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## Contents

<b>1</b>	<b>Introduction</b>	<b>1</b>
<b>2</b>	<b>Site Analysis</b>	<b>3</b>
<b>3</b>	<b>Site Assessments</b>	<b>7</b>
<b>4</b>	<b>Consultation</b>	<b>12</b>
<b>5</b>	<b>The Development Plan</b>	<b>14</b>
<b>6</b>	<b>Land Use Framework</b>	<b>18</b>
<b>7</b>	<b>Open Space</b>	<b>22</b>
<b>8</b>	<b>Landscape</b>	<b>24</b>
<b>9</b>	<b>Native Vegetation</b>	<b>25</b>
<b>10</b>	<b>Fauna</b>	<b>26</b>
<b>11</b>	<b>Bushfire</b>	<b>27</b>
<b>12</b>	<b>Access &amp; Movement</b>	<b>28</b>
<b>13</b>	<b>Infrastructure</b>	<b>32</b>
<b>14</b>	<b>Implementation</b>	<b>34</b>

## Appendices

<b>Appendix 1 -</b>	<b>Certificates of Title</b>
<b>Appendix 2 -</b>	<b>Site Analysis Plan 15610 DP1 V2</b>
<b>Appendix 3 -</b>	<b>Development Plan 15610 DP2 V9</b>
<b>Appendix 4 -</b>	<b>Staging Plan 15610 DP3 V5</b>
<b>Appendix 5 -</b>	<b>Mobility Plan 15610 DP4 V6</b>
<b>Appendix 6 -</b>	<b>Cross Sections 15610 DP5 V5 (2 Sheets)</b>
<b>Appendix 7 -</b>	<b>Landscape Master Plan 15610 DP6 V5</b>
<b>Appendix 8 -</b>	<b>Traffic Engineering Assessment (July 2015)</b>
<b>Appendix 9 -</b>	<b>Ecological Features and Constraints Assessment (V3)</b>
<b>Appendix 10 -</b>	<b>Infrastructure Services Report (V2)</b>
<b>Appendix 11 -</b>	<b>Rain-on- Grid Modelling Report</b>
<b>Appendix 12 -</b>	<b>Surface Water Management Strategy</b>
<b>Appendix 13 -</b>	<b>Noise Assessment</b>

# 1 Introduction

This Development Plan applies to land referred to as 'Morwell West' and covers an area of approximately 43 hectares. The land is situated to the west of the Morwell Township, approximately 750m from the town centre as shown in Figure 1.

The catalyst for the preparation of this Development Plan was the rezoning of the land to Residential 1 Zone (now General Residential Zone (GRZ)) and introduction of the Development Plan Overlay – Schedule 5 (DPO5) via Amendment C47 that was gazetted into the Latrobe Planning Scheme in March 2011.

The Development Plan Overlay is a planning tool used to guide the future development of land. It is commonly used in areas where land is in multiple land ownerships and an integrated development outcome is required.

The Department of Environment, Land, Water and Planning (DELWP) (formally the Department of Transport, Planning and Local Infrastructure (DTPLI)) outlines 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 **Morwell West Development Plan** (the 'MWDP') has been prepared in accordance with Schedule 5 of the DPO. It provides guidance for development across a number of allotments to ensure a cohesive and integrated pattern of development for the Morwell West area as a whole.

The Development Plan identifies where roads, reserves, wetlands and physical infrastructure should be located. It is based on best practice urban design and 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** (Appendix 3) – depicting a broad urban layout including land use, road network, location of reserves, stormwater treatment and key features;
- **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. The report includes the attached appendices.

These components should be considered in conjunction with each other.

The Development Plan has been prepared following the preparation of several investigative

reports and assessments including:

- **Traffic Engineering Assessment** – an assessment of the internal and external traffic considerations, prepared by SALT<sup>3</sup>, July 2015;
- **Rain-on-Grid Modelling Report** – a report on the results of Rain-on-Grid Modelling undertaken on the site, prepared by Water Technology, February 2013, and Surface Water Management Plan, September 2014;
- **Infrastructure Services Report** – an assessment of available infrastructure and its ability to service the proposed development, prepared by Millar Merrigan, October 2014;
- **Noise Assessment** – an acoustic report which addresses possible encroachment issues on two light industrial sites adjacent to the proposed subdivision, prepared by Mashall Day Acoustics, September 2014;
- **Ecological Features & Constraints Report** – an assessment of the ecological features of the site, prepared by Paul Kelly & Associates, October 2013.

These reports can be found within the attached Appendices.

Chapter 14 of the Development Plan outlines how the plan will be implemented through the planning permit stage.

Figure 1 - Context Plan





## 2 Site Analysis

### 2.1 Development Plan Area

The **Morwell West Development Plan** (MWDP) relates to a number of parcels of land that together comprise an area of approximately 43 hectares and are located to the west of the Morwell Township. The ownership of the land is as outlined in Table 1. The land currently comprises of a variety of uses as follows:

- The Southern Precinct which abuts Toners Lane – contains the Latrobe Valley Golf Driving Range;
- The Central Precinct which extends from Madden Street to Catherine Street – comprises of vacant land, some of which is contained within the Toners Lane reserve;
- The Eastern Precinct – contains various rural living dwellings, a drainage reserve, open farming land and the Morwell Sunday Markets.

**Figure 2 - Aerial Photograph**



The subject land is highly modified with a long term agricultural history and the farming land is currently predominantly utilised for grazing. In terms of its natural and cultural features, the site supports a few patches of native vegetation together with a scattered indigenous tree. There are no designated waterways on site however there are various open drainage channels. There are no known registered Aboriginal heritage sites, and the land is not considered to be culturally sensitive under the Aboriginal Heritage Regulations.

The topography of the land is relatively flat in the southern and central precincts with a centrally located north south orientated depression and rising gently to elevated land in the eastern precinct.

A number of easements exist throughout the Development Plan area for the purposes of drainage, sewerage and carriageway.

The Development Plan area has a significant abuttal to Toners Lane Reserve which provides for a number of user groups, including an Archery Club, Pony Club, Automobile Club, Motorcycle Riders Association, Baseball Centre and Dog Obedience Club.

Road abuttals are to Toners Lane to the south west and Latrobe Road to the east with additional

connections available from local roads such as Mary Street, Madden Street, Godridge Street and Catherine Street.

*Photo 1 - Southern Precinct - driving range*



*Photo 2 - Central Precinct - cleared grazing land*



*Photo 3 - Eastern Precinct - Sunday markets*



**Table 1 - Development Plan Allotment Ownership (refer to Appendix 1)**

	Address	Title Details	Volume Folio No.	Current Land Owner	Land Areas
1	Toners Lane, Morwell	Lot 1 LP218156T	Vol 9937 Fol 484	Freehold landowner A	6.42ha
2	Toners Lane, Morwell	Lot 2 LP218156	Vol 9937 Fol 485	Freehold landowner A	5.72ha
3	Toners Lane, Morwell	Part Lot 10 LP140015	Vol 9483 Fol 037	Freehold landowner B (Latrobe City Council)	9.48ha
4	40 Catherine Street, Morwell	Res 1 PS649420	Vol 11324 Fol 249	Public Reserve (Latrobe City Council)	0.28ha
5	40 Catherine Street, Morwell	Part Res 2 PS649420	Vol 11324 Fol 250	Public Reserve (Latrobe City Council)	0.12ha
6	40 Catherine Street, Morwell	Res 3 PS649420	Vol 11324 Fol 251	Public Reserve (Latrobe City Council)	0.21ha
7	42 Catherine Street, Morwell	Lot D LP145116	Vol 9553 Fol 063	Freehold landowner C	1.94ha
8	56 Catherine Street, Morwell	Allot. 45N Parish of Maryvale	Vol 9842 Fol 385	Freehold landowner D	1.73ha
9	105 Latrobe Road, Morwell	Lot 1 TP326377	Vol 11302 Fol 892	Freehold landowner E	6.77ha
10	115 Latrobe Road, Morwell	Allot. 44B Parish of Maryvale	Vol 9861 Fol 136	Freehold landowner F	0.40ha
11	125 Latrobe Road, Morwell	Lot 63 PS027634	Vol 08061 Fol 077	Freehold landowner G	0.09ha
12	135 Latrobe Road, Morwell	Lot 1 on TP 241407K	Vol 8078 Fol 547	Freehold landowner H	2.13ha
13		Lots 1 and 2 TP860245G	Vol 8061 Fol 081	Board of Land and Works Melbourne	7.82ha (combined area of 13 and 14)
14		PS027634	Various	Board of Land and Works Melbourne	

There are a large number of existing but undeveloped urban allotments in the northern section of the eastern precinct. Titles for some (but not all) of these allotments have been cancelled with land transferred back to the crown. These lots are shown in Plan of Subdivision PS027634. The various titles have not been included in Appendix 1.

This Development Plan has been prepared by the NBA Group on behalf of Latrobe City Council, Panoramic Estate Pty Ltd and Latrobe Valley Golf Driving Range Pty Ltd. It is noted that if the Council and State Government owned land is to be developed, there may need to be processes to facilitate the transfer of this land. This would be subject to further consideration by these owners at a future stage and the Development Plan does not commit them to the development of the land.

## 2.2 Development Plan Context

As shown on the Site Analysis Plan at Appendix 2, the Development Plan area interfaces with several land uses which include residential, recreational, agricultural, and industrial.

Morwell town centre is approximately 750m east of the precinct and can be accessed by Commercial Road and Princes Drive via Toners Lane, Davey Street, Catherine Street and Latrobe Road. Morwell is the Latrobe Valley's second largest service centre and is home to a number of key power generation facilities. Morwell is situated approximately 150kms east of Melbourne and has a population of approximately 14,000. Morwell's commercial centre is divided into two areas by the Gippsland Rail Line. The main commercial centre is situated along Commercial Road south of the railway, whilst additional facilities are available north of the railway line along Princes Drive. A range of facilities and services are available within the Morwell town centre.

Land to the west of the Development Plan area is generally contained within the Farming Zone or Special Use Zone and comprises of cleared grazing land, the Morwell River and wetlands.

Land to the north is contained within the Public Park and Recreation Zone and Farming Zone and comprises of the Toners Lane Reserve and associated user groups and cleared grazing land.

To the east is Latrobe Road with residential and industrial land extending further east of Latrobe Road. The Morwell North-West Development Plan (MNWDP) area is to the east of Latrobe Road and proposes future residential development (as shown in Figure 1).

The MNWDP covers an area of 142 ha and provision has been made for approximately 1300 residential allotments, a series of open space and drainage reserves and a small local centre to the east. It is noted that the MNWDP includes a development contributions component which includes provisions for the equalisation of open space, upgrade of internal roads to collector roads, major intersections (including the intersection of Gordon Street and Latrobe Road), bus stops and drainage infrastructure.

The Yallourn Open Cut Coal Mine and Power Station (contained within the Special Use Zone) is located to the north-west of the site (refer to Figure 3). An 'urban buffer' between the coal mine and the Morwell Township was first identified and established as part of the 'Framework for the Future of the Latrobe Valley' (1987).

In the context of the current planning provisions, the urban buffer is implemented through the application of the Environmental Significance Overlay - Schedule 1 (ESO1).

The Development Plan area is located outside the ESO1 (refer to Figure 4). The suitability of the site for residential development in relation to the proximity of the mine and buffer was considered as part of Amendment C47 (approved in March 2011), which determined that the site was suitable for residential development and consequently was rezoned to Residential 1 Zone. Amendment C47 also removed the ESO1 from the south-western part of the site, determining that it was no longer required as part of the urban buffer, and applied the Development Plan Overlay – Schedule 5 (DPO5).

The Development Plan maintains the existing urban buffer as previously considered through Amendment C47, as is consistent with the requirements of the DPO5.

To the south east, land is zoned Residential 1 Zone, Industrial 3 Zone and Mixed Use Zone. The residential land in Bellarine Court has a curvilinear subdivision pattern and lots developed with single dwellings. Industrial and commercial uses about the MWDP area and include vehicle sales, car detailing, storage warehouses, a recycling plant, retailers and engineering enterprises. The MWDP considers potential amenity impacts from these industrial and commercial uses and ensures appropriate mitigation measures are maintained or created.



Figure 3 - Image outlining the future extent of the Yallourn Open Cut Coal Mine.

