de-sac proposed to the east off Haigh Street. The Austroads guide suggests provision of auxiliary back-to-back right-turn lanes, but no regard is given to site specifics such as traffic volumes and speeds. In this case, traffic volumes would be very low (just 80 daily trips and 8 peak hour trips in/out of the cul-de-sac) and only a very small proportion of this volume would access Bowmans Road. Further, a speed limit reduction to 60km/h is a virtual certainty post-subdivision, which essentially makes this an urban road environment as opposed to a higher speed rural road environment. For these reasons, no special treatment is considered necessary.

The intersection of Haigh Street / Bowmans Road may require vehicle turn lanes under Austroads Guidelines (subject to detailed traffic analysis at the subdivision application stage). If this is the case, it would have no bearing on the location of the nearby proposed intersections. The cul-de-sac located opposite could potentially be provided with a short right-turn lane in conjunction with works to provide a right-turn lane into Bowmans Road (i.e. "piggy backing" onto a Bowmans Road right-turn lane).

8.3 Traffic Generation

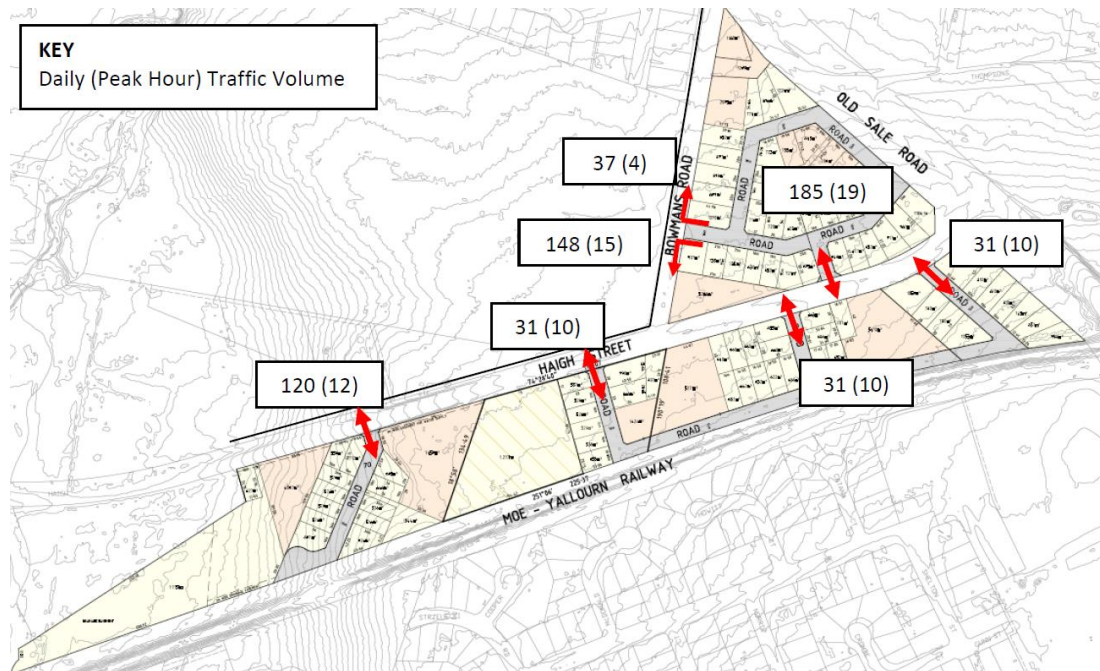
Any existing traffic volume data would be of little of relevance because volumes will change dramatically in future on account of development of the Lake Narracan PSP area. It is the ultimate future traffic volumes that are of relevance.

Therefore, with this in mind the O'Brien Traffic Report has calculated the expected traffic volumes as follows:

Adopting the typical vehicle trip generation rate of 10 trips per dwelling per day, with 10% occurring in the AM and PM peak hours, equates to the traffic volumes shown in Figure 10.

Based on the layout of the surrounding road network (including the freeway to the south) and nearby existing/future major activity generators, it is estimated traffic flows would be split approximately 50/50 between the east and west.

Figure 10 | Estimated Daily and Peak Hour Traffic Generation



8.4 Pedestrian Connectivity

Latrobe City Councils *Healthy Urban Design Good Practice Guideline* is an initiative that aims to accommodate pedestrian and cyclists as a first priority in street, building and open space design. It includes a number of objectives and encourages the provision of user friendly pathways.

