



## Morwell North West Development Plan FINAL

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Prepared by CPG (amended by Latrobe City Council)







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# 1 Introduction

The Development Plan applies to land covered by Schedule 1 to the Development Plan Overlay (DPO) in the Latrobe Planning Scheme. This land is referred to as Morwell North West and covers an area of 142ha (Refer to Figure 1).

The Morwell North West Development Plan (MNWDP) area is bounded by Crinigan Road and rural residential properties to the north; Holmes Road and the Maryvale Recreation Reserve to the south; Maryvale Road to the east and Latrobe Road to the west.

The Development Plan is structured as follows:

- Introduction: Provides the context for the preparation of the Development Plan.
- Subject Area Analysis: Summary analysis and key opportunities and constraints (detailed analysis is located in the Morwell North West Background Report).
- Development Drivers: Exploration of the key development drivers influencing the success of the Development Plan over time.
- Development Plan: Includes articulation of development principles that have guided the Plan, and the Development Plan and supporting detail.
- Infrastructure Contributions: Provides a schedule of infrastructure items and contributions required to deliver the Development Plan.

## 1.1 Basis for the Development Plan

The catalyst for the preparation of this Development Plan was the rezoning and introduction of the DPO to the growth area through Amendment C48 to the Latrobe Planning Scheme.

Concurrent to Amendment C48, an initial draft Development Plan for the growth area was prepared for Council by EarthTech in 2006. Council requested that this plan would be approved as part of the Amendment process in order to fast track the planning process and respond to the shortfall in available zoned land in Morwell.

However, the Planning Panel sought that the Development Plan be revised to include further detail to ensure consistency with both the requirements of the DPO and the newly adopted *Morwell Structure Plan (2010)*.

On this basis, the Development Plan builds on the work previously undertaken by Council, maintaining the following elements of the Earth Tech Plan that represent good planning and design for this significant future residential area:

### – Neighbourhood design:

The principles for sustainable neighbourhood design including the need for connected streets, accessible open space and shops, and a range of lot sizes and dwelling densities, have been carried forward in the revised Development Plan.

### – Drainage and water treatment:

Providing a drainage network including wetlands with open space, that responds to the natural drainage line and enables passive recreation, has been carried forward in the revised Development Plan.

### – Higher density housing:

Providing medium density housing in high amenity locations near parks, wetlands and recreation, as well as around the local centre; are principles that have been carried forward in the revised Development Plan.

### – Integration:

Providing opportunities for integration with Josie Place and the Palm Grove area through local streets and pedestrian connections is a principle that has been carried forward in the revised Development Plan.

### – Open space:

The provision and distribution of local parks and pedestrian links across the growth area has been carried forward in the revised Development Plan.

### – Infrastructure charging:

A straight forward infrastructure charging scheme that includes infrastructure items and costs per title has been carried forward in the revised Development Plan.



# 1 Introduction

## 1.2 The Role of the Development Plan Overlay

The DPO is a tool that is used in areas where land is controlled by multiple owners, and an integrated development outcome is required.

The Department of Planning and Community Development (DPCD) Practice Note 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. (DPCD, 'Applying the Incorporated Plan Overlay and Development Plan Overlays' Practice Note, January 2003).*

In Morwell North West, the highly fragmented nature of the land and variation in lot size and development aspiration, has been the catalyst for the preparation of a Development Plan by Council. The plan will provide direction to ensure a logical subdivision pattern across separate allotments to achieve an outcome that is best for the growth area as a whole.

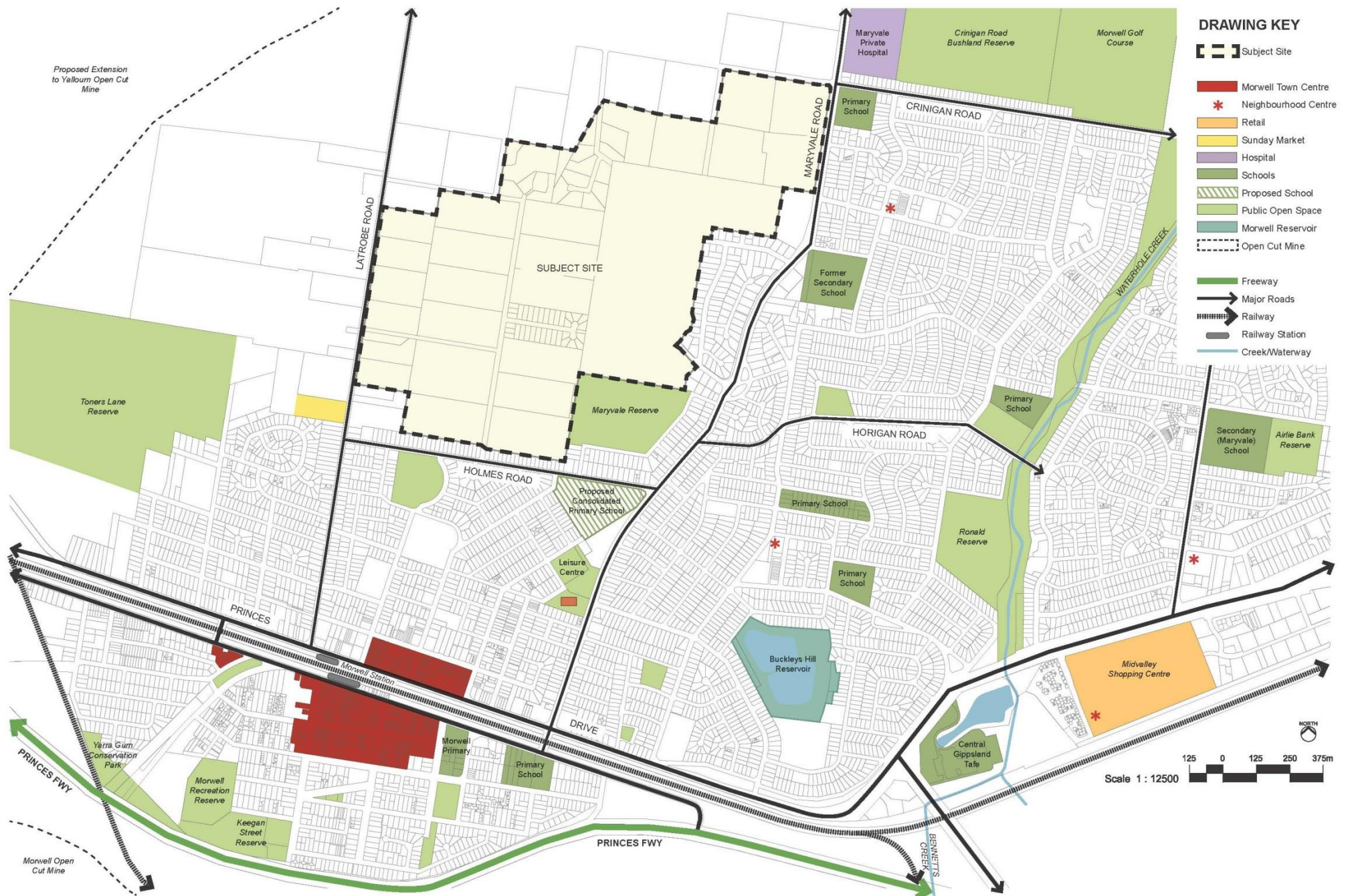
The plan identifies where roads, parks, wetlands and physical infrastructure should be located, without prejudice. That is, the Development Plan is based on best practice design that is responsive to topography, drainage, vegetation and the location of key land uses, to ensure land is reserved for these purposes and not lost in favour of maximising individual Development interests.

The Plan also clearly identifies requirements for new infrastructure including drainage, intersections, playgrounds etc, and will determine an infrastructure funding regime for all landowners to contribute to the overall cost of these items.

The DPO for Morwell North West requires the preparation of an agreement under Section 173 of the Planning & Environment Act (1987) to enforce these infrastructure charges. This mechanism ensures that all required infrastructure items will be delivered in a timely and equitable manner. These funds will be collected before statements of compliance are issued endorsing development to commence on individual parcels.