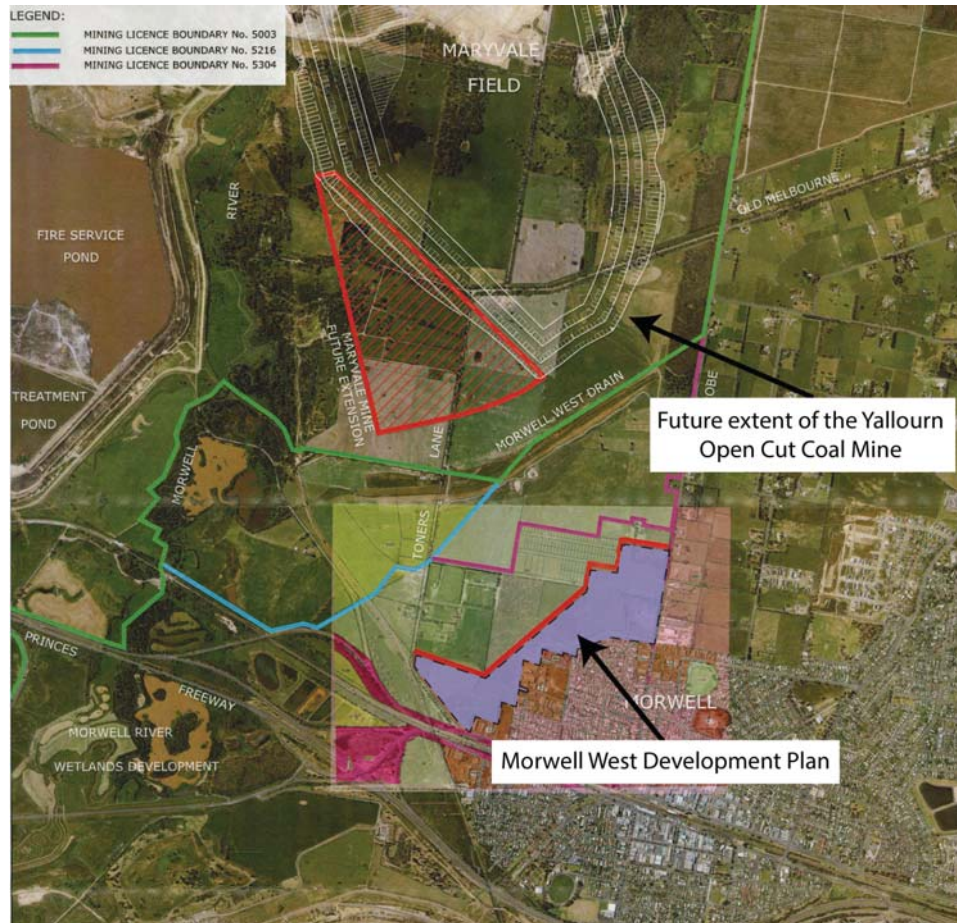
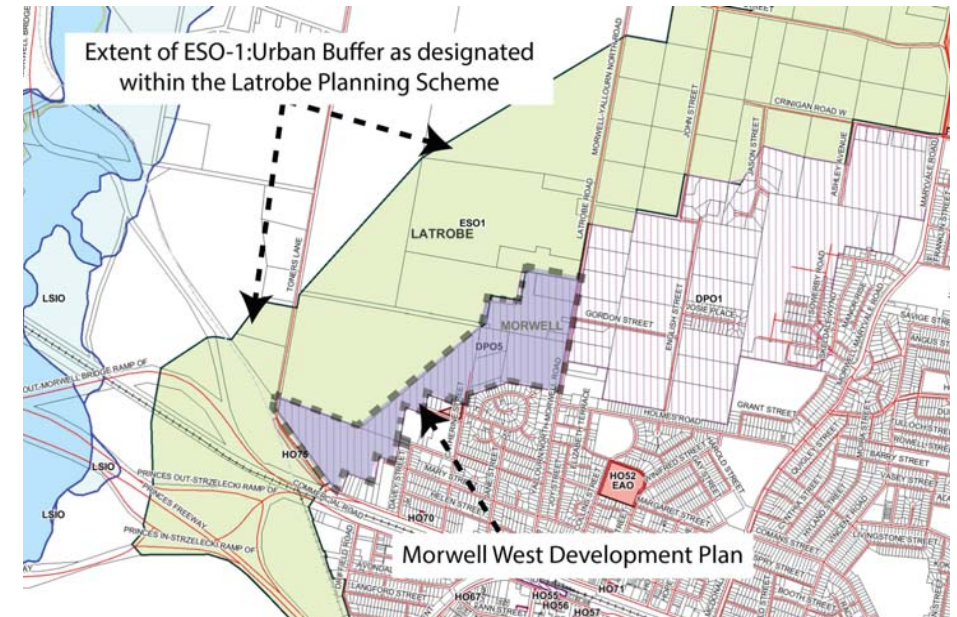


Figure 4 - Location of the existing Urban Buffer for the Yallourn Open Cut Coal Mine.



### 3 Site Assessments

#### 3.1 Traffic Engineering

A Traffic Engineering Assessment was prepared by Salt<sup>3</sup> (Appendix 8). In the context of the existing site conditions, the assessment details the following:

- Latrobe Road to the east of the MWDP is a Road Zone Category 1 Road, managed and maintained by VicRoads. It has a carriageway width of approximately 11m providing one trafficable lane in each direction set within a road reserve of approximately 20.3m. The road has a sealed surface and upstanding kerb and channel is provided along both sides of the road. The speed limit in the vicinity of the precinct varies between 60km/h and 80km/h and increases to 100km/h further north.

*Photo 4 - Looking along Latrobe Road*



- Toners Lane is a rural 'no through road' that provides one trafficable lane in each direction with unsealed shoulders. Within the proximity of the site it has a road width of approximately 6.6m at the southern end and reduces to 5.8m at the northern end and is set within a wide road reserve. Toners Lane provides access to Princes Drive in a left turn out arrangement.

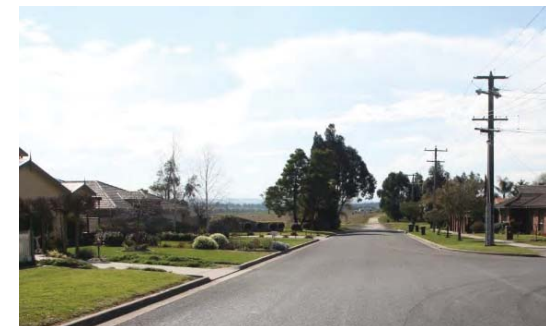
*Photo 5 - Looking along Toners Lane*



- A variety of collector roads and local streets abut the site to the south east of the MWDP area within the developed urban area. The pavements of these roads vary in width from 4.0m to 9.3m and are generally set within reserves of approximately 20m. Upstanding kerb and channel is common within these reserves, and footpaths are intermittently available. Speed limits within the local roads are generally 50km/h and parallel parking often occurs along either side of the streets.

- The Morwell Railway Station is approximately 1.2km from the site and provides hourly V/Line rail services and includes a bus terminal.
- There are five local bus services available within close proximity to the site. It is noted that the MWDP envisages the provision of a new bus route and bus stops.
- Well-constructed footpaths are available within existing local streets providing for walkability.
- The precinct is within a reasonable distance of existing bicycle networks as identified within the Latrobe City Bicycle Plan.

*Photo 6 - Looking along local street network (Catherine Street) in vicinity of the site*





### 3.2 Ecological Considerations

An Ecological Assessment has been prepared by Paul Kelly & Associates and is included as Appendix 9. It is noted that the original assessment (prepared in October 2013) was revised to reflect changes in ecological characteristics since the preparation of the initial report, changes to permitted clearing regulations, and feedback as received from the Department of Environment and Primary Industries (DEPI) and Latrobe City Council.

The revised assessment provides the following description of the existing conditions:

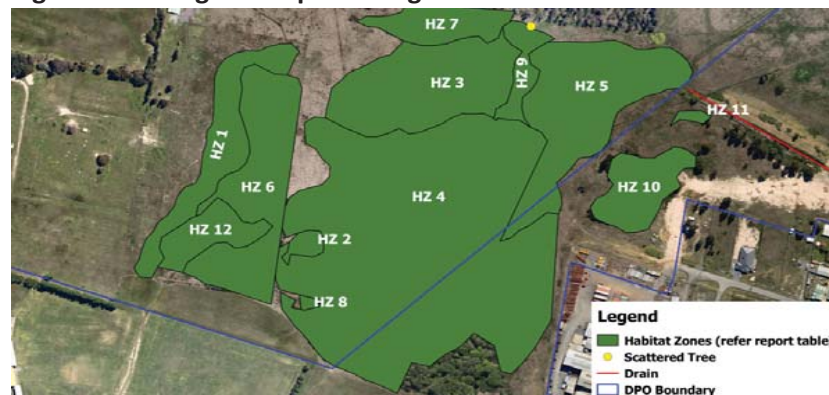
- The ecological significance of the site has been reduced by historic and current land use practices. Vegetation on site is highly modified and is dominated by exotic plant species.
- The cleared agricultural land to the north and south of the site does not contain any ecological constraints to residential development. No threatened species of flora or fauna were recorded during the field assessment and there is little likelihood of any threatened species utilising these grossly modified areas.
- The Council Reserve is the only area that contains native vegetation and potential fauna habitat. In its present state, this native vegetation makes very little contribution to the sustainable conservation of biodiversity in

the vicinity. It is suggested that considerable improvement in the biodiversity values and assets of the site could be provided by appropriate development design that incorporates constructed wetlands; particularly if it was considered in conjunction with the conservation management of the adjoining Toners Lane Reserve.

- The Council Reserve contains twelve remnant patches of native vegetation (refer to Figure 5). The bioregional significance of the extant remnant patches is considered to be low due to a low species richness and poor structural diversity.
- The patches of native vegetation are considered to be highly modified remnants of native vegetation that have developed in response to major historic disturbance of both the site and its catchment.

- A recent fire (post the initial site assessment in January 2013) has had considerable impact on the ecological values of the Council Reserve, with the removal of the tea tree overstorey encouraging the regeneration of ground layer plants such as Blackwood (*Acacia melanoxylon*), Kangaroo Grass (*Themeda triandra*), and Weeping Grass (*Microlaena stipoides*).
- Vegetation situated on the subject site falls within 'location A' (lowest risk category). However, because of the extent of vegetation situated within the development plan footprint, vegetation removal is to be assessed under the 'Moderate Risk-based Pathway' pursuant to the permitted clearing regulations (refer to Appendix 9).

**Figure 5 - Ecological Map showing habitat areas within the Council Reserve.**





### 3.3 Infrastructure Servicing

An Infrastructure Services Report was prepared by Millar Merrigan (October 2014 - V2) at Appendix 10. The report provides an assessment of the infrastructure available within the area and its ability to service the Development Plan area. The report provides the following summary of existing conditions:

- Topographically the land is generally flat in the southern and central precincts with a gentle rise in the northern section. There is a centrally located, north south orientated depression, which captures runoff from upstream catchments within the southern area of land abutting Toners Lane. There is also a large constructed open drain that takes run off predominantly from the northern portion of the site.
- There are some existing flooding issues within the Toners Lane Reserve which will be mitigated by the development of the precinct as proposed (refer to Section 3.5 below).
- There are existing sewerage services within the area that can be utilised to service the Development Plan area.
- Reticulated water is available within the area and can be extended to service the Development Plan area.
- Existing 22kV overhead electricity lines are available within Toners Lane, Latrobe Road and the abutting residential area. These services can be extended within the Development Plan area to service future allotments. Discussions with Ausnet Services (formally SP Ausnet) indicate a preference for underground cables within the development and the requirements for Kiosk Substations.
- Numerous gas mains are available to the Development Plan area from the existing urban area to the south east.
- Telstra telecommunication cables are available in the vicinity of the Development Plan area and can be extended to service the development.
- Advice from the West Gippsland Catchment Management Authority (WGCMA) is that while the subject area is located near an unnamed designated waterway on the western side and another at the north-east boundary, it appears to be outside any known flood overlays, and is not considered liable to major riverine type flooding.
- Rain-on-Grid Modelling has been undertaken by Water Technology and their report discusses stormwater runoff and overland flows.