The proposed development has been provided with an appropriate shared pathway network as demonstrated on the Mobility Plan at Appendix 8. Paths are provided on each side of the road network and have been designed to link with the bicycle lanes in Haigh Street and the Moe-Yallourn Rail Trail.

The Development Plan recommends a proposed off road shared path along Old Sale Road and the provision of a pedestrian refuge at the intersection of Haigh Street and Old Sale Road to act as a continuation of the newly constructed path on the northern side and facilitate access to the Rail Trail. It also recommends the provision of an additional three pedestrian links from internal roads to the Rail Trail. Such links will be subject to detailed design at the subdivision stage and negotiations with the Rail Trail Committee.

The proposed pathways and links provided will ensure opportunities for alternative means of travel to the nearby Township of Moe. Pathways should be designed to meet the applicable standards at the subdivision stage.

As discussed in Section 6 above, cash contributions collected as payment of public open space can be used to fund these linkages.

9 Landscape

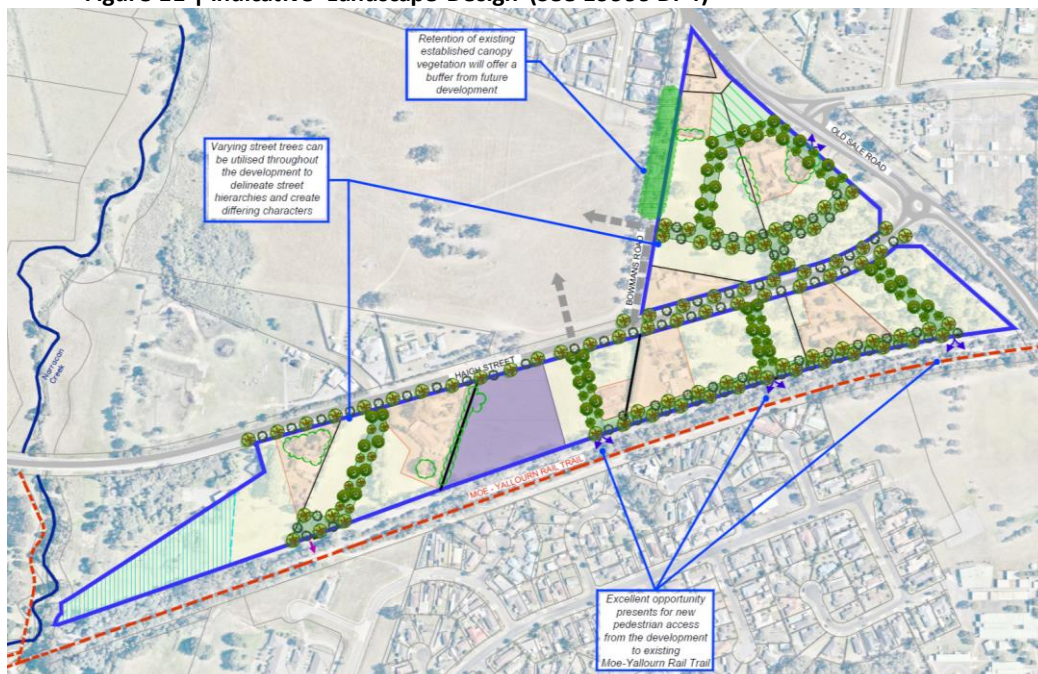
The HSDP presents the opportunity to enhance the landscape values of the surrounding area. The provision of an appropriate landscape theme can provide a sense of place and community and ensure an attractive development that will enhance the character of Moe. A Landscape Concept (1999 DP5) has been prepared and is attached at Appendix 9.

The HSDP Landscape Concept proposes avenue plantings of canopy trees on either side of proposed roads that will create visual interest and provide the development with a leafy character. The Landscape Concept recommends the incorporation of varying species of canopy trees that can provide differentiation amongst the proposed roads. Future planning applications and detailed landscape design should select indigenous tree species to the satisfaction of Latrobe City Council.

Existing vegetation throughout the DP area is identified in the attached Ecological Assessment (Appendix 6) which provides recommendations as to the removal and retention of vegetation across the DP area. Where possible, consideration should be given to the maximum extent of vegetation retention at the subdivision stage. Where native vegetation is required to be removed, appropriate offsets should be calculated and provided in accordance with *Permitted clearing of native vegetation – Biodiversity assessment guidelines*.

The design of the Development Plan avoids lots that have side and rear fencing adjoining public spaces including Haigh Street, Internal Roads and the Rail Trail where possible. Detailed Design Guidelines should be prepared at the subdivision stage to guide development of these allotments together with the possible place of worship.