The Development Plan for Morwell North West has been prepared by Council to provide certainty about the Development direction of this future urban expansion. The Development Plan is cognisant of the land use framework established by the Morwell Structure Plan.

The Development Plan has been prepared in accord with the requirements of the DPO.





# 2 Consultation

## 2.1 Stakeholder Consultation

Consultation meetings with land owners in the growth area were undertaken in the early phase of the Development Plan process.

The aim of these meetings was to:

- Clarify the requirements of the Development Plan; and
- Clarify the current and future development aspirations of land owners.

The consultation sessions identified the following key issues for the landowners:

- Land owners understood that their land was zoned for residential purposes and was covered by the DPO.
- Land owners appreciated that change would occur at various rates over time.
- Generally, land owners were at various stages of consideration of the subdivision potential of their land.
- Land owners who had not as yet explored the development potential of their land understood that their existing use rights would be maintained, and expected to be ready for development over the longer term horizon.
- Land owners expressed overwhelming concern about the timing, delivery and cost of sewer infrastructure and the impact of this on development potential. Resolution of funding was a key issue.

- Land owners supported housing diversity, and generally considered lot sizes ranging from 650 – 1,000sqm as appropriate for this area.
- Land owners supported the provision of a neighbourhood based centre within the development area.
- Land owners supported greater connectivity and access to the Maryvale Recreation Reserve
- Many land owners were concerned about the impact of the industrial activities in the south-west corner on the residential amenity and development potential of their lots in the future.
- Some land owners were concerned about increased traffic as a result of development, especially at the intersection of Holmes Road and English Street.
- Land owners were concerned about their overall developer contributions, particularly existing residents with no subdivision potential.

The above issues, and others raised in consultation, have been considered in the preparation of the Development Plan. In addition to the community, consultation with Gippsland Water and Department of Sustainability and Environment (DSE) has been ongoing through the development planning process particularly around issues of servicing and native vegetation.

## 2.2 Consultation on the Plan

In accord with the provisions of the DPO, consultation or exhibition of a Development Plan is not required before the plan can be approved by Council. However, Council is committed to circulating the Development Plan to all affected parties for their information and keeping all parties informed.

The DPO for Morwell North West is unique in that it requires the Development Plan to prepare a development contributions table for infrastructure works, and requires landowners to enter into an agreement under section 173 of the *Planning and Environment Act 1987* to contribute to these works, prior to the grant of any Planning permits. This is unique because the DPO does not contain any third party review rights. To ensure all landowners are fully informed of pending infrastructure costs, Council is committed to informal consultation with all affected parties on this matter.

# 3 Subject Area Analysis

## 3.1 Site Context

The site is located to the north of Morwell town centre and has a site area of 142 hectares. The site has interfaces with several land uses which include residential, industrial, rural and open space. The dominate site features are associated with topography and vegetation.

The site is bounded to the south and west by residential areas consisting of traditional neighbourhood designed suburbs. This area also includes a regional scale open space along a significant portion of the site's southern boundary.

Land occupied by industrial uses abuts the south west corner of the site which has both visual and noise impacts on the surrounding residential area. The north and west boundary of the site has an interface with rural land. The properties along this interface are rural living sized lots.

There are stands of mature vegetation scattered across the site. Most of these trees are not native and are associated with farming practices. The high point on the site is located in the north east segment of the subject area. This point offers views of the ranges to the west and is planted with a stand of mature trees that dominate the ridgeline.

The sites topography slopes down from the east to a valley floor that runs along the western boundary. The constructed drainage on the site is over a metre deep in places and capture run off from the surrounding areas to the east, south and west. With the exception of the dwellings on Josie Place existing buildings are well set back from the street and sited on large allotments.

A summary of the local context and site analysis is illustrated in Figure 2. More detailed analysis is contained in the background report.

## 3.2 Development History

The growth area was rezoned to Residential 1 Zone under the Morwell Planning Scheme in 1988. This was the catalyst for urban Development, extending from the east. Three key private developments define the development activity in the precinct over the past decade. These are summarised below:

- The staged subdivision of the Heritage Manor Estate (52.5ha) in the eastern portion of the subject area. While part of this subdivision has been constructed, issues related to the construction of downstream trunk sewerage infrastructure have constrained the ability to further develop this land over time.
- An application for a 33 lot subdivision of land east of English Street was lodged in July 2004. This application was approved and construction of this subdivision has commenced, with around half the lots being built already.
- An application for a 95 resident aged care facility fronting the Morwell – Maryvale Road was lodged in July 2005. This application was approved and construction of the facility has recently been completed.



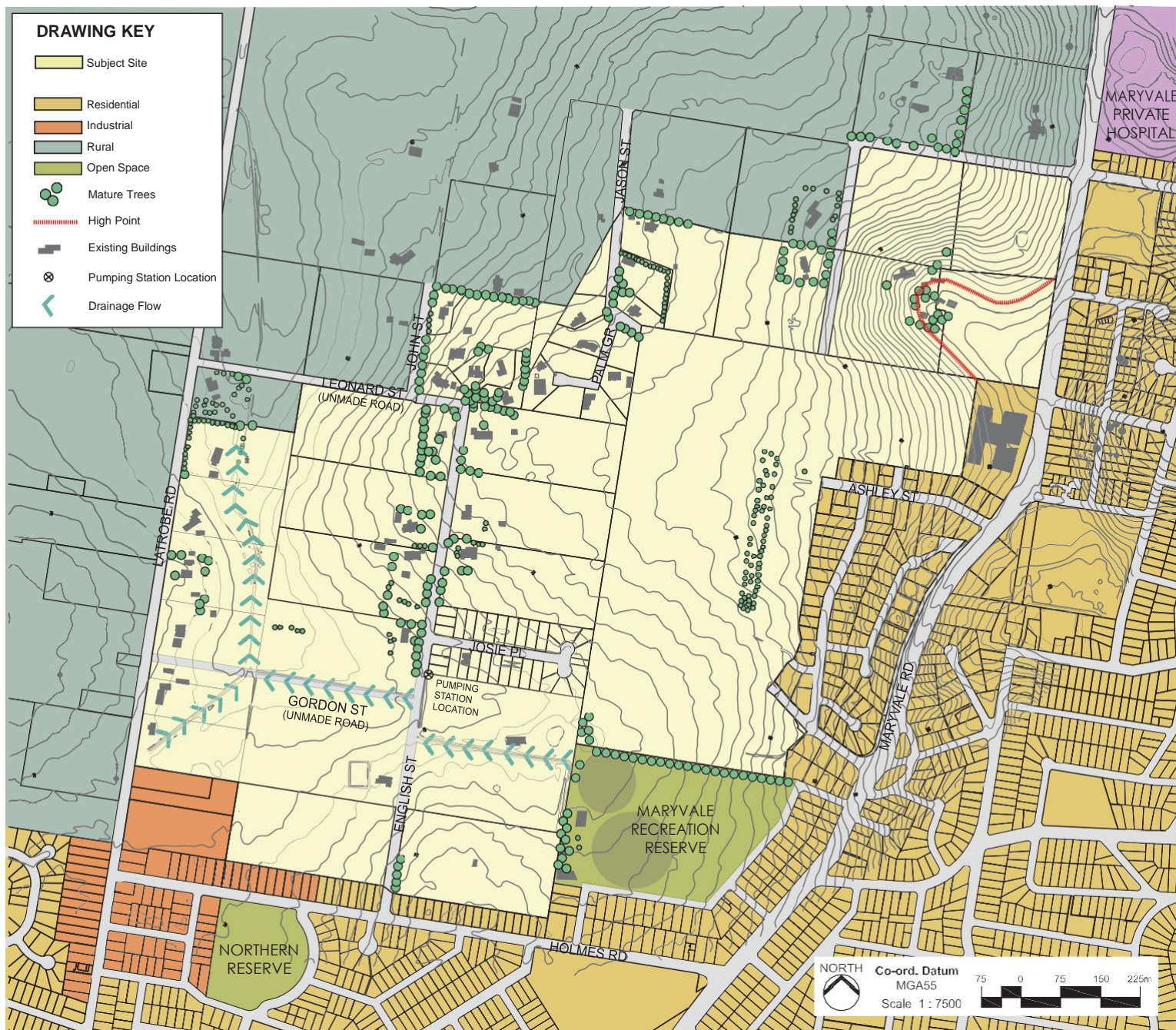


Figure 2: Analysis

# 4 Key Opportunities and Constraints

The subject area analysis has revealed a series of key opportunities and constraints that have influenced the overall Development Plan. The key opportunities and constraints are summarised below.