Photo 7 - Existing open drainage channel



Photo 8 - Road side drainage along Toners Lane

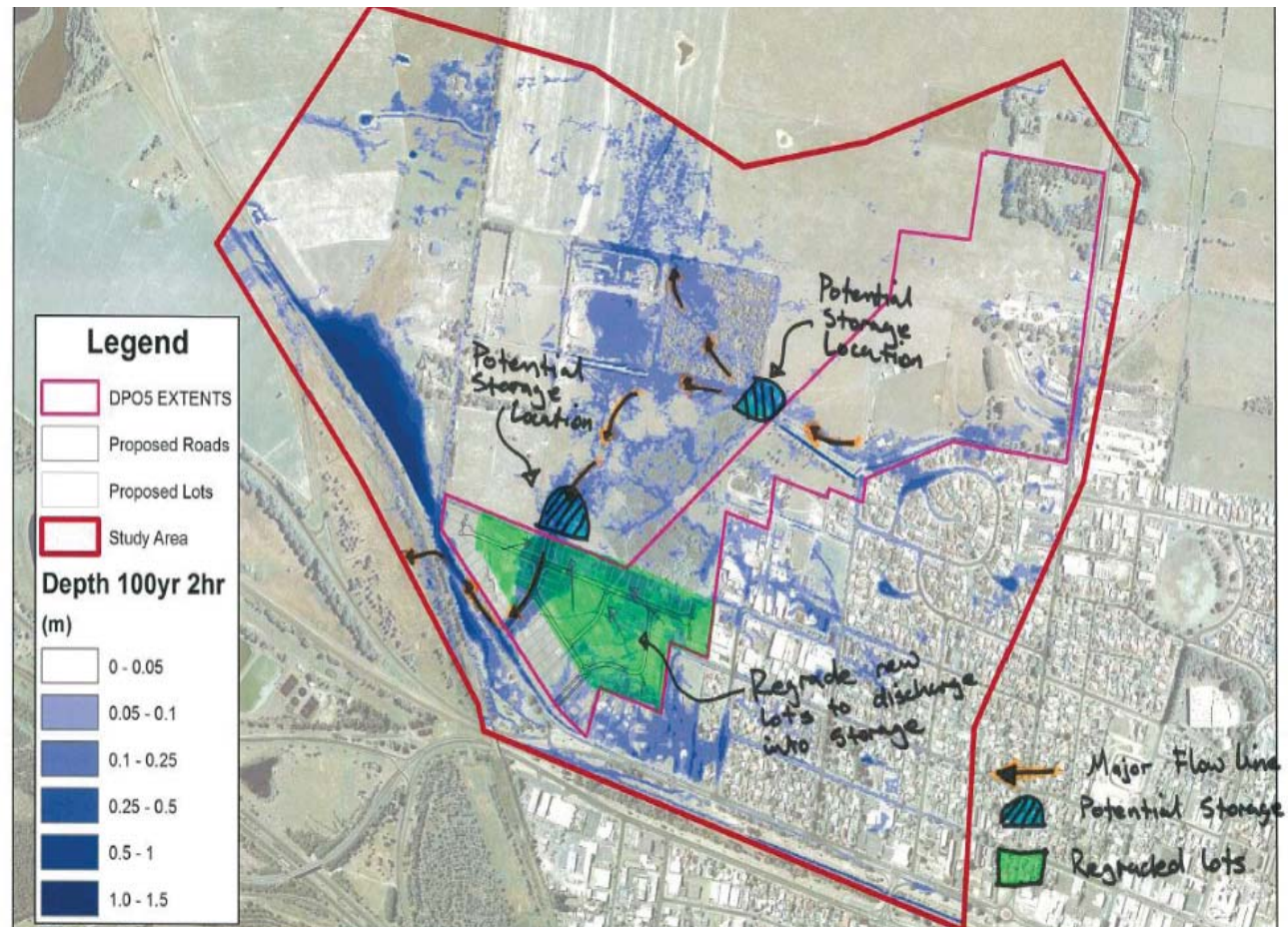


### 3.4 Rain-on-Grid Modelling

Rain-on-Grid (RoG) Modelling was undertaken at the subject site and the results included in a report by Water Technology (February 2013) (refer to Appendix 11). The report includes the following discussion on existing drainage conditions on site:

- Multiple overland flow paths within the greater area are impacting on the Development Plan area (refer to Figure 6).
- The major overland flow path affecting the area emanates from the Catherine Street table drain where approximately half of the flows move north with the remainder moving in a southerly direction back through the Development Plan area.
- RoG modelling has shown that external flows move into the subject site at various locations throughout the development. The most significant of these being a north south flow path from the southern precinct. Any development will need to consider these flows when developing a layout.
- Many options are available for the management of both site specific stormwater flows and external overland flows. Following consultation with Latrobe City Council it has been decided to pursue the concept of offsite storage locations which would be combined with vegetated wetlands and landscaping to provide for an attractive park area and walking circuit.

Figure 6 - Potential offsite storage basin locations





### 3.5 Surface Water Management Strategy

A Surface Water Management Strategy was prepared by Water Technology (September 2014) (refer to Appendix 12). The management strategy incorporates a hydrological study of the existing, developed and mitigated conditions, as well as a water quality impacts analysis. The main findings of the assessment include:

- The 'under existing conditions' surface water flow is largely informal with water flowing in broad overland flow paths. Some of these flows move north towards the Latrobe River floodplain (causing extended inundation) and some move west towards the designated waterway connected to the Morwell River;
- The current proposal formalises the drainage conditions, which will result in less flooding inside the Council recreational land (north west of the development);
- In the fully developed scenario surface water leaves the site at two defined locations;
  - o Toners Lane Drain outlet; and
  - o The designated waterway at the north east boundary of the site;
- Flow which drains to the Toners Lane outlet requires additional attenuation to ensure flooding would not occur in Toners Lane Drain.
- If the development is staged, solutions have been identified which complement the ultimate solution for the study area.

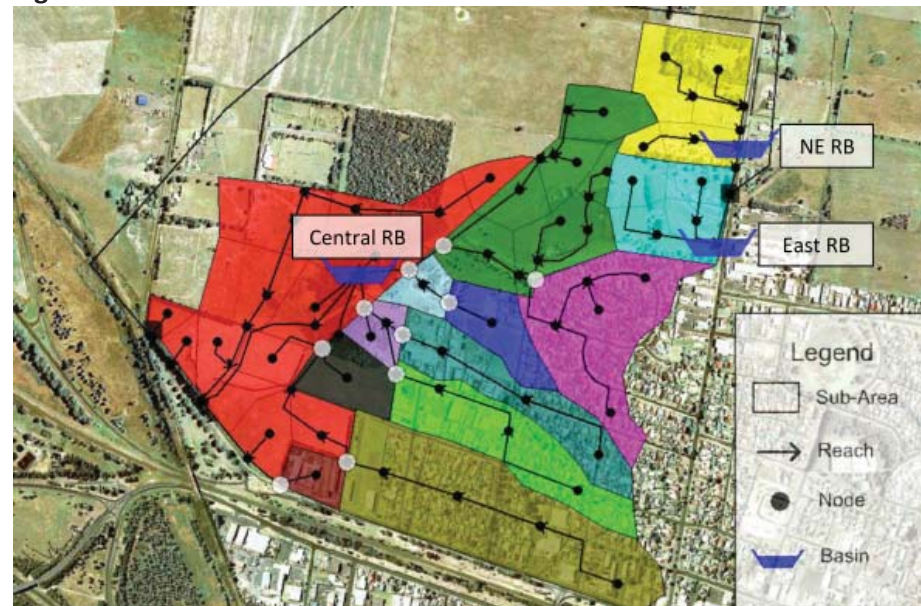
- For the westerly flowing land it is proposed that at least 28,000m<sup>2</sup> will be required as on site storage area to mitigate the developed flows to the maximum capacity of the existing outlet drain. To only manage the Stage 1 flows this storage footprint is reduced to 17,800m<sup>2</sup>.
- For the easterly flowing land it is proposed that at least 1,900m<sup>2</sup> will be required as on site storage area to mitigate the developed flows from the land scheduled for immediate development. The remainder of the easterly flowing land will be picked up by a retarding

basin with a footprint of approximately 2,800m<sup>2</sup> (refer to Figure 7).

- Water quality features will need to be incorporated into the design and have been shown to meet best practice requirements when sited within the retarding basin features.

It is noted that the amended Development Plan (refer to Appendix 3) has been informed by the recommendations of the Surface Water Management Strategy.

**Figure 7 - Recommended Basin Locations**





## 4 Consultation

The Morwell West Development Plan has been informed by consultation with relevant stakeholders and various authorities over a period of 24 months.

A landowner's workshop was held by Latrobe City Council on 30 August 2012 where a preliminary plan was tabled and the Development Plan process was explained and discussed. Similarly, preliminary consultation has also occurred with user groups of the Toners Lane Reserve.

As shown in Figure 8, the Development Plan has evolved and responded to feedback from landowners, Latrobe City Council officers and the Growth Areas Authority (GAA now the Metropolitan Planning Authority (MPA)).

A comprehensive review of an earlier version of the Development Plan was undertaken by Latrobe City Council and the GAA in July 2013. This review identified that the plan generally meets State and Local Planning Policy in relation to urban growth and in particular is in accordance with the Morwell Structure Plan. Some notable comments and design improvements were suggested by the GAA, specifically:

- The proximity of the site to the existing Toners Lane Reserve would not warrant the provision of additional open space. A cash contribution should be collected and utilised to improve the passive open space facilities between the Development Plan area and the Club facilities in the reserve;

- A vehicle link to Toners Lane should be provided;
- Active frontages to Toners Lane should be achieved;
- Active frontages to all reserves, including drainage reserves, should be achieved;
- Vegetation buffer on northern boundary where allotments are to directly abut farmland.

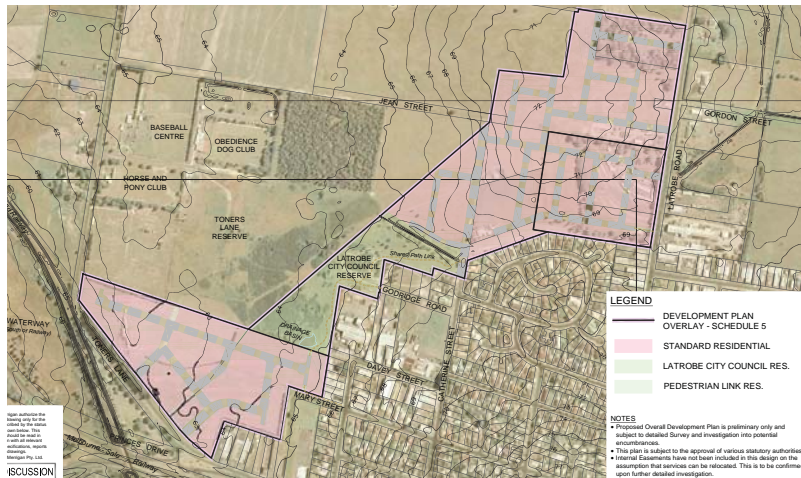
In preparing the Infrastructure Services Report, Millar Merrigan engaged in discussions with various servicing agencies including:

- WGCMA;
- Latrobe City Council engineers;
- Gippsland Water;
- Ausnet Services;
- APA Group/Envestra;
- Telstra/NBN.

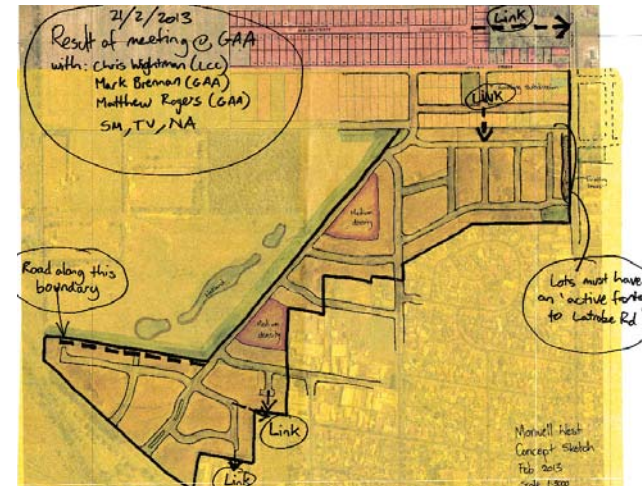
The Development Plan has been informed by the requirements and comments of these various authorities.

Figure 8 - Evolution of MWDP

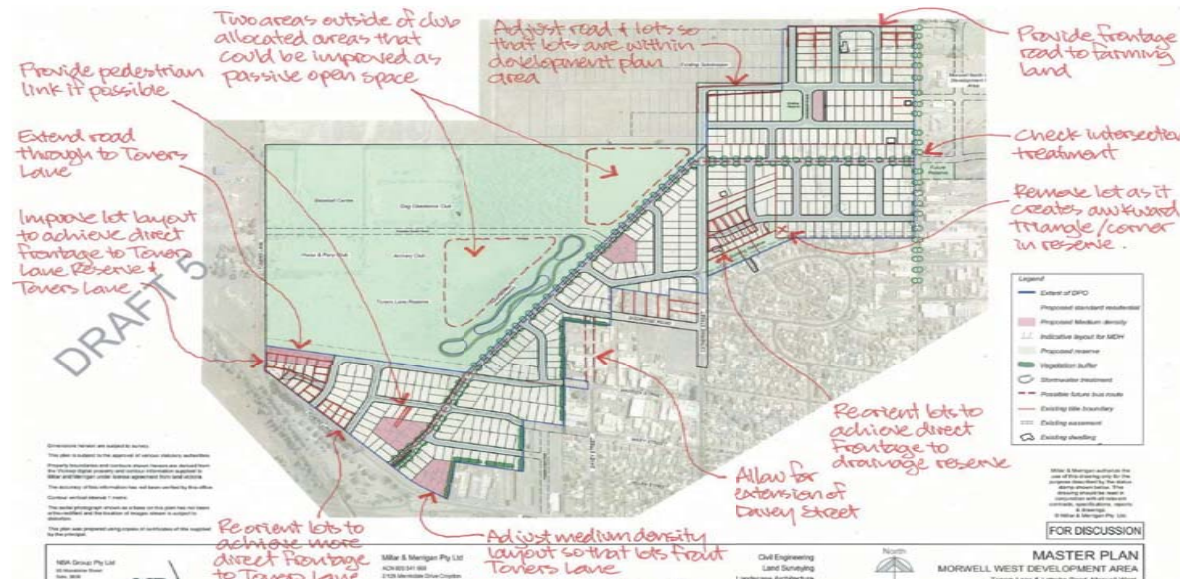
Concept to Latrobe Council November 2012



Comments provided by GAA February 2013



Comments provided by GAA July 2013



## 5 The Development Plan

The Morwell West Development Plan is illustrated in Figure 9 and Appendix 3.