Figure 11 | Indicative Landscape Design (See 1999 DP4)

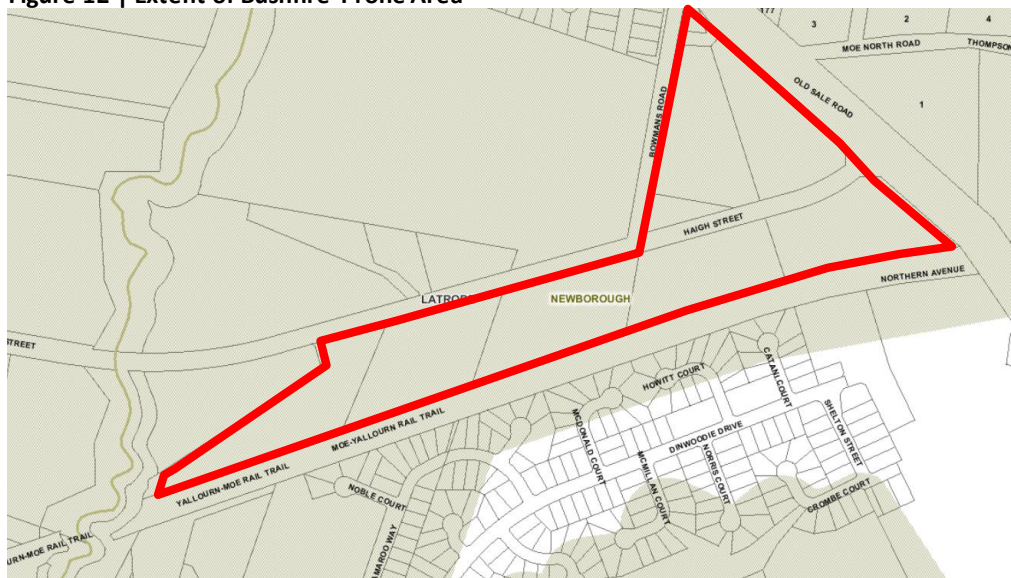


10 Bushfire

The site is not affected by a Bushfire Management Overlay and as such, no bushfire planning requirements are applicable.

The Development Plan area is however contained within a designated Bushfire Prone Area (BPA) (see Figure 12 below) and as such bushfire construction requirements apply to each future lot at building permit stage. A minimum construction level of BAL 12.5 (Bushfire Attack Level) is imposed by *AS3959-2009 Construction of Buildings in Bushfire Prone Areas* and the BAL is increased as the bushfire hazard increases. Vegetation and slope within 100m of a dwelling is considered in determining the BAL.

Figure 12 | Extent of Bushfire Prone Area



The most likely form of bushfire attack to the HSDP area would be from grassfire, which has the potential to spread rapidly across surrounding grazing land, namely to the north and north-east of the site. Suburban development dominates in the remaining directions although some patches of vegetation are present in these areas, as well as within the subject site itself. Bushfire within the grassland areas will interact with these scattered areas of more substantial vegetation, however they are not of a scale to create an extensive fire front.

The vegetated areas within the HSDP are allocated for residential development and as such there is no long term impact present. Rather, it is the interim impacts it may cause to other areas within the development plan whilst these areas remain vegetated.

Any new landscaping within the site will not be of a scale that presents particular hazard to the Development Plan area.

The HSDP has appropriately considered bushfire hazard to enable ease of future development and the existing perimeter roads provide sufficient buffering from surrounding grassland areas, to enable application of low BAL's to the future allotments.

Vegetation within the Rail Trail is of linear nature and not of a scale that provides high bushfire risk, however a mix of large allotments and perimeter roads line this interface to enable application of low BAL's.

Developers will need to consider staging in respect to lots that abut undeveloped areas within the development plan itself, being grassland areas, as well as the more vegetated areas to the eastern end of the land. These abuttals can be further considered at subdivision stage, based on the conditions of the land at that point in time.

Given that the land is located directly north of urbanised areas it would be reasonable to expect the BPA to be removed from the site as development begins to occur and updates to the mapping are undertaken.

11 Implementation

11.1 Staging & Implementation

As shown on the Staging Plan 19999 DP8 at Appendix 12 the development can occur in stages with title boundaries and the provision of infrastructure determining factors when developing the proposed stages. The southern portion of the HSDP comprises of five separate land holdings and as such is proposed to be developed in five stages. It has the ability to be developed out of sequence as long as the required infrastructure is provided on a stage by stage basis. In particular it is noted that the pioneer developer will most likely need to provide for a significant extension of the existing sewerage network.