## 4.1 Opportunities

- **Create an urban expansion that is integrated with surrounding residential areas.**

Integration can be achieved in a number of ways including the creation of a clearly connected street network, which avoids cul-de-sacs, and enables people to move easily to and within the new neighbourhood; by creating frontage to key external roads to avoid back fences at the interface with established residential areas; and by locating parks, open space and retail within a walkable catchment of surrounding residents to encourage them to be part of the new neighbourhood.

- **Improve connections to the Maryvale Recreation Reserve and providing for passive surveillance through interface residential Development.**

The recreation reserve is a key asset located within a walkable catchment of most new residents. Clearly defined on and off street paths that link to the reserve will be required, to maximise its use and enjoyment. Opportunities for medium density housing surrounding the reserve would activate this area and provide surveillance for users.

- **Integrate WSUD and existing vegetation into the urban landscape.**

Utilising existing features of the site in streetscapes, parks, drainage reserves and wetlands will improve overall amenity and ensure the urban landscapes

are established early on as residents move in.

- **Create better connections to surrounding social infrastructure, recreation and open space.**

The street network should clearly link residents to surrounding community infrastructure including northern reserve, Latrobe Leisure, crèches, schools and hospital.

- **Introduce a neighbourhood level centre within walking distance of most residents to serve their daily, convenience, shopping needs.**

Sustainable neighbourhood design is based around the provision of local services and shops within walking distance of residents in order to reduce car trips. Such centres also create a focus for new communities and improve interactions with residents.

- **Create large lots to manage challenging interfaces, particularly with the industrial activity in the south-west.**

Managing this interface through the creation of large lots may enable appropriate separation between uses, and not impact on the overall amenity of new residents or the ongoing capacity of existing business.



# 4 Key Opportunities and Constraints

## 4.2 Constraints

- **Timing and cost of sewer infrastructure to the study area.**

Programmed works for sewer will need to be brought forward by developers to service their land in the short term. The bring forward costs are quite significant and are likely to impact on the ability of land to be released.

- **Impact of the north-south drainage line on the development potential of lots fronting Latrobe Road.**

The location of the drainage reserve and the requirements for future drainage work and wetlands, will have implications for the lot layout and street network in this area.

- **Increased traffic at the English Street / Holmes Road intersection.**

English Street is central to the growth area and will act as a key local street. The street network has been designed to ensure traffic generation in English Street will not adversely impact on traffic flow at Holmes Street.

- **Amenity impacts at the residential / industrial interface.**

Lots will need to be designed to ensure off site amenity impacts, such as noise as a result of commercial activity, are avoided. Options such as larger lots of landscape buffers to screen existing uses has been explored.

- **Integration of some of the existing subdivision pattern within the overall neighbourhood structure.**

The existing subdivision pattern, including Josie Place and Palm Grove, has not been designed in a way that will easily integrate with future development. The urban structure has been designed to deal with this issue.

- **Multiple land owners and land assembly issues.**

The fragmented landownership and their Development intentions may result in ad hoc development of the growth area.

- **Extent of native vegetation and impact on overall structure and yield.**

The quality and extent of native vegetation has been assessed. However native vegetation will require further assessment prior to subdivision applications being lodged. Modifications to the urban structure may be required as a result, which may impact on the development potential of some landowners and affect their expectations of yield.

- **Impact of encumbered land on neighbourhood structure.**

A substantial area of land in the growth area is encumbered by drainage and flooding issues. While some of these areas fall naturally along title boundaries, the location of drainage on the balance of the site may create issues for lot design and street networks. Options for flexible drainage solutions will be required to ensure the best neighbourhood structure is achieved.

# 5 Development Drivers

The urban expansion of the growth area will be driven by the development issues outlined below.

## 5.1 Serviceability of the land

The key driver for development in this area will be the ability to service the land. It is understood that the capacity constraints of the existing sewerage infrastructure will trigger necessary trunk main upgrades before Gippsland Water will support any new planning permits in this growth area.

The capital cost of these works will be born in part by the developers of the land. Due to Gippsland Water programming, much of the development area will demand the delivery of infrastructure “out of sequence”. In accordance with the requirements of the Essential Services Commission (ESC), it is understood that the overall total out of sequence cost for land owners will be in the order of 40% of the total capital costs, approximately \$1.2 million.

Resolution of servicing across the subject area in a timely and efficient manner will be the key to unlocking the development potential of this precinct over time.

## 5.2 Market influences

The rate of development activity in the subject area will be largely driven by demand and supply characteristics of the local housing market, and the housing offer that is proposed by local developers. Currently 44 dwellings a year are developed in Morwell, the majority of which occurred in estates on the northern fringe of town, including the Morwell north-west area. The continuation of such development rates will be heavily impacted by the overall status of the market, as well as the serviceability of the land. In addition, housing supply in the balance of Morwell and nearby Traralgon will influence the rate of change in the growth area.



# 5 Development Drivers

## 5.3 Development aspirations of landowners

The subject land has been developed in an ad hoc manner over the past decade. The Development Plan seeks to ensure an integrated and certain development outcome for the land in the future.

However, the aspirations of landowners will significantly drive the overall success of the Development Plan. This will be impacted upon by the following issues:

- The fragmentation of landholdings;
- Land development costs;
- The timing of development fronts across the subject area and the impact of this on the co-ordination of services;
- The willingness to pay for essential infrastructure and services, and equity in distribution of costs;
- The initial intention of some land owners to carry on as is on their land;
- The intention of landowners to adopt a position of minimum subdivision, potentially restricting the overall development potential and yield.

## 5.4 Co-operation of key agencies and Council

Facilitating development through the co-operation of key agencies, in particular the service authorities and Council will be a key driver in the rate of change in the subject area. A coordinated management structure and potential assisted funding scheme to ensure the timely delivery of key services will significantly assist to bring online key stages of the Development in the short to medium term.

## 5.5 Opportunities and Constraints of the Site

The identified opportunities and constraints will clearly influence the likelihood and timing of development of the site. Many landowners will experience a combination of both opportunities and constraints creating a tension that could impact on their aspirational development outcomes and may also impact on speculation on their land by land developers.

# 6 Development Plan Principles & Objectives

## 6.1 Development Principles

Council has embarked on this development planning process to seek to facilitate the integrated Development of this fragmented urban expansion area. As such, there is a need for this Development Plan to be prepared in a way that can actually be delivered in a coordinated, logical and cost effective manner across the various land holdings.

On this basis, a series of development principles have been established to inform the development planning process and to act as a 'checking mechanism' to ensure the feasibility and deliverability of the Development Plan over time.

The development principles are as follows:

- Maximise development outcomes on large consolidated sites:
- Provide Neighbourhood Activity Centre on consolidated site to ensure delivery
- Provide core passive & active open space, and any community infrastructure, on consolidated site to ensure delivery
- Determine development staging and yield that can assist in funding the early provision of servicing
- Minimise development costs through logical design
- Consider title boundaries when designing essential structural elements to ensure (early) delivery and avoid issues related to cost
- Consider title boundaries in neighbourhood design
- Utilise existing easements and reserves
- Connect to the existing grid / road network where possible
- Avoid single fronted roads with the exception of public open space interfaces
- Avoid irregular shaped lots that minimise development potential in the future
- Utilise natural features in design and development
- Respond to the quality of land in overall siting and design of subject area
- Facilitate the achievement of sustainable neighbourhood outcomes
- Provide legible connections to key community anchors within and surrounding the study area i.e. schools, market, hospital, recreation reserve
- Provide for walkability in the new community
- Integrate Water Sensitive Urban Design (WSUD) elements with open space requirements
- Incorporate Crime Prevention Through Environment Design (CPTED) principles in neighbourhood design

The preparation of the Development Plan was guided by these agreed development principles.