The intention of the MWDP is to provide for an attractive, well planned community expanding on the existing urban areas at the edge of town and taking advantage of the land's generous abuttal to Toners Lane Reserve. It delivers an integrated and sustainable neighbourhood where future residents can choose from a range of housing types in high amenity settings. The MWDP provides for a mix of standard residential and medium density housing opportunities, with medium density sites strategically positioned in well located, accessible areas.

The overall neighbourhood design has been influenced by the natural features of the site and the interfaces with neighbouring uses. The design ensures that streets are well connected and easy movement through the neighbourhood and to surrounding urban areas is provided. The provision of shared paths within road reserves and public open spaces will provide a pleasant environment for residents to walk and cycle through the neighbourhood and encourage active modes of travel.

Drainage, wetland design and Water Sensitive Urban Design (WSUD) techniques will add to sustainability in terms of capture, use and treatment of stormwater and it is intended that a wetland area be provided within Toners Lane Reserve. Landscaping around the wetlands will improve ecological integrity and provide habitat potential for native flora and fauna.

The key elements of the plan are detailed in the following chapters of this report.



Figure 9 - Morwell West Development Plan



## 5.1 MWDP Principles & Objectives

The MWDP has been prepared in accordance with a series of strategic objectives based around best practice approaches to growth area planning established by the MPA and Clause 56 of the Latrobe Planning Scheme. The MPA Precinct Structure Planning Guidelines provide clear objectives and direction for delivering sustainable neighbourhood design in growth areas in metropolitan areas. These guidelines have relevance in Morwell, despite it being a regional centre, and have been applied to the growth area planning process and used to test the key elements of the plan.

The objectives of the MWDP are as follows:

### Community

- Encourage interrelated elements including safety, health, mobility, accessibility, quality of life and sense of place;
- Outline requirements to ensure that infrastructure is delivered in a logical, equitable and timely manner alongside the various phases of the development.
- Promote healthy lifestyles and strong diverse communities through well designed public spaces and access to community facilities that meet the needs of local residents;
- Provide access to a variety of open spaces (parks, gardens and reserves) for relaxation and recreation;
- Create strong local character through distinct natural and cultural features as well as the urban form;

### Housing:

- Provide housing that meets a range of population needs as the community ages and grows over time;
- Provide for a density of development that is in keeping with the character of the periphery of the Morwell township;
- Provide a range of lot sizes and housing styles;
- Locate higher density housing within and around high amenity areas;
- Providing housing flexible enough to meet the needs of households as they move through life cycle changes;
- Ensure subdivision and housing is designed to promote active frontages to roads and public open space, including medium density and corner lots.

### Implementation

- Identify appropriate mechanisms to ensure that future development is generally in accordance with the objectives of the MWDP.
- The objectives for implementation are: to ensure that subsequent development is generally in accordance with the MWDP, has regard to logical 'on the ground' outcomes, and ensures that development occurs in a logical and equitable manner.

### Access and Movement

- Provide legible street networks that are clear and easy to navigate;
- Create well connected streets that integrate with the wider area;

- Provide links to existing pedestrian and cycling networks;
- Distribute traffic evenly throughout the local street network;
- Provide safe and efficient walking, cycling, public transport and vehicle access to connect residents directly to open space and community facilities within and adjoining the Development Plan area;
- Ensure that all areas can be adequately and efficiently serviced by public transport;
- Ensure street and urban form are designed to cater for people's choice in movement – walking, cycling, public transport, car and other motorised vehicles;
- Encourage walking, cycling and public transport to reduce carbon emissions.

### Environment

- Increase environmental sustainability and urban water management;
- Provide opportunities for integrated water management, including WSUD and re-use of stormwater;
- Protect and enhance the environmental values and significant landscape features of the area;
- Protect the built environment from flooding, inundation and stormwater drainage;
- Ensure that significant areas of native vegetation and other important habitat areas are protected and enhanced where appropriate.

## 5.2 Land Budget

The Land Use Budget at Table 2 should be read in conjunction with the MWDP.

The MPA Precinct Structure Planning Guidelines provide the following definitions used in the land budget:

- **Encumbered Land** is constrained for development purposes. Includes easements; retarding basins/wetlands; landfill; conservation and heritage areas. This land may be used for a range of activities (e.g. walking trails, sports 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.
- **Net Housing Density** is the number of houses divided by the net developable area.

**Table 2 - Land Budget**

	Ha
<b>TOTAL AREA OF TITLE</b>	43.13
<b>ENCUMBERED LAND</b>	3.28
<b>GROSS DEVELOPABLE AREA</b>	39.85
<b>OPEN SPACE (UNENCUMBERED)</b>	0.60
<b>NET DEVELOPABLE AREA</b>	39.25
Proposed Road Reserves	11.00
Medium Density Sites	1.59
Residential Lots	29.73
<b>RESIDENTIAL ALLOTMENT AREA - ROADS AND LOTS (INCLUDES EASEMENTS)</b>	<b>42.32</b>



## 6 Land Use Framework

### 6.1 Housing Density

The MWDP aims to achieve an urban neighbourhood that provides for a density in accordance with the applicable zoning requirements while responding to the residential character of the periphery of the Morwell township.

In accordance with the requirements of DPO5 and Clause 56 of the Latrobe Planning Scheme, the MWDP provides for a range of lot sizes to provide for housing diversity and choice.

**Table 3 - Housing Density**

Lot Type	Average Lot Size	Total Lots
Standard density	700sqm	421
Medium density	440sqm	36

Assuming the average lot size, the MWDP will yield approximately 457 allotments, representing an overall density of 12 dwellings per hectare. It is noted that the preferred density in metropolitan growth areas is 15 lots per hectare and that the Latrobe City Council has determined that a density of 11 dwellings per hectare is the preferred density measure for growth areas associated with major towns in the municipality. It is considered that in these circumstances a density in the order of 12 dwellings per hectare is an acceptable response and the provision of a variety of allotments, suited to the needs of future residents, is considered to be the best long term community outcome.

### 6.2 Housing Diversity

The MWDP provides a diversity of choice for future residents and will cater for housing affordability, growing households and ageing in place. The MWDP provides for a mix of housing types including:

- **Standard Residential Allotments** - The majority of the MWDP area is to be developed for standard residential purposes, that is allotments with an average size of approximately 700m<sup>2</sup>. Assuming this average lot size, the MWDP provides for approximately 421 standard residential allotments.
- **Medium Density Residential Allotments** - are proposed throughout the MWDP area and are strategically located in high amenity areas or key locations where access to local facilities and services is readily available. There are four medium density sites proposed throughout the MWDP area, which based on an average developed lot size of 440m<sup>2</sup>, provide for approximately 36 medium density lots. The medium density sites are situated:
  - Adjacent to reserves, where residents will be afforded with attractive outlooks from their homes and easy access to open space for recreational purposes;
  - Within close proximity to Toners Lane/Princes Way. Residents of these homes will be afforded with convenient access to the town centre and ready access to public transport.

### 6.3 Community Facilities

In accordance with the Morwell Structure Plan contained in Clause 21.05 of the Latrobe Planning Scheme, the entire area of land is dedicated to residential purposes with no new neighbourhood centre or community facilities proposed or required.

The MWDP expands on existing urban areas and takes advantage of the area's proximity to existing community facilities within the Morwell CBD. In addition to existing facilities, new facilities are proposed within the Morwell North West Development Plan area to the east and are accessible from the MWDP area.

The land is zoned for residential purposes where varying uses are permitted and as such scope is available for the future development of a local community centre if the demand presents.

## 6.4 Industrial Interface

An assessment of nearby industrial uses which have the potential to adversely impact the proposed development was undertaken by Marshall Day Acoustics (September 2014). Their findings determined that significant noise attenuation measures were required along Latrobe Road (adjacent to AKZ Engineering - refer to Appendix 13). These include:

- To enable compliance with the Noise from Industry in Regional Victoria (NIRV) Recommended Maximum Noise Levels (RMNLs) the proposed development adjacent to AKZ Engineering (80 Latrobe Road, Morwell) will require significant shielding in the form of a noise barrier.
- This barrier will be required to be 3m high and constructed of a material with a minimum density of 12-15kg/m<sup>2</sup>.
- Some suitable materials include 25mm thick timber (overlapped), 18mm thick Perspex, 8mm thick fibre-cement sheet, 75mm thick Hebel Powerpanel, concrete, brick or any other approved material that meets the weight specification can be used.
- If required, portions of the acoustic barrier may be constructed from a transparent material such as 18mm Perspex.
- The acoustic fence must be free of gaps and penetrations and it is particularly important to ensure that there are no gaps at the bottom of the noise barrier. It is common practice to require that a portion of the bottom of the barrier (say 10-20cm) be buried in the ground.

- For the barrier to be effective for the lots adjacent to the AKZ Engineering interface the dwellings should only be single storey.

As detailed within the Noise Assessment, noise levels at the Lend Lease interface complied with the applicable standards, whilst the EPA has confirmed that it is satisfied with the proposal subject to the recommendations of the Noise Assessment being referenced within the Development Plan.

In the context of existing industrial uses, it is noted that the onus will be on new residential development to ensure that potential impacts are appropriately managed.

Subject to these measures being imposed as part of a planning permit, the Noise Assessment report found that the Development Plan layout would be suitable. It is expected that the recommendations of the Noise Assessment report will be considered and implemented at the time planning permits are granted for subdivision.

There are a number of nearby Industrial (IN3Z) and Mixed Use (MUZ) zoned parcels of land. The Site Analysis Plan (Appendix 2) indicates the zoning and current land uses of these properties.

The Morwell Structure Plan contained in clause 21.05 of the Latrobe Planning Scheme shows these abutting areas as 8a and 8b as shown in Figure 11. Clause 21.05-5 contains the following

applicable strategy:

*Review the existing Industrial Areas 8a, 8b, and 8c with a view to confirming the role and viability of this area as service industrial development or conversion to residential development.*

The possibility of the area of land zoned IN3Z to be revitalised and potentially rezoned has been contemplated in the Development Plan and provision made for possible future roads. If the land remains within the IN3Z it is noted that this zone specifically provides for sensitive interfaces and the Purpose of the zone includes:

*To ensure that uses do not affect the safety and amenity of adjacent, more sensitive land uses.*

In the context of new industrial uses, the onus will be on the applicant to acknowledge the sensitivity inherent in being adjacent to residential land. The use of land for 'industry' and 'warehouse' are section 2 uses under IN3Z whereby a planning permit will be required. All of the section 1 uses ('as of right') under the IN3Z are considered to have a low impact on residential amenity.

It is noted that the Purpose of Clause 52.10 of the Latrobe Planning Scheme is: *To define those types of industries and warehouses which if not appropriately designed and located may cause offence or unacceptable risk to the neighbourhood.*

The Table to clause 52.10 sets out a range of threshold distances which are applied to certain uses and form a permit trigger (or other control) for some zones.

It is reasonable to consider the 'reverse amenity' implications of residential development in the vicinity of existing industrial uses. It is noted that the majority of nearby land uses are not listed as 'uses with adverse amenity potential' and as such it is deemed that they are unlikely to have an adverse impact on the amenity of the neighbourhood.

Table 4 identifies uses that are subject to threshold distances.

**Table 4 - Industrial threshold distances (to be assessed at the planning permit stage).**

Address	Zoning	Existing Use	Threshold
75-77 Latrobe Rd	IN3Z	Panel Beater	100m
27 Davey Street	IN3Z	Joinery	100m

Any future subdivision will need to have regard to adjacent uses and any noise/amenity considerations as part of a site analysis required under Clause 56.01-1 of the Latrobe Planning Scheme and provide an appropriate design response. It is expected that site specific interface treatments will be adopted to the satisfaction of the Responsible Authority and that these will likely include treatments such as:

- Deeper lots abutting IN3Z land such that buildings can have increased setbacks to IN3Z interfaces;
- Fencing that may include higher than standard solid fencing to provide a visual barrier;
- Landscaping either through the retention of existing vegetation (see photo 9) or new landscaping (see Figure 10) to provide an

attractive transition between residential and industrial areas and to assist in creating an overall residential amenity;

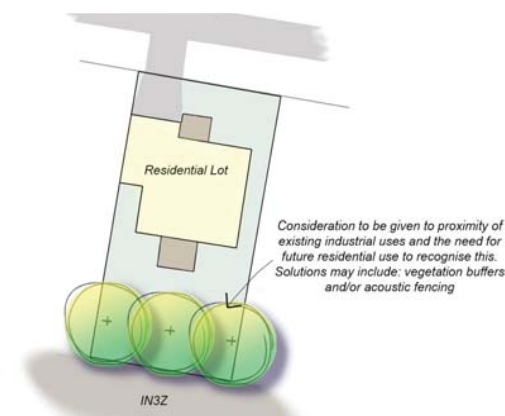
- Noise assessment requirements;
- Open space reserves;
- Other measures that may be appropriate to respond to specific site conditions and adjacent uses.