The northern portion of the development is to be constructed over two stages with the eastern title adjacent to Bowmans Road to be developed first to provide access to the west. The construction of Bowmans Road will be at the cost and responsibility of the abutting land owner.

The development of drainage of the site correlates with the Staging Plan and at each stage, the drainage will be completed as per the Implementation Plan (19999 DP9) shown at Appendix 13. The Implementation Plan documents the requirement for drainage for each landholding, where necessary flexibility is included to ensure that stages of development can occur out of sequence provided the developer ensures that required drainage infrastructure is provided to the satisfaction of Latrobe City Council.

11.2 Application Requirements

An application for subdivision should consider the following:

- Subdivision layouts must be generally in accordance with the Haigh Street Development Plan;
- Cash in lieu open space payments are to be made to facilitate open space improvements such as the development of the pedestrian links to the Rail Trail and the redevelopment of the Lake Narracan foreshore;
- The responsibility for the construction of Bowmans Road will fall on the development of the abutting land that creates the need for the road;
- Street networks must support building frontages with two way surveillance;
- Ensure all upgraded roads that are bus capable are consistent with the Public Transport Guidelines for Land Use and Development.
- Infrastructure must be designed and constructed in accordance with Council's infrastructure design guidelines and the *Victorian Stormwater Committee Best Practice Guidelines*;
- Drainage infrastructure will be provided in a staged manner in line with the Implementation Plan provided at Appendix 13 and the Stormwater Management Statement at Appendix 4;
- Consider the location, species and significance of existing vegetation when determining whether it is to be retained or removed as part of the subdivision;
- Provide appropriate offsite offsets for any native vegetation to be removed at the subdivision stage and to the satisfaction of Latrobe City Council; and

- A landscape master plan must be prepared and submitted as part of any subdivision application. The plan must be generally in accordance with the Landscape Concept Plan and include the following:
 - Vegetation to be retained and removed;
 - The public areas and road reserves to be planted, including landscape detail.
 - The shapes, species, height and placement of trees;
 - The location of pedestrian pathways, signage, fencing, public lighting and street furniture; and
 - The detailed design of drainage areas and WSUD features.
- The landscape design must:
 - Ensure landscaping supports surveillance and provides shade in streets and public open space;
 - Provide for walking and cycling networks that link with community facilities;
 - Provide appropriate pathways, signage, fencing, public lighting and street furniture;
 - Create low maintenance, durable landscapes that are capable of a long life;
 - Streetscapes must be planted with native vegetation from Councils preferred planting schedule.
- Design Guidelines to be prepared for allotments that have side or rear fences abutting public areas (including Haigh Street, internal road network and the Rail Trail) and the possible future place of worship.

Appendix 1 – Certificates of Title

Appendix 2 - Site Analysis Plan (DP1)

As prepared by NBA Group & Millar Merrigan 19999 DP1 Version 3 – 2 sheets

Appendix 3 - Infrastructure Servicing Report

As prepared by Millar Merrigan March 2017

Appendix 4 - Preliminary Stormwater Management Strategy

As prepared by Millar Merrigan May 2017

Appendix 5 - Traffic Impact Assessment Report

As prepared by O'Brien Traffic August 2016

Appendix 6 - Ecological Assessment

As prepared by Millar Merrigan May 2017

Appendix 7 - Haigh Street Development Plan (DP2)

As prepared by NBA Group & Millar Merrigan (19999 DP2 Version 3)

Appendix 8 - Mobility Plan (DP3)

As prepared by NBA Group & Millar Merrigan (19999 DP3 Version 3).

Appendix 9 - Landscape Plan (DP4)

As prepared by NBA Group & Millar Merrigan (19999 DP4 Version 3).

Appendix 10 - Design Response Plan (DP5)

As prepared by NBA Group & Millar Merrigan (19999DP5 version 3).

Appendix 11 - Cross Sections Plan (DP6)

As prepared by NBA Group & Millar Merrigan (19999DP6 Version 3).

Appendix 12 - Staging Plan (DP7)

As prepared by NBA Group & Millar Merrigan (19999 DP7 Version 3).

Appendix 13 - Implementation Plan (DP8)

As prepared by NBA Group & Millar Merrigan (19999 DP8 Version 3).