## 6.2 Development Plan Objectives

In addition to the principles listed above, the key elements of the Development Plan have been prepared in accord with a series of strategic objectives based around best practice approaches to growth area planning established by the State Government's Growth Area Authority (GAA) and Clause 56 of the Victoria Planning Provisions.

The GAA's growth area precinct structure planning guidelines provide clear objectives and direction for delivering sustainable neighbourhood design in growth areas in metropolitan areas. These guidelines have equal relevance to 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 Development Plan are listed below.



# 6 Development Plan Principles & Objectives

## Community Design Objectives

- **To establish a sense of place and community**
  - Design neighbourhoods to be safe and compact, making it easy to walk or cycle to shops, local jobs, schools, community facilities and public transport stops;
  - Promote healthy lifestyles and strong diverse communities through well designed public spaces and community facilities;
  - Provide access to residents and workers to a variety of open spaces (parks, gardens, plazas and reserves) for relaxation and recreation;
  - Create strong local character through distinct natural and cultural features as well as the urban form;
  - Promote positive experiences in the growth area for future generations through high quality design and built form.
- Design neighbourhood centres to ensure they are attractive, lively and convenient focuses for the community they serve and include the provision of quality public spaces.

## Housing Diversity Objectives

- **To create greater housing choice, diversity and affordable places to live:**
  - Provide housing that meets a range of population needs as the community ages and grows over time;
  - Achieve an average net density of 15 dwellings per developable hectare;
  - Locate higher density housing within and around the neighbourhood centre, along bus routes and close to public open space;
  - Provide a range of lot sizes and housing styles;
  - Locate a mix of private, affordable and social housing, where relevant, in and around activity centres for households on low to moderate incomes;

## Movement Network Objectives

- **To provide better transport choices and options**
  - Provide safe and efficient walking, cycling, public transport and vehicle access to connect residents directly to the convenience centre, open space and community facilities within and adjoining the growth area and to wider regional networks;
  - Ensure that all areas can be adequately and efficiently serviced by buses;
  - Design streets to cater for shared paths and bus movements;
  - Locate higher density housing along the bus route.
- **To create well connected streets**
  - Ensure streets and urban form are designed to cater for people's choice in movement – walking, cycling, public transport, car and other motorized vehicles.
  - Encourage a mix of land uses within and around the convenience centre that can be easily accessed;
  - Distribute traffic evenly through the local street network, and avoid opportunities for 'rat running'.
  - Create permeable street networks, avoiding use of cul-de-sacs.

# 6 Development Plan Principles & Objectives

## Open Space Objectives

- **To provide easily accessible open space for passive recreation**
  - Provide local parks within at least 400m safe walking distance of at least 95% of all dwellings;
  - Provide active open space within 1km of 95% of all dwellings;
  - Provide linear parks and trails, most often along waterways, but also linked to vegetation corridors and road reserves within 1km of 95% of all dwellings.
  - Create clear links to active recreation opportunities at Maryvale Reserve;
  - Use encumbered land productively for open space where possible.

## Environment Objectives

- **To increase environmental sustainability and urban water management**
  - Provide opportunities for integrated water management, including water sensitive urban design, re-use of stormwater and recycled water;
  - Encourage best practice urban water management systems to deliver appropriate water quality and quantity outcomes.
  - Neighbourhood design should ensure that waterways and ecologically significant areas of native vegetation and other important habitat areas become key community assets;
  - Protect the built environment from flooding, inundation and stormwater drainage.

# 7 The Plan

The Development Plan is illustrated in Figure 3 and the key elements of the plan are detailed in the following section of the report.

The Development Plan delivers an integrated and sustainable neighbourhood, where residents can choose from a range of housing types in high amenity settings. The Development Plan provides opportunities for a mix of people across the lifecycle allowing for housing affordability due to the range of lot sizes, which will appeal to new home owners; housing diversity to enable people to transition to second or third homes from existing Morwell neighbourhoods; and age care facilities for older people seeking to live in a highly accessible master planned community.

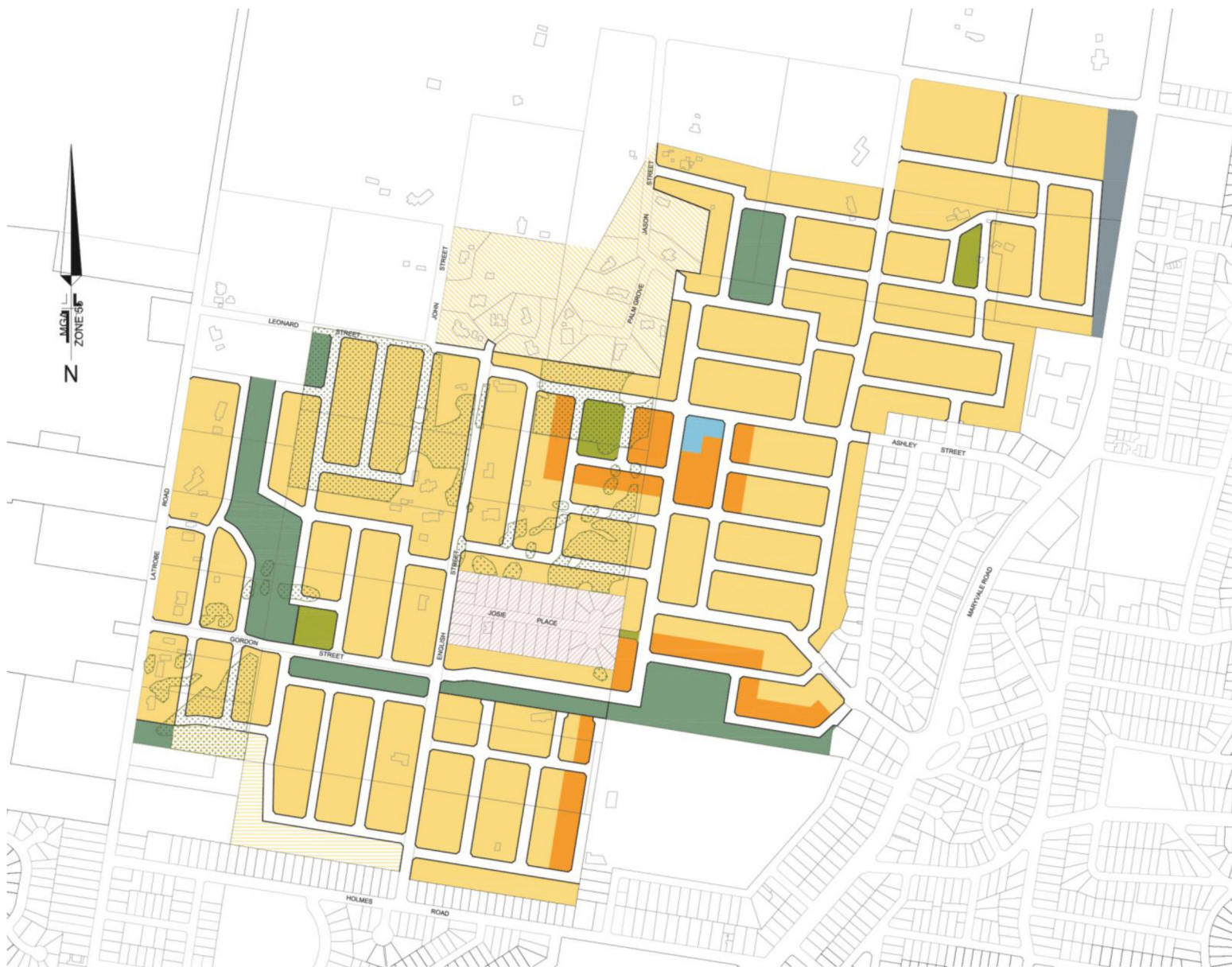
The overall neighbourhood design in the Development Plan has been influenced by natural features, drainage and vegetation requirements, and a logical perspective on development equity for all land owners. Within the framework created by these structural elements, the proposed neighbourhood structure has been designed to deliver a compact and walkable community in the growth area.