Design considerations for lots with an industrial or Mixed Use Zone interface (in addition to lots adjacent to public open space) are to be addressed through the preparation and implementation of Design Guidelines, as appropriate, as part of the planning permit stage. The Design Guidelines are to be prepared to the satisfaction of the Responsible Authority.

An urban design response must accompany the detailed design for the acoustic wall to ensure appropriate urban design outcomes are achieved as part of a permit application for the subdivision of Phase A (Latrobe Road). The design response is to address considerations such as: safety, interface with public open space, landscaping and pathways, and maintenance obligations (including obligations relating to graffiti removal). The acoustic wall is to be constructed at the developer's cost.

Further to this, any planning application for the development of Phase B is to involve verification of the noise assessment (and additional assessments if required) for land situated adjacent to the Lend Lease depot and mitigation measures are to be employed accordingly. This further consideration is required in response to the submission from Land Lease that noise levels from their site are higher than those assessed in the Noise Agreement.

**Figure 10 - Industrial allotment interface sketch**

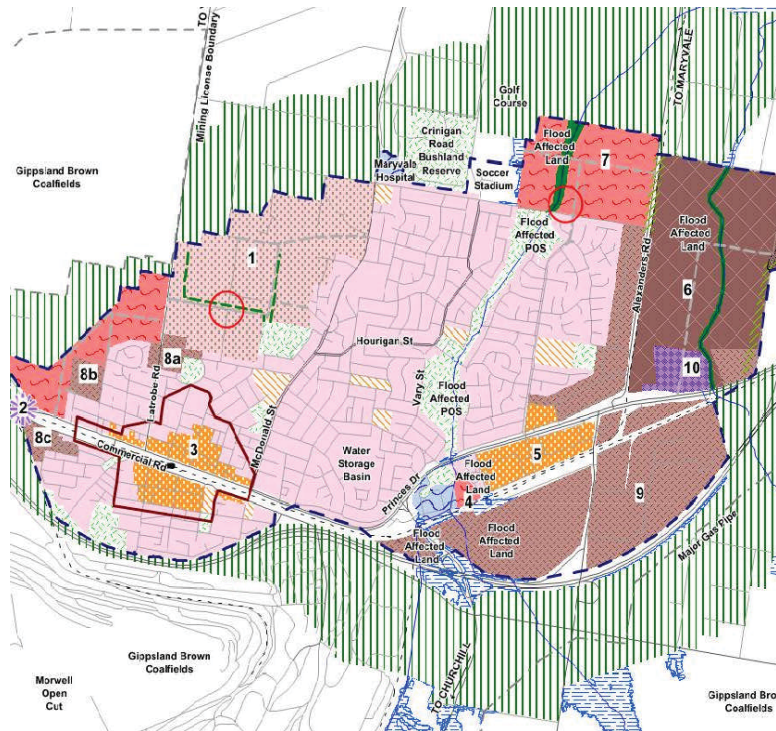


**Photo 9 - Existing vegetation offering buffering**





Figure 11 - Morwell Structure Plan



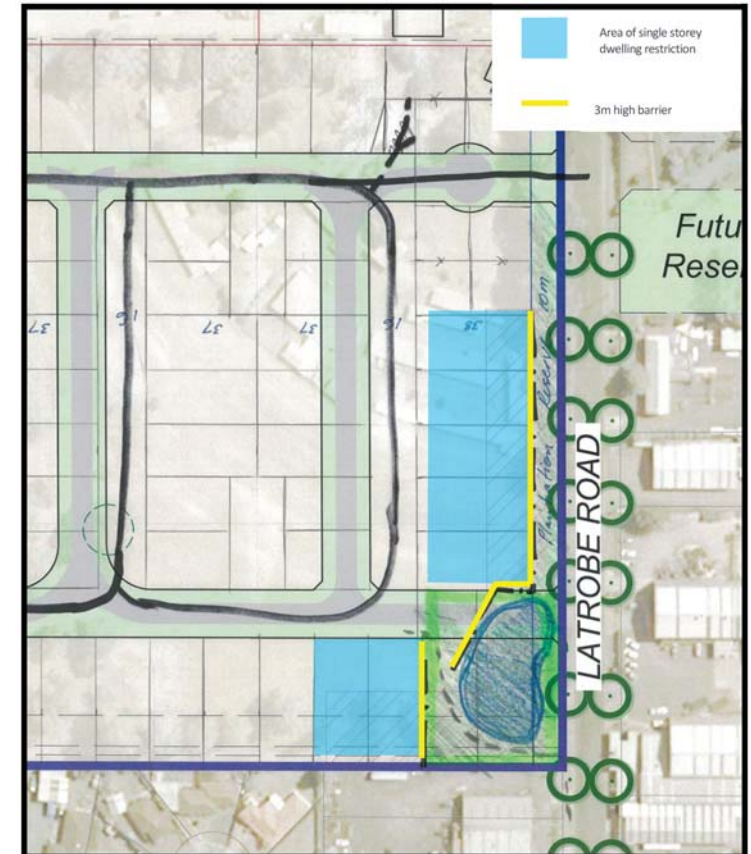
Legend

- Township Boundary
- Non-Urban Land
- Existing Open Space
- Proposed Public Open Space
- Existing Urban Areas
- Existing Residential Opportunity
- Future Residential
- Primary Activity Centre
- Existing Industrial
- Future Industrial
- Future Bulky Goods
- School
- Major Institutional Facility
- Urban Coal Buffer
- Existing Floodplain
- Industrial Buffer
- Existing Airport Environs Overlay
- Transit City Precinct
- Town Entrance
- Possible Future Neighbourhood Centre
- Rivers/Creeks

Transport Infrastructure

- Main Roads
- Roads
- Rail Line
- Train Station
- Future Road Connection
- Future Pedestrian Link

Figure 12 - Latrobe Road interface sketch plan



## 7 Open Space

A well planned network of open space is available to the MWDP area and will provide recreational opportunities for the community as well as catering for stormwater treatment and retardation.

Council's adopted Public Open Space Strategy (May 2013) defines open space as:

*Publically accessible land that is set aside for recreation, leisure, sport, conservation and/or associated environmental and urban design functions.*

The strategy aims to employ the following policy:

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

Specifically in relation to Morwell, the strategy states the following:

- Morwell has less open space (10.72ha/1,000 people) than the average within residential areas of the City (i.e. 17.62ha/1,000 people).
- Open space appears appropriately distributed across Morwell. However, there are gaps in linkages connecting to the CBD.
- The future residential growth area north east and west of Morwell – Latrobe Road presents a further opportunity for establishment of a District reserve.
- There may be opportunities to extend Waterhole Creek linear pathway to the north

(future residential area, north of Crinigan Road), including a connection to Crinigan Bushland Reserve.

- The form of the town is severely constrained by the mining operations to the south of the CBD, which means that growth is, and will continue to be asymmetrical.
- There are opportunities to establish defined walking trails / open space corridors around the town (refer to maps which follow this section, i.e. p58).

The strategy discusses open space roles, functions and hierarchies. It identifies the Toners Lane Reserve as a Parkland – Special Use Reserve which is described as:

*Open space reserves set aside to accommodate a range of special uses. Uses will vary depending on individual site requirements, however may range from specialist horticulture (e.g. botanic gardens, nursery), ornamental/amenity functions, memorial sites and the like, through to caravan parks and specialised community clubs/groups etc.*

The hierarchy and desired distribution for residential areas is defined in the strategy as follows:

- **Local** - The majority of houses in residential areas should have access to a minimum of 0.5 hectares of public open space within a 500 metre radius.

- **District** - The majority of houses in residential areas should have access to district level public open space within a 3 km radius.
- **Regional** - Each town with a population of over 10,000 people should have access to regional standard public open space venue/s.

The MWDP is well serviced by existing open space reserves including Toners Lane Reserve and two smaller local reserves which are located in the northern portion of the Development Plan area. As a result, the majority of future households will be within 500m walking distance of a local park.

Given the location and size of the existing reserves, no additional land is required to be set aside for open space purposes. Whilst no additional land is required for open space, the new community will generate the embellishment and upgrade of the existing open space reserves. In accordance with Clause 52.01 of the Latrobe Planning Scheme and the provisions of Section 18 of the Subdivisions Act 1988, a contribution from the landowner will be required to a maximum of 5% of the site value at the subdivision stage.

In addition to the Toners Lane Reserve, one existing local reserve and three proposed reserves fall within the MWDP area within the eastern precinct. There are also nearby reserves proposed within the broader MNWDP area (refer to Figure 13).

There is an existing pedestrian link between the existing southern reserve and Bellarine Circuit but it is noted that this reserve has not been developed and is currently underutilised as open space (see photo 10). It is expected that existing reserves will be improved by the abutting landowners (as identified within the MWDP) as development occurs (refer to Chapter 14 - Implementation for further details).

Photo 10 - Existing undeveloped reserve



Where lot boundaries adjoin public open space, these interfaces should be designed to ensure surveillance of the public realm and avoid lengthy blank walls. This is to be implemented through design guidelines at the planning permit stage.

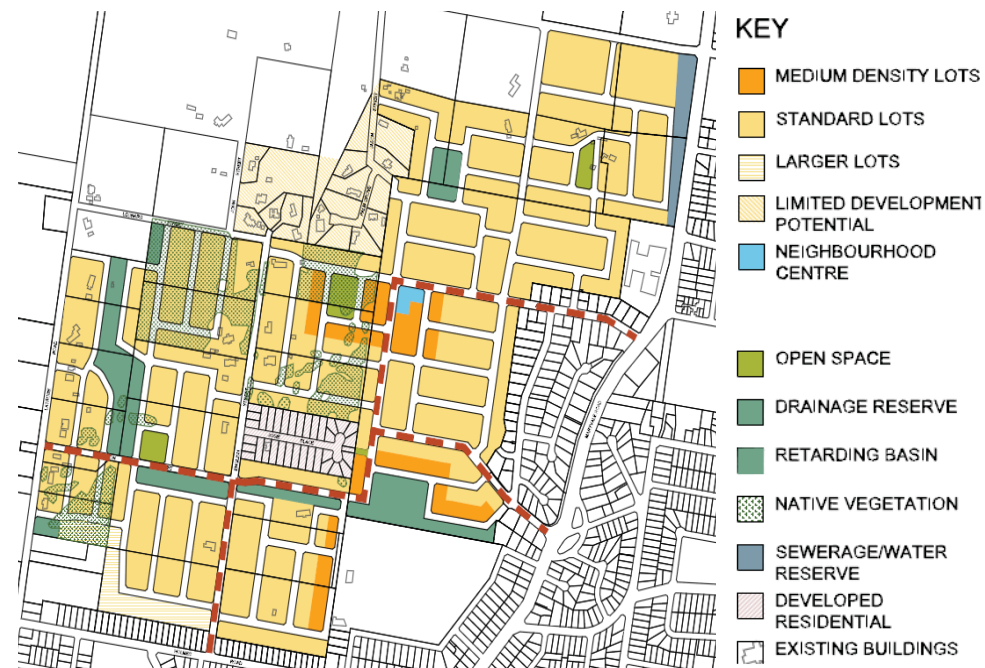
Proposed works within the existing reserves will create corridors and links in accordance with the intent of the Open Space Strategy. They will not only cater for excellent circulation through the provision of shared paths and trails, but will also be developed into attractive and useable spaces for residents to enjoy.

The vegetated areas within the Toners Lane Reserve will be built upon, providing opportunity for habitat connections and improvements to the existing landscape character of the area.

The Landscape Master Plan (Appendix 7) indicates the intended overall landscape treatments for public areas to guide future development. The detailed design of these facilities should be considered at the subdivision stage.

The 5% open space contribution will be in the form of a cash payment and/or works in kind, as agreed at the permit stage, and will be utilised for the upgrade/enhancement of the Toners Lane Reserve around the proposed retarding basins.

Figure 13 - MNWDP





## 8 Landscape

Given the land use history of the area, landscape values are currently limited. The MWDP presents the opportunity to enhance the values of the site and Toners Lane Reserve by establishing a landscape theme that provides a sense of place and community. A Landscape Master Plan (V6) for the site has been prepared and is attached at Appendix 7.