The design has been particularly careful in ensuring that streets are well connected to ensure integration and easy movement through the neighbourhood and to surrounding residential areas. The provision of shared paths and linear paths along vegetated wetlands provide a nice environment for people to walk and cycle through the neighbourhood, and to the shops, parks and recreation reserve.

From a sustainability perspective, a variety of housing density is encouraged throughout the growth area, with medium density housing located proximate to the shops, aged care facilities, parks and recreation reserve. It is intended that this design will provide people with the choice to travel less with their car, creating a more sustainable neighbourhood. Drainage and wetland design and Water Sensitive Urban Design (WSUD) techniques in local streets will add to sustainability in terms of capture, use and treatment of stormwater. It is intended that wetland areas will be re-habilitated to improve the ecological integrity and habitat potential for native flora and fauna.

The details of the Development Plan are contained in the following sections.





MEDIUM DENSITY LOTS	OPEN SPACE (UNENCUMBERED)
STANDARD LOTS	DRAINAGE RESERVE (ENCUMBERED)
LARGER LOTS	NATIVE VEGETATION
LIMITED DEVELOPMENT POTENTIAL	SEWERAGE/WATER RESERVE
NEIGHBOURHOOD CENTRE	DEVELOPED RESIDENTIAL
	EXISTING BUILDINGS

## NOTES

**Retarding Basins:** Retarding basins are required for the detention of stormwater generated within the various drainage catchments. The retarding basins have been sized to control peak flows from the development plan area, back to existing flow rates. Consolidation of retarding basins within drainage reserves and wetland areas has been achieved where possible to respond to topography and maximise land efficiencies.

**Drainage Reserves:** Drainage reserves have been designed to respond to the topography of the site. The cross section for reserves is minimum 25 metres wide and maximum 70 metres wide, varying to respond to water flow and treatment requirements. The cross section for drainage is based on WSUD principles and includes shallow inundation and vegetated buffers that can act as passive open space areas. It is proposed that drainage in the south-west corner of the study area will be piped before connecting to the main north-south drainage reserve, in order to minimise impacts on development yield.

**Neighbourhood Centre:** A small neighbourhood centre of approximately 3,000 sq.m is proposed to serve daily needs of residents and is located centrally to the walkable catchment of most houses.

**Open Space:** Passive open space is provided through a network of linear parks along drainage reserves and associated with wetlands; through shared pathways on 'green streets' on key local roads; and in the form of pocket parks. Given the immediate proximity to the regional open space at Maryvale Reserve and Northern Reserve, no active open space has been provided within the study area.

**Housing Diversity:** Opportunities for housing diversity are provided through a mix of lot sizes throughout the development plan area, with the average lot size of 730 sq.m. This diversity will provide the opportunity for a range of household types, enhancing the mix of people that will live in the area over time. Larger lots have been provided at the industrial interface to allow for an appropriate buffer to be created.

**Native Vegetation:** There is a high presence of modified native vegetation in the area in the form of plains grassy woodland and swamp scrub. A further assessment of native vegetation will be required prior to the approval of planning permits.

Figure 3: Development Plan

# 8 Lot Sizes / Housing Diversity

The Development Plan aims to achieve a semi-urban neighbourhood structure that attempts to increase densities commensurate with the zoning requirements while responding to the residential culture of Morwell – a culture of larger standard residential lots that maintains a sense of openness and draws on vegetation and landscape cues to reinforce the regional aspect of this urban centre.

In accordance with the requirements of DPO1 and Clause 56, a range of lot sizes have been proposed to provide for housing diversity in the growth area. (Refer to Table 1). The range of lot sizes will maximise density and will provide the flexibility required to meet the range of housing needs of the growing Morwell community.

The proposed lot sizes respond to Council's intention for this area to accommodate standard density residential and supply the market with a significant housing development opportunity given the lack of surplus residential land in Morwell.

On this basis, the standard density residential component of the Development Plan will yield a total of approximately 1,280 lots. An average yield of 10 dwellings per hectare will be achieved in the growth area. Based on current development rates, this will provide a 25 year lot supply and will support a population of approximately 4,000 – 4,500 people.

The range of lot sizes proposed will enable 'whole of life' housing opportunities, allowing people to continue to live in the area as their housing needs change. This will create longevity in the community networks that will be established in the neighbourhood over time.

The proposed housing diversity will assist in anchoring a sustainable community, and is essential in ensuring the success of an urban expansion area such as this that will evolve slowly over time.

Table 1: Lot Yield

Lot Type	Lot Size	Total Lots
Standard density residential	650m2	1164
Medium density residential	450m2	121
Larger lot residential	1,000m2	21

## 8.1 Medium density

Medium density residential lots are proposed in a number of key locations throughout the growth area including:

### – Neighbourhood centre:

Medium density housing is proposed directly south and west of the neighbourhood centre, increasing the critical mass and overall vitality of this area - an important factor in the success of the local shops. A denser form of housing will also facilitate walking and cycling to the shops, reducing reliance on the car.

### – High amenity locations:

Medium density housing will be encouraged adjacent to high amenity areas such as wetlands, parks and the Maryvale Recreation Reserve. Residents will take advantage of the amenity enjoying a green outlook from their homes. This housing will provide a level of passive surveillance to these key pedestrian zones.

### – Along bus route:

Medium density housing is encouraged where possible along the bus route, particularly in the neighbourhood centre, to provide residents with sustainable transport options within close walking distance from home. Maximising opportunities for people to catch the bus to work, school or recreation is very important particularly when most of these destinations are only a short trip away.

# 8 Lot Sizes / Housing Diversity

A minimum lot size of 450 square metres is proposed in the medium density area. It is acknowledged that this lot size is quite small and is un-common at present in Morwell. While seemingly ambitious, this option reflects the need to provide for housing diversity and respond to State Planning requirements.

It is acknowledged that time will be required before the market is ready to deliver such densities. However given the supply scenario in Morwell, it is considered that this option will be taken up over time, if additional growth fronts are released slowly.

Many developers understand the market for diversified housing product coupled with a high amenity asset such as a neighbourhood centre. The medium density housing product will be viable in the future, however in the short term, flexibility should be provided in terms of Council approvals to ensure development of the centre and essential supporting residential community is not hamstrung by aspirational housing targets.

Development applications that achieve high concentrations of people in this area, such as aged care facilities, should be supported even if they don't meet the target density, as the overall intent of increasing critical mass around the centre will be delivered through this type of development outcome.

## 8.2 Larger lot residential

Larger lot residential is proposed for the two parcels of land in the south-west corner that interface with the industrial area. It is acknowledged that the presence of these industrial activities is historical and that they are currently operating in a Residential 1 Zone. However, the ongoing nature of this use is likely to continue into the future, unless Council identifies alternate parcels of nearby industrially zoned land for the re-location of these businesses. Council will investigate opportunities during the preparation of an Industrial Land Strategy for the municipality.

In the event that industrial activity continues, residential development will need to respond to this condition through the application of appropriate buffers to manage off site amenity impacts. The Development Plan proposes that a sleeve of larger lots of 1,000 square metres along the area east of the industrial interface.

It is important to note that this is not low density residential development, but larger lots that will accommodate standard residential dwellings with adequate depth to provide an appropriate buffer to abutting industrial land. Acoustic attenuation measures may be required for any new housing development in this area, this could include vegetated buffers.

No other options for larger lot residential or low density residential have been proposed. This is a clear direction to ensure that the residential intent established by Council for this last significant growth area is achieved.

Whilst an opportunity to provide a transition to the rural interface in the north through larger lot development was entertained, it was considered that in fact the natural excision and development of rural living type lots to the north of Crinigan Road already provided this transition. As such, creating the transition in the growth area was considered un-necessary.

It is important to note that, a 6 lot subdivision with minimum 1 ha lots has been approved by Council immediately south of Crinigan Road. This subdivision contains building envelopes which will be able to be developed - increasing density on these lots, once the land can be sewered. As such, the pre-condition for standard residential development to the northern boundary of the study area has already been set up.



# 8 Lot Sizes / Housing Diversity

## 8.2.1 Palm Grove

A number of parcels in Palm Grove contain building envelopes that will be able to be developed once the land is sewered. Given the current development pattern, limited opportunities for integration and servicing limitations; the Development Plan has not included this area as part of the standard residential component of the growth area.

However, based on the expressed intention of the landowners the Development Plan encourages the realisation of development on these sites in the long term as and when the land is sewered. It is anticipated that these lots would yield on average an additional dwelling per lot. Given this low yield, the residents of Palm Grove do not create a demand for new infrastructure in the growth area, and due to the highly self-contained nature of the street do not generally benefit from any infrastructure improvements. As such, Palm Grove is not included in the infrastructure costing.

The Development Plan requires a local street connection at the southern end of Jason Street to ensure that any future subdivision in Palm Grove is integrated with the growth area neighbourhood. Council may determine that it is reasonable for landowners in Palm Grove to contribute to the cost of this minor road link through a section 173 agreement.

Also excluded from the Development Plan is the Jose Place residential subdivision. These properties operate on a pumped reticulated sewer system and are not dependent on the development of adjoining land for their water and drainage requirements.

## 8.3 Statutory Assessment Guidelines

- Subdivision applications should be prepared to be generally in accord with the proposed urban structure and dwelling density contained in the Development Plan.
- Standard density residential should achieve an average of 10 dwellings per hectare.
- Medium density residential areas should achieve an average of 15-20 dwellings per hectare.
  - Town house and unit development is encouraged in the medium density areas, with a preferred overall height limit of up to 3 storeys.
- Larger lots will only be supported in the areas designated on the Development Plans.
  - Development on these lots will be required to front the street.
  - Building envelopes will be required for development proposals on these lots.
- The building envelope for dwellings must be setback no less than 10metres from the rear boundary. Ancillary buildings may be acceptable up to the boundary, provided they are appropriately sited.
- A landscape master plan is required for the larger lots. The master plan must include provision of vegetation along the rear boundary to screen interface uses.
- New dwellings should address the street and complement the scale and form adjacent buildings.

- Building setbacks should be the average distance of the setbacks of the front building line of the existing buildings on the abutting allotments facing the street front or 9 metres, whichever is the lesser.
- For corner sites with a second frontage, the building setback should be the same distance as the setback of the front wall of any existing building on the abutting allotment facing the side street or 2 metres, whichever is the lesser.
- New buildings should be oriented to make appropriate use of solar energy and sited and designed to ensure that the energy efficiency of existing dwellings on adjoining lots is not unreasonably reduced.
- Front fences should be low and use materials and colours appropriate to the architecture of the adjoining building. Materials such as timber are encouraged.
- New buildings should not unreasonably deprive neighbouring properties, dwellings or Private Outdoor Space of privacy, sunlight/daylight or views.
- New buildings should provide active edges to any shared areas of open space and avoiding sides and rears of lots along public open space boundaries.
- Two car spaces should be provided per dwelling.

## 9 Local Centre

A centrally located local centre is proposed within the walkable catchment of the new residential neighbourhood. The centre is located at the intersection of key east-west and north-south collector roads, enhancing accessibility by walking, cycling and car. The centre is proximate to the aged care facility providing a local destination and meeting place within the new community, encouraging the integration of these residents.

The centre will perform a daily needs function for the residents. An area of 0.33Ha has been set aside for the centre, reflecting its intended local role. Residents will continue to travel in to town for their main (weekly) shopping needs.

The size of the centre has been determined in accordance with growth area principles established by the GAA, a local centre is defined as:

*'...an activity centre smaller than a neighbourhood activity centre which may include a small limited line supermarket or convenience store of between 500sqm and 1,500sqm, plus non-retail uses'. (GAA, 'Precinct Structure Planning Guidelines', 2009).*

The centre will provide space for local business such as butchers, hairdressers, a small grocer, and even some small office services. Given the forecast population, and the current level of service in the surrounding area, the local centre is not required to include any Council run community facilities. It is intended that the consolidated school site on Holmes Road will accommodate community facilities that will serve the new community.

Medium density housing will be developed around the centre to increase overall critical mass and encourage walking and cycling trips. Housing in this area will achieve an average density of 15 dwellings per hectare.

The centre will be required to be designed to address the street, with shop entries clearly legible for passers-by on both the east-west and north-south street frontages. Parallel parking will be provided on street. The centre should be designed to include seating, rubbish bins and lighting in the paved area at the front of the shops, as well as landscaping to improve overall amenity.

The land developed for the local centre will be required to be rezoned to the Commercial 1 Zone (C1Z). Use and Development will need to be consistent with the zone provisions.

# 9 Local Centre

## 9.1 Statutory Assessment Guidelines

- An area of 0.33Ha must be set aside for the development of a local centre
- A concept plan must be prepared for the local centre, the following design guides apply:
  - Built form should be connected creating a continuous façades to the streets.
  - Buildings should be well presented to the street with clearly defined entrances that connect with the pedestrian footpath at street level.
  - Street facades and all visible side or rear facades should be visually rich, interesting and well-articulated to create visual interest and interaction.
  - Sites in prominent locations on arterial and connector road intersections should support significant buildings, heights and design quality.
  - Buildings of up to 3 storeys in height will be supported in principal.
  - Side building facades (excluding shop fronts) and continuous walls, should not exceed 10m without articulation, fenestration, activity or visual interest.
  - New buildings within the local centre must relate sensitively to the interface with adjoining residential areas.
- Upper level development should be a recessive element. Entrances provided at the street front will be required to be consistent with the provisions of the C1Z.
- Built form should be activated on the ground floor.
- On street angled car parking should be provided for customers. Any additional car parking must be located to the rear of the buildings.
- The concept plan must provide for seats, bins and lighting in the local centre. Screening of centralised waste collection points should minimise amenity impacts with adjoining areas and users of the centre.
- Streets, public spaces and car parks should be well lit with pedestrian-friendly lighting.



# 10 Water Cycle Management

The Development Plan has provided a total area of 8.69Ha for the overall water cycle management system. Equalisation for encumbered land will be achieved through the Infrastructure Funding Plan for the growth area.

A Stormwater Management Strategy for the Development Plan area, was prepared in December 2008 by Coomes Consulting (now CPG Australia), to inform the stormwater quantity and quality controls required to service future development.

## 10.1 WSUD

The Development Plan proposes the application of water sensitive urban design, accommodating drainage within a wetland system and passive open space network. In total, 8.69Ha of land is required for drainage.

Most of the Development Plan area, or approximately 100 hectares, is traversed by an open channel running from the northern boundary of the Maryvale Recreation reserve, west across English Street and then north along the depression to Leonard Street. These open drains will be upgraded to convey the 1 in 100 year flows generated from the Development Plan area and from the urbanised external catchment of approximately 226ha. The proposed drainage system is provided in two main reserves: a 25 metre wide east west reserve and a 70 metre wide north-south reserve. The drainage reserves vary in width depending on their location in the catchment, based on the intended flows and treatment requirements. Figures 4 and 5 provide a typical cross-section for this drainage reserve.

The drainage reserve cross-section provides opportunities for landscaping and establishment of wetlands. The meandering channel with its shallow inundation levels will allow for the establishment of aquatic vegetation that will enhance the ecological integrity of the waterway and improve its overall appearance.

The cross-section allows space for passive open space on each bank which will include walking and cycling trails that link to surrounding development, creating a high amenity place for residents to spend their time.

Final cross-sections will be approved as part of detailed design at subdivision application stage. Council will apply discretion to the reduction of the drainage reserve cross-section so long as the overall drainage function is not compromised and that the plans can meet wetland treatment requirements and provide appropriate area for retardation storage and conveyance of the 1 in 100 year event.

The Development Plan has been cognisant of the impacts on overall development ability of lots containing the north-south drain. It is proposed that drainage in the south-west corner of the study area will be piped (with some overland flow along future road reserves) in order to minimize the impacts on developable yields. This is integral as development in this location is the trigger for development of 'in sequence' sewerage infrastructure connection that will service the whole Development Plan area. A transitional area within the drainage reserve at this south-west corner of the Development Plan area, will allow for the capture and direction to the future pipeline, of the more frequently occurring overland flows from the existing urbanised catchment.