The MWDP proposes avenues of green streets designed to create visual interest and a leafy character for the development. The Landscape Master Plan suggests varying landscape themes to provide hierarchy amongst proposed roads. High branching large native canopy trees are suggested along the main entrances to the development with smaller signature plantings suggested along secondary streets.

The Toners Lane Reserve will be the primary area of open space for the development and is to incorporate both Water Sensitive Urban Design elements and recreational facilities. A wetland is proposed for stormwater treatment and provides the opportunity for native plantings that will be visually pleasing, provide for habitat of local fauna and fulfil the required stormwater filtration process to meet best practice design principles. The detailed design of the wetlands are to respond to and enhance the existing native vegetation and environmental values, and reflect a natural environment (to appear 'natural' rather than constructed). This includes giving due consideration to established habitat for Growling Grass Frog (see Chapter 10).

A shared path network is to be provided around the proposed wetland with larger canopy trees scattered throughout, creating an attractive recreational space for residents.

The two existing local reserves within the MWDP area will also be upgraded and subject to detailed landscape design to create attractive leafy spaces.

There is also scope for small entry feature reserves adjacent to the access ways into the MWDP area from Latrobe Road.

An indicative plant palette is suggested on the Landscape Master Plan and future subdivisions should implement species chosen from this palette and to the satisfaction of Latrobe City Council.

*Photo 11 - Example wetland treatment*



*Photo 12 - Example street tree plantings juvenile*



*Photo 13 - Example street tree plantings mature*



## 9 Native Vegetation

As detailed within Section 3.2 above, the ecological significance of the site is limited as a consequence of current/historic land use practices. For the most part, the vegetation is highly modified and dominated by exotic plantings. Figure 14 identifies remnant patches of native vegetation situated within the MWDP (and the adjacent reserve where works are to be undertaken). A planning permit will be required to remove any native vegetation, pursuant to Clause 52.17, noting that existing native vegetation should be retained and enhanced wherever possible.

The revised Ecological Assessment (refer to Appendix 9) details that significant measures have been taken within the MWDP to mitigate against potential impacts on native vegetation. Such measures have included siting the proposed development in an area which inherently has low biodiversity values and designing the storm water management ponds in a manner that will provide more secure habitat for native fauna species.

Importantly, the assessment outlines that further improvements can be realised by using indigenous species of flora in future landscape treatments, and by improving the management of pest plants and animals.

In addition to this, it is the expectation that the design of the stormwater ponds is to restrict the extent of vegetation removal to the minimum extent necessary to create a functional drainage layout and incorporate existing native vegetation where possible to promote existing ecological characteristics within the development.

A detailed Biodiversity Impact and Offset Requirements Report (dated November 2014) has been prepared as part of the revised Ecological Assessment. The report establishes that to offset the removal of native vegetation from within the development footprint, 0.482 General Biodiversity Equivalence Units (with a minimum Strategic Biodiversity Score of 0.122) need to be sourced from within the West Gippsland Catchment.

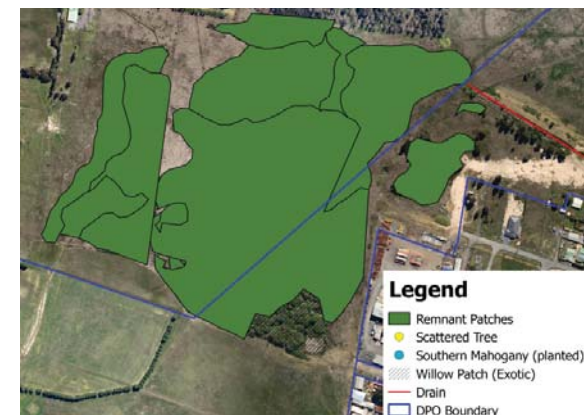
It is noted that as works identified within MWDP are to be staged, provision for biodiversity offsets within future planning permits will reflect the extent of vegetation removal associated with each stage of the development (hence the offset requirements detailed within the Biodiversity Impact and Offset Requirements Report reflect the total offsets requirements for the full development of the MWDP, whilst the offset requirements for each stage will be determined as part of the planning permit process).

By employing measures aimed at avoiding and minimising the need for vegetation removal during the detailed design stage, total offset requirements could be less than that detailed within the Biodiversity Impact and Offset Requirements Report. Irrespective of this, native vegetation offsets associated with the construction of drainage infrastructure are to be calculated as a whole but delivered in stages as appropriate.

The developer/landowner who will deliver the first stage of the central retarding basin must prepare a functional design for the entire central retarding basin/wetland which clearly shows the vegetation to be removed for each stage of construction. The functional design of the central retarding basin/wetland is to incorporate the retention of native vegetation where possible.

Once the functional design is approved by Council it will form the basis for calculation of the native vegetation offsets. Each developer/landowner constructing a stage of the central retarding basin is responsible for the native vegetation offsets associated with the removal of native vegetation relevant to their respective stage of construction of the central retarding basin/wetland. The associated offset will be the relevant proportion of the total offset required for the entire development area.

**Figure 14 - Extent of native vegetation with the MWDP.**



## 10 Fauna

The revised Ecological Assessment (Appendix 9) identifies several species of indigenous fauna as potentially occurring within the vicinity of the site. However, due to the highly modified vegetation, the absence of permanent open water, the proximity to intensive industrial and residential development, and the likely presence of foxes, the potential use of the site by indigenous species is limited.

This finding is consistent with feedback received from DEPI which detailed that *“it is unlikely that any potential impacts on existing biodiversity values will have statewide implications”*.

Irrespective of this advice, the Development Plan Overlay requires consideration to be given to the presence of threatened species: Growling Grass Frog (GGF) and Dwarf Galaxias. The following paragraphs summarise the findings as detailed within the revised Ecological Assessment.

### Growling Grass Frog

Due to the general absence of open water and the ephemeral nature of the wet areas, the potential use of the site by the GGF is considered to be very low. The only potential habitat for the GGF occurs in a drain to the north of the central precinct, however, a targeted GGF survey was completed for this drain in 2011 (CPG) and did not record the presence of the amphibian.

### Dwarf Galaxias

Based on the detailed site and desktop assessment, it is considered that the site does not contain critical habitat for the Dwarf Galaxias. Whilst the species was recorded in a wetlands area 2km from the site, it is considered very unlikely that the Dwarf Galaxias would utilise any habitat within the MWDP on a permanent basis. This is primarily due to the distant hydraulic linkages between known populations and the subject site, and the ephemeral nature of the wet areas situated within the development plan footprint. Subsequently, the revised Ecological Assessment outlines that a targeted survey for the Dwarf Galaxias is not expected to provide any significant additional information that will improve the confidence of decision making.

However, the assessment does detail that provisions for appropriately designed and constructed wetland areas, potentially in conjunction with storm water management infrastructure, would provide much improved and permanent habitat for both the GGF and the Dwarf Galaxias. A Construction Management Plan is to be prepared in relation to Dwarf Galaxias for any Phase of the development which involves works within the proposed stormwater wetlands.

Subsequently, the detailed design of the wetlands is to enhance the native vegetation and environmental values of the broader area. This includes designing the wetlands to respond to the habitat requirements of the GGF which will be achieved through the provision of open water and appropriate landscape treatment utilising local indigenous species naturally occurring within the Plains Grassy Woodland Ecological Vegetation Class (EVC55).

As detailed within the Ecological Assessment, referral of the development to the Federal Minister for the Environment is not considered necessary.



## 11 Bushfire

The entire precinct is designated as a Bushfire Prone Area (See Figure 15) whereby special bushfire construction requirements apply. In these areas the minimum construction level imposed by AS3959 – 2009 Construction of buildings in bushfire-prone areas is Bushfire Attack Level (BAL) 12.5. The BAL is increased as the bushfire hazard is increased, which in turn increases building cost and as such it is favourable for the lowest BAL possible to be applied.

No bushfire planning requirements are applicable however the MWDP has appropriately considered bushfire hazard to enable ease of future development on each lot.

The likely form of bushfire attack to the MWDP area is direct from grassfire either to houses or to the surrounding elements. The threat presents from farming land in the surrounds, Toners Lane Reserve and areas of the MWDP that remain undeveloped. The staging of the MWDP responds to the potential grassfire hazard with provision of perimeter roads along stage boundaries where possible.

Lots with proximity to the vegetated area of the Toners Lane Reserve may require application of higher BAL's depending upon Latrobe City Council's management of this area.

At the completion of the development, a grassland hazard will remain to the north of the Development Plan area as this is the urban/rural interface. A perimeter road is provided along all interfaces which reduces the risk and will enable construction of future dwellings to an appropriate BAL.

In addition to grassfire, new landscaping has the potential to present a bushfire hazard to lots. Future landscaping within existing and proposed reserves must consider bushfire risk. It is expected that detailed design required as a condition of permit for subdivision would consider landscaping to offer separation between vegetated areas and utilise low risk and non-combustible features where possible. These features include but are not limited to managed lawn, footpaths, rocks and water bodies.

**Figure 15 - Bushfire Prone Area**



## 12 Access & Movement

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

The internal road network has been designed in accordance with the Latrobe City Design Guidelines and feedback as received from Council. The proposed road network consists of a mix of Access Streets - Major, Access Streets - Minor, Access Places and Access Lanes, with an Access Street - Major providing the main access through the development from Latrobe Road to Toners Lane.

The development plan proposes two new intersections to Latrobe Road and three (or possibly four) access points from Toners Lane. The fourth access point (effectively the western extension of Madden Street) is constrained due to the road geometry. It can provide pedestrian access and potentially a left out movement only.

Given the shape of the subdivision and its integration with an existing urban area, four existing no through roads, Mary Street, Madden Street, Godridge Road and Catherine Street, may be extended to provide access to abutting areas at the time of subdivision. Direct driveway access to Latrobe Road should be avoided where possible and is subject to VicRoads approval. If direct driveway access is required, driveways should be shared between lots where possible.

A Traffic Engineering Assessment has been prepared by Salt<sup>3</sup> (Appendix 8) and discusses traffic impacts of the proposed MWDP.

### 12.1 Traffic Volumes

An assessment has been undertaken to determine the traffic volumes utilising existing surrounding roads and their ability to cater for increased traffic generated by the proposed development (refer to Appendix 8).

Table 5 below demonstrates that the majority of roads within the vicinity of the MWDP area are currently carrying significantly less traffic than they have been designed for.

The Traffic Assessment as undertaken by Salt<sup>3</sup> suggests that a standard density residential subdivision typically generates between 6.1 and 8.5 vehicle movements per day per dwelling, with 10% of daily volumes occurring in the AM and PM peak periods.

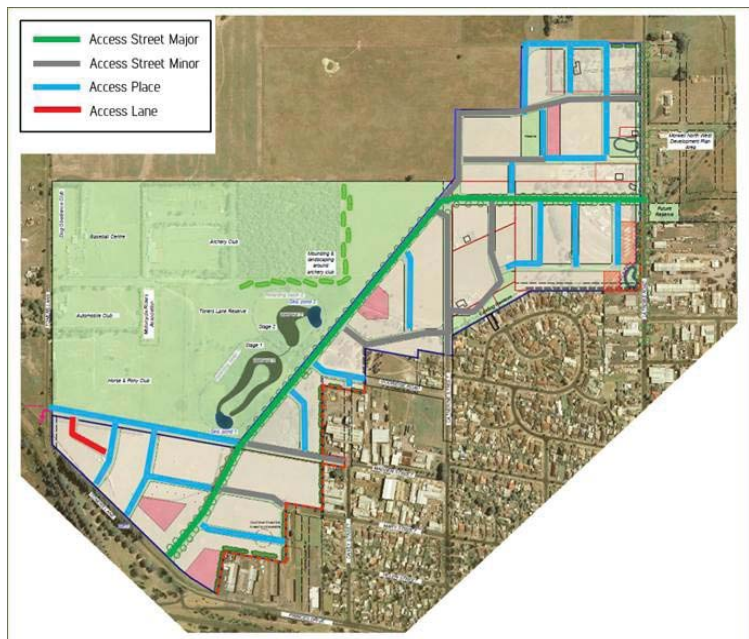
A conservative assessment of traffic generated by the proposed development estimates 9 movements per residential lot per day, which is applied to 490 lots. Accordingly it is anticipated the development will generate 4,410 vehicle movements per day. It is also anticipated that 441 of these movements will occur during both the AM and PM peak periods.