# 10 Water Cycle Management

Houses will front the drainage reserves via the local street network. The Development Plan requires that all housing is setback from the drainage reserve by a local street. This will ensure houses will present to the street and drainage reserves, avoiding a blank wall of back fences along these public open space areas. This will activate these spaces and improve the surveillance of pedestrians and cyclists, as well as maximise the amenity to residents. (Refer to Figure 6).

## 10.2 Retarding Basins

In total, four retarding basin/ wetland facilities have been proposed. The drainage reserves water to accommodate the retarding basin/wetlands have been sized to respond to their location in the catchment, and range in size from 0.3Ha – 3Ha. Consolidation of retarding basins within the drainage reserves and wetland areas has been achieved where possible to respond to topography and maximise land efficiencies. The retarding basins will incorporate shallow inundation to provide opportunities for establishing wetlands and improving overall ecological integrity.

# 10 Water Cycle Management

## 10.3 Statutory Assessment Guidelines

- Water Sensitive Urban Design (WSUD) should be incorporated into the design of all streets and public land.
- A drainage reserve should be provided from Maryvale Recreation Reserve to the west, south of Gordon Street. This reserve would then run north-south from Gordon Street to the edge of the Development Plan area in the north following the natural drainage line. The width of which would typically be in the order of 25 – 40 metres for conveyance of the 1 in 100 year ARI flows.
- A retarding basin with a wetland function with storage of about 30,000m<sup>3</sup> and treatment area of approximately 0.75Ha should be located in the drainage reserve immediately north of Gordon Street.
- A wetland 0.23Ha will be required in the north-western corner of the growth area.
- A wetland of 0.15Ha will be required south of Leonard Street and east of the north-south drainage line to treat stormwater from a small catchment.
- The drainage reserve north of the Maryvale Recreation Reserve will include a wetland of 0.8Ha. This wetland will be offset from the east-west drainage reserve.

The small north-east catchment on the south side of Crinigan Road comprises 3 Ha east of Maryvale Road and 12Ha within the Development Plan area that is contained within one landholding. The stormwater treatment obligations for this catchment have been factored into the sizing of the four wetlands in the other sub-catchments and therefore no further treatment is required within this catchment. On-site stormwater detention will be required for this catchment prior to discharge west along Crinigan Road.