**Table 5 - Existing road hierarchy & traffic volumes**

Road	Road Classification (as per advice received from Council)	Design Volume	5 Day Average Volume
<b>Princes Drive (opposite #71)</b>	Arterial (RDZ1)	> 7000 VPD	409
<b>Princes Drive (west of Latrobe Road)</b>	Arterial (RDZ1)	> 7000 VPD	9352
<b>Latrobe Road (south of Buckley Street)</b>	Arterial (RDZ1)	> 7000 VPD	5451
<b>Catherine Street (Princes Hwy to Buckley Street)</b>	Access St – Level 2	2000 - 3000 VPD	696
<b>Davey Street (North of Princes Drive)</b>	Access St – Level 2	2000 - 3000 VPD	250
<b>Madden Street (east of Jane Street)</b>	Access St – Level 2	2000 - 3000 VPD	222
<b>Helen Street (west of Catherine Street)</b>	Access St – Level 1	1000 - 2000 VPD	165

The hierarchy of proposed roads is in part attributed to the volume of traffic utilising the road (refer to Figure 16). Advice was received from Council requested that all proposed roads within the MWDP be classified in accordance with Latrobe City Design Guidelines.

### Figure 16 - Proposed Road Hierarchy



Classification	Colour Code (See Figure 14)	Typical Daily Volumes	Road Reserve	Carriageway	Footpath	Cycle Path
Access Street - Major	Green	2000 VPD	19 -24m	11.6m	Both sides	None
Access Street - Minor	Grey	500 VPD	13-18m	7.3m	Both sides	None
Access Place	Blue	200 VPD	16-18m	7.3m	Both sides	None
Access Lane	Red	200 VPD	8m	5.5m	None	None

Proposed street tree

Proposed street tree

Footpath	Naturestrip	Indented parking	Trafficable Pavement	Indented parking	Naturestrip	Footpath
1.50	4.00	2.30	4.20	2.30	4.00	1.50



### 12.3 Intersections

#### Latrobe Road

Two fully directional access points are to provide access into the MWDP from Latrobe Road. Primary access is to be achieved via a T-Intersection to the south which will provide access to the central boulevard (Access Street - Major). Secondary access is to be achieved via a fully directional T-intersection to the north.

Concept Layout Plans for the proposed access points have been prepared as part of the Traffic Engineering Assessment (Appendix 8). Both intersection layouts are considered suitable for interim purposes, with the ultimate design to be subject to approval.

Importantly, the proposed designs have considered road alignments as detailed within the MNWDP and feedback as received from VicRoads and Council. It is noted that as a consequence of discussions with VicRoads and Council, the indicative MNWDP intersection to the south (adjacent to the southern intersection for the MWDP) is to be removed subject to Council's final design and permit.

With this in mind, the location of the proposed intersections fronting Latrobe Road are considered acceptable from a traffic engineering perspective.

#### Toners Lane

Access to and from Toners Lane will be provided via three fully directional access points which are to extend from the south-western boundary of the MWDP. The southernmost access (extension of the boulevard) will provide primary access to the MWDP, whilst the two access points to the north-west will provide secondary access to the south-western portion of the Development Plan.

In addition to this, a fourth access point (western extension of Madden Street) has been provided at the request of the MPA. Acknowledging this requirement, the Traffic Engineering Assessment has determined that, given the intersection is located approximately 60 metres from the bend, the minimum sight distance requirement is not met and, as such, consideration should be given to prohibiting vehicles turning right from Toners Lane.

Subsequently it is suggested that vehicles could be diverted onto the next access to the south without adversely impacting the operation of the proposed road network. Traffic volumes at this intersection would be anticipated to increase from 88vpd to 220vpd, which is well within the design parameters for an access street. The intersection would be available to exit the residential area and would facilitate garbage truck and service vehicle movements.

Alternatively, it may be possible to restrict this intersection to pedestrian access only subject to a satisfactory vehicle circulation outcome.

#### Internal

4 roundabouts are proposed :

- 3 on Access Street Major (boulevard);
- 1 on local roads cross section.

These roundabouts will have the dual benefit of assigning priority for traffic movements through each intersection and regulating vehicle speeds along the intersecting roads. The final design of the proposed roundabouts will be completed as part of the detailed design at the subdivision stage. Roundabouts are to be DDA compliant as per DELWP (formally DTPLI) comments.

## 12.4 Public Transport

The public transport servicing the adjacent area is limited to bus services which operate along Princes Drive to the southeast of the MWDP area.

The MWDP envisages that carriageways and intersections along the Access Street - Major from Latrobe Road to Toners Lane will accommodate a future bus route as illustrated in the Mobility Plan at Appendix 5. This proposed bus route is anticipated to link with the future bus route within the MNWDP area via Latrobe Road.

This bus route is a logical extension of the bus route proposed within the MNWDP area and will ensure that lots within the proposed development will be located within 400m of public transport.

Indicative bus stop locations have been shown on the Mobility Plan and are located as close as possible to demand generating land uses and are located to maximise walking accessibility.

In accordance with feedback received from DELWP (formally DTPLI), if roundabouts are to be installed on the proposed bus route they must be designed to accommodate low-floored bus turning movements.

Paths, stops and shelters along the proposed bus route are to be compliant with DDA requirements. Such an outcome could be achieved via a condition of permit if deemed to be required.

## 12.5 Shared Path Network

A footpath network is to be established throughout the precinct which provides safe and convenient pedestrian access.

The street types utilised throughout the precinct facilitate pedestrian and bicycle movements and each will be designed in accordance with the applicable standards at the subdivision stage. Footpaths are proposed on both sides of roads except where roads abut reserves; in this circumstance pathways are located within the open space areas (see Mobility Plan at Appendix 5). The Cross Sections (Appendix 6) demonstrate that ample space is available for footpaths, roads and street trees.

Links to footpaths within connecting streets are provided to facilitate circulation through the neighbouring urban areas. Notably, a link will be provided to Latrobe Road where the Latrobe City Bicycle Plan identifies an existing priority bike network that links to town.

*Photo 14 - Example shared path within reserve*



## 13 Infrastructure

### 13.1 Urban Run Off

Rain-on-Grid (RoG) Modelling has been undertaken by Water Technology (Appendix 11).

The modelling identified multiple overland flow paths within the greater area that affect the MWDP area. The major overland flow path affecting the MWDP area emanates from the Catherine Street table drain. The modelling identified that half the flow moves north with the remainder of the flow moving in a southerly direction back through the proposed development area resulting in implications for flood mitigations in the Southern Precinct.

External flows entering the site will need to be considered in terms of conveyance and safety within the south western and north eastern residential segments of the subject site. RoG modelling has shown that external flows move onto the subject site at various locations throughout the MWDP area. The most significant of these is the north to south flow path through the south western residential development.

The MWDP shows a roadway aligning with this flow path, this feature could be utilised for flood conveyance provided site egress is not significantly impacted. This will need to be further investigated at the planning permit stage.

Water Technology investigated a number of different scenarios to manage both the quality and quantity of stormwater runoff from the

MWDP area and potential locations for such facilities.

The Development Plan proposes a co-located water quality and quantity treatment area within the Toners Lane Reserve for stormwater flows (broadly) to the west. The intention is that storage be combined into a central feature as shown in the MWDP area with the majority of outfall directed to the south as in existing conditions.

Stormwater flows to the east are to be directed to two small retarding basins adjacent to Latrobe Road. There are sufficient areas available to achieve best practice environmental objectives whilst providing a high quality visual treatment to the open space interface.

The Surface Water Management Plan demonstrates that the proposed wetland and retardation area within Toners Lane Reserve, and the two retarding basins adjacent to Latrobe Road, will treat all stormwater discharge from the subdivision in a manner that meets the 'Urban Stormwater Best Practice Environmental Guidelines' (CSIRO, 1999). This details that the design will prevent increased flows downstream.

It is noted that any proposed discharge of stormwater requiring a direct connection to a designated waterway will require approval by the Authority in the form of a Works on Waterways permit.

### 13.2 Sewerage

The relevant service authority for sewer in the area is Gippsland Water. There have been extensive discussion between Gippsland Water, NBA Group and Millar Merrigan with regards to providing sewer to the development and catering for existing assets within the MWDP area as discussed in the attached Infrastructure Services Report by Millar Merrigan (Appendix 10)

Gippsland Water has confirmed that the MWDP area may be sewer to a recently constructed 500mm sewer main which was extended from Godridge Road to Latrobe Road. The sewer has ample depth and capacity to cater for the development with simple mains extensions required.

The existing sewer mains which traverse the site can be contained within road reserves, open space reserves and easements to ensure the surveillance and maintenance requirements of Gippsland Water are met. Where possible the road network in the MWDP has been designed to accommodate the existing infrastructure. The provision of sewerage will be subject to detailed design at the development stage.



### 13.3 Water

The relevant service authority for water in the area is Gippsland Water.

Preliminary advice for the provision of water is that a 225mm main would need to be constructed from the intersection of Latrobe/Holmes Road and reticulated throughout the development area. All remaining water assets will be standard reticulation size (150mm) to supply water at Gippsland Water's standard requirements.

This advice is preliminary only and is subject to detailed design at the subdivision stage.

### 13.4 Gas

APA Gas/Envestra are the relevant gas suppliers for the subject site. Asset inquiries show numerous gas mains available to the MWDP area from the existing urban area immediately to the south-east. Initial feasibility enquiries have found that these mains are capable of supplying gas to the development, with the strategy to be dependent on development staging.

### 13.5 Electricity

The relevant electricity supplier for the site is Ausnet Services.

There are no anticipated issues with regard to network capacity. Ausnet Services has existing 22kV overhead power lines on the south side of the development in Toners Lane and to the east on Latrobe Road. There are also 22kV overhead power lines throughout the existing developed area immediately to the south-east of the proposed development.

Advice from Ausnet Services Network Planner is that the 22kV feeder rated overhead lines on Princes Way, Latrobe Rd and Toners Lane to the south, east and west of the development can support the proposed development based on 4kVA per lot.

The provision of electricity is subject to Ausnet Services requirements and detailed design are to be provided as part of an application for a planning permit. Kiosk substations will be required and consideration must be given to kiosk locations such that they are integrated with the streetscape and do not create a maintenance problem. Future subdivision design is to consider landscape treatments around kiosks and ongoing maintenance.

### 13.6 Telecommunications

Telstra asset plans indicate the presence of telecommunications cables in the vicinity of the subject site.

There are no anticipated issues with the provision of Telstra to each of the lots. As the development is to have more than 100 lots it may be considered viable for Fibre to the Premises (FTTP), instead of copper service, as part of the National Broadband Network.

The necessary infrastructure will be provided to the requirements of Telstra and NBN Co.

### 13.7 Contributions

There is no development contribution scheme proposed for the MWDP area as it is envisaged that land parcels are of sufficient size and location that the provision of required infrastructure can be equitably provided by the developer for each parcel on a case by case basis. Refer to Chapter 14 - Implementation for further details.

## 14 Implementation

### 14.1 Infrastructure Delivery

The MWDP requires a range of infrastructure to be delivered across property boundaries such as drainage, roads, intersections, interface treatments and landscaping of existing reserves. All of this infrastructure will benefit the future community of Morwell West and an integrated implementation strategy is required to ensure that this infrastructure is delivered in a timely and efficient manner and to ensure that costs are shared appropriately between landowners.

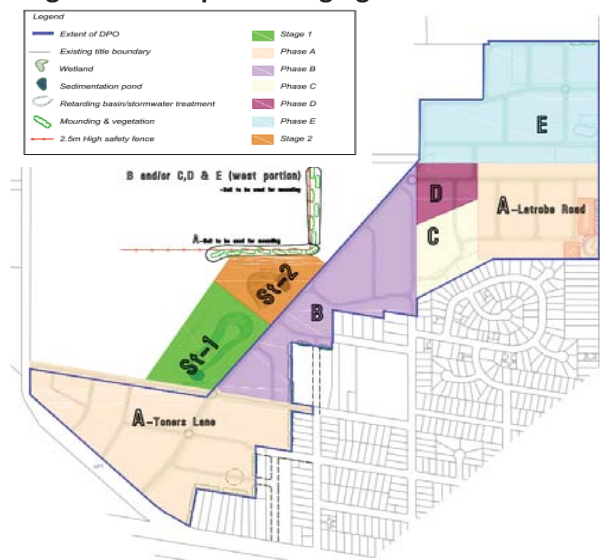
### 14.2 Staging

A Staging Plan has been prepared (Figure 18) which illustrates the likely staging for development in 'phases'. The staging, being Phases A to E, factors in existing title boundaries and ownership. The phases form the basis for the delivery of infrastructure as part of the development of each phase.

It is noted that these phases could be developed out of sequence to the nominated staging, as long as the required infrastructure is provided, including consideration to its integration with other phases and the ultimate development of the Development Plan area.

At the planning permit application stage, servicing for out of sequence development will need to consider the acquisition of easements across other landholdings before a permit is issued.

**Figure 18 - Proposed Staging Plan**



### 14.3 Drainage

A Surface Water Management Plan (SWMP) has been prepared by Water Technology (September 2014). The SWMP sets out a drainage strategy for the area which includes consideration of the local hydrology and water quality impacts of developing the site, and provides solutions to offset these impacts.

The SWMP proposes three independent retarding basins/wetlands which are shown in Figure 7. The proposed ultimate basin design details are provided in Table 5-6 of the SWMP (refer to Figure 19).

**Figure 19 - Proposed retarding basin design (ultimate) (refer to Table 5-6 of Appendix 12)**

RB	Depth (m)	Area (m <sup>2</sup> )	Volume (m <sup>3</sup> )
Central	1.2	28,000	30,600
NE	1.0	2,800	2,100
East	1.0	1,900	1,300

A section of the site adjacent to Latrobe Road (including Phase A – Latrobe Road and part of Phase E) falls towards Latrobe Road and will require on-site treatment before discharging to the outfall drain on the east side of Latrobe Road. This area will be served by the 'east' and 'north-eastern' basins.

The east retarding basin will be constructed as part of the development of Phase A - Latrobe Road. The north-eastern retarding basin will be developed as part of Phase E.

The central retarding basin will be undertaken in two stages and will require the development of a combined water quality treatment and retarding basin in the Toner's Lane Reserve, which is Council owned land located outside the Development Plan area. The functional design for the entire central basin/wetlands will be required

for the first stage of development, however the construction of interim drainage solutions may be considered appropriate until such time as the Development Plan area is developed in its entirety.

Table 5-8 of the SWMP shows the basin details for the staged development of the central retarding basin (refer to Figure 20).

**Figure 20 - Proposed retarding basin design (staged) (refer to Table 5-8 of Appendix 12)**

RB	Depth (m)	Area (m <sup>2</sup> )	Volume (m <sup>3</sup> )
Central - staged	1.2	17,900	19,000
Central - ultimate	1.2	28,000	30,600

It will be a requirement for each phase of development, regardless of sequence, to cater for stormwater drainage outfall. This will require the provision of stormwater infrastructure to deal with water quality and retardation.

Each phase of development must also provide stormwater management infrastructure in accordance with the overall SWMP. It is envisaged that this will be undertaken as a condition of permit (refer to Tables 7, 8 and 9).

#### 14.4 Open Space

The Development Plan does not require the provision of any additional land for public open space due to the location and size of existing open space reserves are considered adequate.

The entire MWDP area is required to make an open space contribution equal to 5% of the site value under section 18 of the Subdivision Act 1988, on a stage by stage basis. This contribution must be made as cash in lieu, unless Council agrees to works in kind, and the funds are to be principally used for the general embellishment of the Toners Lane Reserve. Open space contributions are not to be used towards features and works associated with drainage infrastructure.

The Development Plan does, however, require basic landscaping of the existing open space reserves to be undertaken by the respective development proponents when they develop land directly abutting the reserves. This work is to include the construction of paths, BBQ, seating, shelters and general landscaping (as required)

#### 14.5 Archery Club Interface

In response to the submission from the Twin City Archers Gippsland Inc (The Archery Club), the MWDP requires the following interface treatments to be provided along the southern and eastern boundaries of the Archery Club's site, within Toners Lane Reserve. The purpose of these treatments is to prevent public users of Toners Lane Reserve from entering into the Archery Club's site and thereby mitigate against safety risks between the activities at the Club and users of the reserve.

##### Earth Mounding

Earth excavated for the purpose of the central retarding basin will be utilised to provide mounding along the Archery Club interface as shown on the Staging Plan (Appendix 4). The mounding will therefore be constructed in line with the staging of the central basin, with Stage 1 providing the mounding along the Club's southern boundary and Stage 2 providing the balance of the mounding along the eastern boundary. Construction of the earth mounding is to include associated landscaping and drainage works.

##### Safety fence

The landowners of Phase A (Toners Lane) and Phase B agreed to each provide a contribution equal to 50% of the cost of the construction of a safety (security) fence along the southern and eastern boundaries of the Archery Club as shown on the Development Plan (Appendix 3).

The contribution from Phase A (Toners Lane) is to be provided as a cash contribution at the time of the first stage of subdivision. A Section 173 Agreement has been registered on Title for this land to formalise this agreement and implement the requirement for the contribution.



As the landowner of Phase B is Latrobe City Council and therefore cannot enter into a Section 173 Agreement with itself, its 50% contribution is to be provided through the construction of the fence by Council. Using the cash contribution from Phase A (Toners Lane) for 50% of the cost and contributing the balance 50% itself, Council will construct the fence by the completion of the development of Phase A (Toners Lane).

The Development Plan area contains several 'paper roads' which will need to be constructed in addition to many new roads, some of which will be required to connect to the existing road network.

## 14.7 Roads and Intersections

Given the distribution of the road network and current landholding pattern, it is considered appropriate that each development proponent is responsible for constructing the roads and intersections (roundabouts) nominated on their respective landholdings in accordance with the Development Plan. These roads and intersection treatments including the roundabouts must be constructed to an urban standard in accordance with Council's specifications.

## 14.6 Application Requirements

Each application for subdivision must be accompanied by the following standard planning application requirements:

- Site analysis and design response in accordance with the requirements of Clause 56;
- An assessment (both in written and graphic form as appropriate) detailing compliance with the Development Plan. Where the layout deviates from the Development Plan a written justification must be provided which details that the proposal is generally in accordance with the MWDP;
- A layout plan detailing proposed staging and land budgets;
- A servicing proposal;
- A schedule of drainage to be undertaken; and
- Applicable site assessment reports, such as flora and fauna, cultural heritage, contamination and transport. Where existing reports are current, they can be submitted as part of the application.

The MWDP area comprises of 5 phases (refer to the Staging Plan included as Appendix 4) which have been grouped into three precincts that are broadly defined by current land ownership patterns, site features and the interfaces to surrounding roads. The defining features of each precinct are described in Tables 7, 8 and 9, as well as the specific requirements to be provided at the planning permit stage.

Table 7. Design Response at Permit Stage: Precinct 1

Precinct	Defining features	Design response required
1 Phase A – Toners Lane	<ul style="list-style-type: none"> <li>Interface with existing large open drain along northern side of Toners Lane.</li> <li>Interface to Toners Lane Reserve.</li> <li>Interface with existing industry along eastern edge of site.</li> <li>Linking new road and paper road into existing Mary Street and Madden Street.</li> <li>Alignment of paper road along Toners Lane Reserve and the northern access point onto Toners Lane.</li> <li>Main southern access point to the Development Plan area.</li> <li>Stage 1 of the central basin (unless other areas commence first).</li> </ul>	<ul style="list-style-type: none"> <li>Rationalised driveway locations to allow for access to houses fronting Toners Lane.</li> <li>Direct frontage of housing to Toners Lane Reserve.</li> <li>Interface treatment with the existing industrial area to include retention of existing vegetation between Princes Highway and Mary Street, with deeper lots abutting the IN3Z land.</li> <li>Introduce a landscape buffer (or possible fencing) adjacent to deeper lots abutting the industrial area.</li> <li>Tapering of new roads so that they merge into existing Mary Street and Madden Street.</li> <li>Creating an attractive boulevard entry treatment as the main access point off Toners Lane.</li> <li>Detailed drainage design and construction of the retarding basin and wetlands is required in accordance with the overall SWMP.</li> <li>Earth mounding adjacent to the Archery Club (southern side).</li> <li>Cash contribution equal to 50% of the cost of a safety fence along the Archery Club interface, required before SOC for Stage 1 (required through existing S173 Agreement).</li> <li>Construction of a 2.5m safety fence along the Archery Club interface by Council.</li> <li>A Construction Management Plan is to be prepared in relation to Dwarf Galaxias for any phase of the development which involves works within the proposed stormwater wetlands.</li> <li>Design Guidelines are to be developed for allotments which have an interface with industrial land uses and/or areas of open space.</li> </ul>

Table 8. Design Response at Permit Stage: Precinct 2

Precinct	Defining features	Design response required
2 Phase B	<ul style="list-style-type: none"> <li>Interface to Toners Lane Reserve.</li> <li>Interface with existing industrial areas.</li> <li>Existing capacity issues on Godridge Road.</li> <li>Extension of Catherine Street.</li> <li>Extension of paper road into Madden Street.</li> <li>Stage 2 of the central basin works (unless other areas commence first).</li> </ul>	<ul style="list-style-type: none"> <li>Active frontage to Toners Lane Reserve.</li> <li>Extend Godridge Road into Development Plan area and address existing capacity issues.</li> <li>Upgrade Godridge Road if/as required.</li> <li>A noise attenuation study is required for the land located in close proximity to the Lend Lease depot to determine the appropriate interface treatment/s.</li> <li>Landscape the area directly south of Godridge Road to provide an attractive buffer.</li> <li>Detailed drainage design and construction of the retarding basin and wetlands is required in accordance with the overall SWMP.</li> <li>Earth mounding adjacent to the Archery Club (eastern side unless already completed).</li> <li>A Construction Management Plan is to be prepared in relation to Dwarf Galaxias for any phase of the development which involves works within the proposed stormwater wetlands.</li> <li>Design Guidelines are to be developed for allotments which have an interface with industrial land uses and/or areas of open space.</li> <li>Verification of the noise assessment for land adjacent to lend lease depot is required and mitigation measures are to be employed accordingly.</li> </ul>

Table 9. Design Response at Permit Stage: Precinct 3

Precinct	Defining features	Design response required
3  Phases A (Latrobe Road), C, D & E	<ul style="list-style-type: none"> <li>Interface with existing residential areas.</li> <li>Interface with existing industrial area.</li> <li>Access points onto Latrobe Road.</li> <li>Interface to service easements along southern boundary.</li> <li>Interface with existing open space reserves.</li> <li>Interface with existing dwellings.</li> <li>Interface with existing mine located to the north of Phase E.</li> <li>Main northern access point to DP area.</li> <li>Sewerage access to Phase E will connect through Phase A or C and D to the existing trunk main which traverses the site.</li> <li>Phase A – Latrobe Road will be responsible for the design and construction of eastern retarding basin.</li> <li>The western portion of Phase E and Phases D and C will drain to the central retarding basin. These areas will be responsible for the design and construction of appropriate drainage infrastructure (unless it already exists). The eastern portion of Phase E falls to Latrobe Road and the north-eastern retarding basin and will be the responsibility of the developer of Phase E.</li> </ul>	<ul style="list-style-type: none"> <li>Active frontage to open space reserves.</li> <li>Upgrades to existing open space reserves.</li> <li>Detailed design for access points onto Latrobe Road to ensure that they provide safe, convenient and efficient access to the estate.</li> <li>Interface with Latrobe Road in the south-eastern corner to comprise 3m high barrier, landscaping and single storey restriction.</li> <li>Appropriate interface treatment along the northern boundary of Phase E, having regard to the existing mine and buffer requirements.</li> <li>Existing dwellings to be retained through careful alignment of local road connections.</li> <li>Create boulevard entry treatment for main access point.</li> <li>Rationalised access to lots fronting Latrobe Road.</li> <li>Detailed drainage design and construction of the retarding basin and wetlands is required in accordance with the overall SWMP.</li> <li>Landscaping of constructed wetlands.</li> <li>Earth mounding adjacent to the Archery Club (eastern side unless already completed).</li> <li>A Construction Management Plan is to be prepared in relation to Dwarf Galaxias for any phase of the development which involves works within the proposed stormwater wetlands.</li> <li>Design Guidelines are to be developed for allotments which have an interface with industrial land uses and/or areas of open space.</li> </ul>





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## Appendix 1 - Certificates of Title

## Appendix 2 - Site Analysis Plan

As prepared by Millar Merrigan in consultation with NBA Group Pty Ltd

Reference: 15610 DP1 V2



## Appendix 3 - Development Plan

As prepared by Millar Merrigan in consultation with NBA Group Pty Ltd

Reference: 15610 DP2 V9

## Appendix 4 - Staging Plan

As prepared by Millar Merrigan in consultation with NBA Group Pty Ltd

Reference: 15610 DP3 V5

## Appendix 5 - Mobility Plan

As prepared by Millar Merrigan in consultation with NBA Group Pty Ltd

Reference: 15610 DP4 V6



## Appendix 6 - Cross Sections

As prepared by Millar Merrigan in consultation with NBA Group Pty Ltd

Reference: 15610 DP5 V5 (2 Sheets)

## Appendix 7 - Landscape Master Plan

As prepared by Millar Merrigan in consultation with NBA Group Pty Ltd

Reference: 15610 DP6 V6

## Appendix 8 - Traffic Engineering Assessment

As prepared by Salt<sup>3</sup> July 2015

## Appendix 9 - Ecological Features and Constraints Assessment

As prepared by Paul Kelly and Associates 3 November 2014 (V3)



## Appendix 10 - Infrastructure Services Report

As prepared by Millar Merrigan October 2014 (V2)

## Appendix 11 - Rain-on-Grid Modelling Report

As prepared by Water Technology 6 February 2013

## Appendix 12 - Surface Water Management Strategy

As prepared by Water Technology 18 September 2014

## Appendix 13 - Noise Assessment

As prepared by Marshall Day Acoustics 12 September 2014



**Document End**