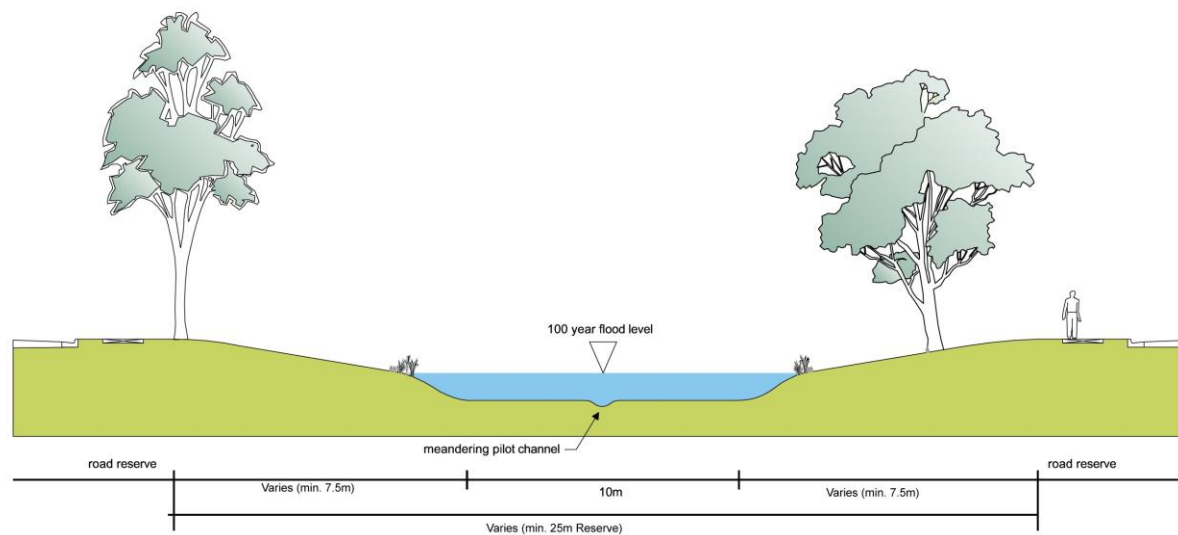


Figure 4: Typical Drainage Reserve Cross Section

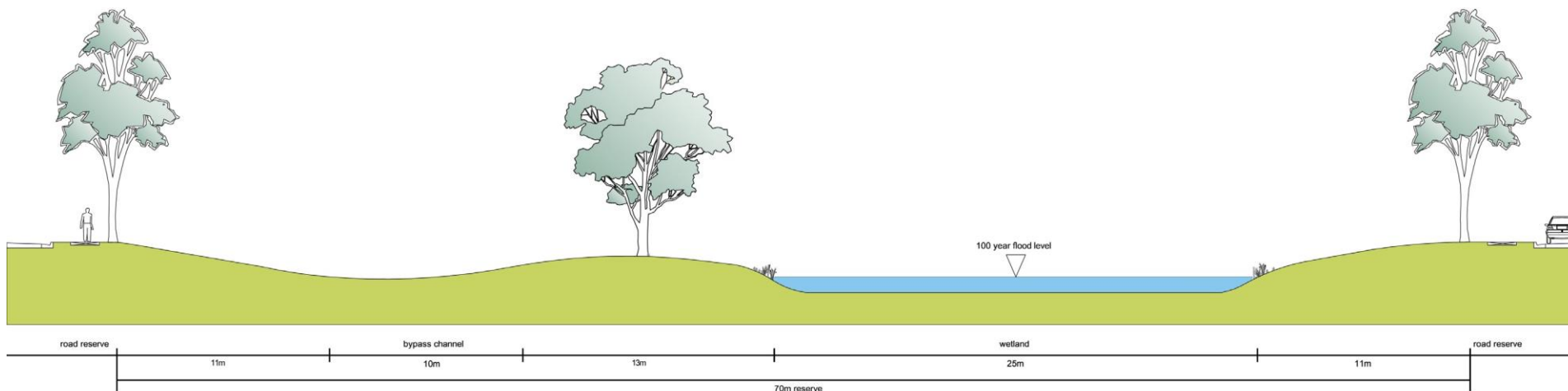


Figure 5: Typical Drainage Reserve and Bypass Channel Cross Section

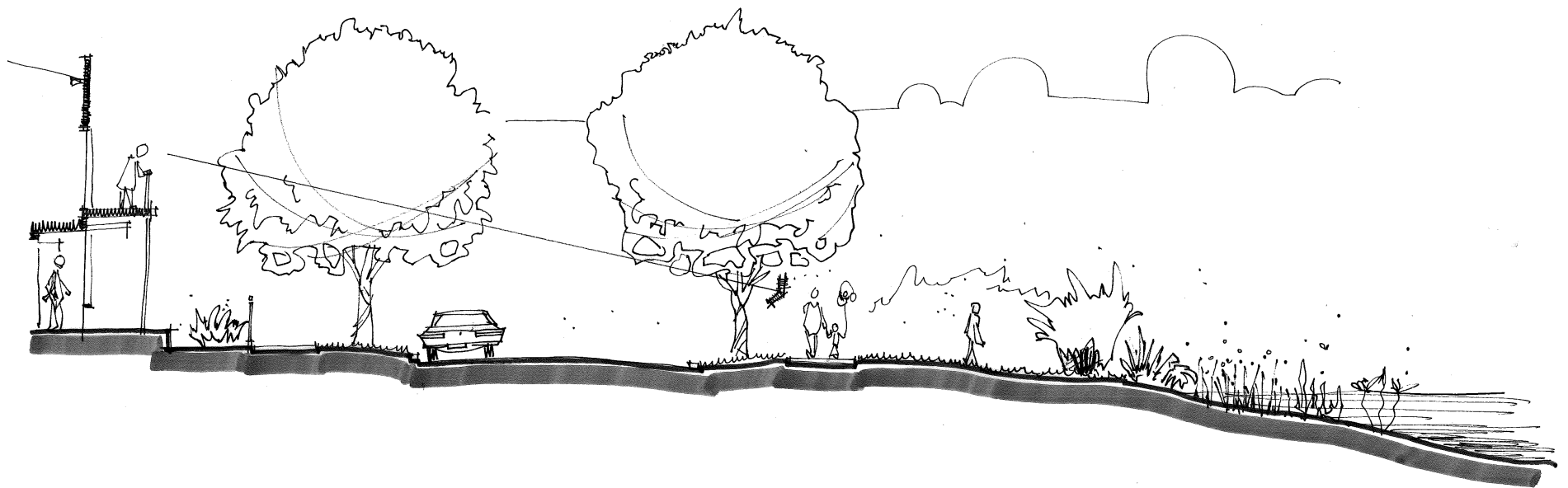


Figure 6: Illustrative Drawing of Dwellings Fronting Open Space and Wetlands

# 11 Landscape

Given the farming history of the area, landscape values are currently limited. Road side vegetation and perimeter or screen planting defines the core landscape value at present. Developing a landscape quality that assists in establishing a sense of place for this new community is essential.

The Development Plan proposes a network of 'green streets' as a key feature in the growth area. These streets, incorporating shared pathways, will include strong landscaping themes that provide visual cues to naturally guide people to key assets in the area including open space, wetlands and the neighbourhood centre.

A hierarchy of landscaping is proposed for the Development Plan area. The opportunities for signature planting in key locations are encouraged in and around the neighbourhood centre to improve the overall amenity and enjoyment of the activity centre.

- Canopy trees that provide for shade are encouraged in the main street of this centre.
- Signature planting along key connector streets is also encouraged to affirm the emerging quality of place.
- An alternate landscaping theme is proposed for the local roads. This hierarchy of landscape will assist in establishing visual cues and permeability through the new neighbourhoods.

It is recommended that Council re-think the landscape treatment at the northern boundary of Maryvale Reserve. While this land is outside the study area, it acts as a core active open space for the new community and as such it is important to enhance its visibility.

Currently, this interface is lined with established non-indigenous trees. It is understood that these trees do not serve a functional purpose as a wind buffer, and are currently impacting on the function of the east west drain that runs directly below the trees.

On this basis, Council are open to the replacement of these trees with a planting scheme of native trees of height and coverage that will create a positive interface and assist in opening up this reserve to the new residential community. This initiative will need to be taken up by Council as this land falls outside the Development Plan area.

Typical cross sections for the collector and local streets are illustrated in Figure 7 and 8.

## 11.1 Statutory Assessment Guidelines

- A landscape masterplan must be prepared and submitted as part of any subdivision application. The landscape plan must include:
  - The location of pedestrian pathways, signage, fencing, public lighting and street furniture.
  - The areas of public open space and road reserve to be planted, including landscape detail.
  - The detailed design of drainage areas.
  - The shapes, species, height and placement of trees.
  - The vegetation to be retained and removed.
- The landscape design should:
  - Ensure landscaping supports surveillance and provides shades in streets, parks and public open space.
  - Develop appropriate landscapes for the intended use of public open space including areas for passive and active recreation, the exercising of pets, playgrounds and shaded areas.
  - Provide for walking and cycling networks that link with community facilities.
  - Provide appropriate pathways, signage, fencing, public lighting and street furniture.

# 11 Landscape

- Utilise existing trees and areas of planting as settings for recreational and play areas, and take advantage of their aesthetic qualities as a feature within the development.
- Create low maintenance, durable landscapes that are capable of a long life.
- Streetscapes and Public Open Space must be planted with native vegetation from Council's preferred planting schedule.
- Key collector streets should be planted with trees from Council's landscape schedule, including:
  - *Acer rubrum* 'Autumn Flame';
  - *Acer truncatum* 'Warrenred';
  - *Celitis australis*.
- Local collector streets should be planted with trees from Council's landscape schedule, including but not limited to:
  - *Acer campestre*;
  - *Acer platanoides* 'Globosum';
  - *Callistemon* 'Kings Park Special';
  - *Cercis chinensis*;
  - *Pyrus chanticleer*.



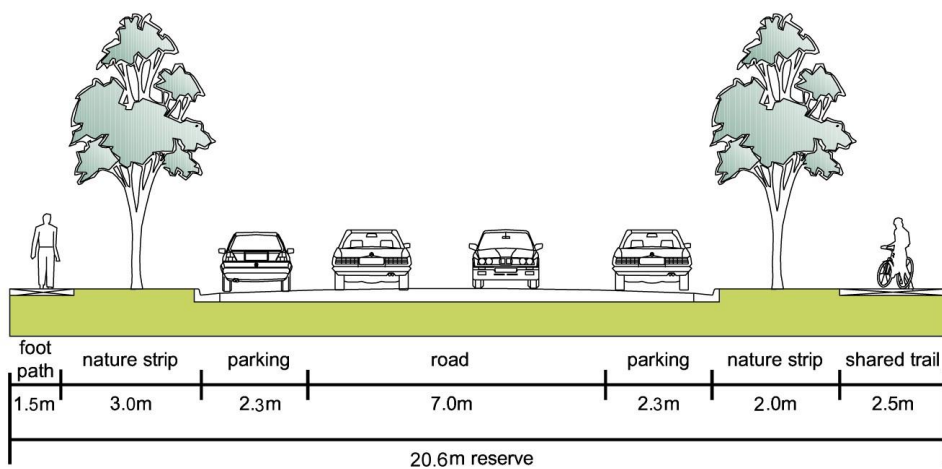


Figure 7: Collector Road Cross Section

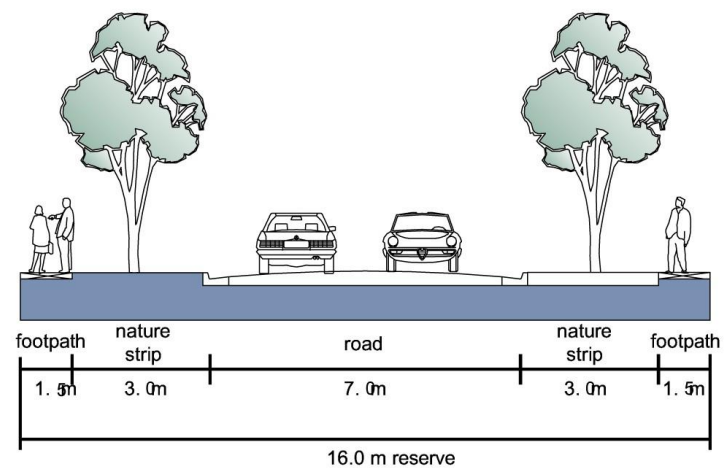


Figure 8: Access Street Cross Section

# 12 Native Vegetation

## 12.1 Grassy woodland

Ecology Partners identified areas of Plains Grassy Woodlands of variable condition on parcels to the east and west of English Street. Following discussions with DELWP (formerly DSE), it has been determined that further assessment of this vegetation will be required at detailed subdivision design stage, for affected properties. A net gain assessment will be required before any permits will be issued by Council in accordance with Clause 52.17 of the *Planning and Environment Act 1987*. The Development Plan will identify the areas of concern so that landowners fully understand the requirements moving forward. Assessments will determine the extent of vegetation to be retained and/or if any can be removed and the offset areas required as a result. This assessment will be approved by DELWP.

## 12.2 Swamp scrub

A sizeable area of swamp scrub is located in the south-west corner of the growth area. Following discussions with DELWP, it has been determined that further assessment of this vegetation will be required at detailed subdivision design stage, for affected properties. A net gain assessment will be required before any permits will be issued by Council. The Development Plan will identify the areas of concern so that landowners fully understand the requirements moving forward. Assessments will determine the extent of vegetation to be retained and/or if any can be removed and the offset areas required as a result. This assessment will be approved by DELWP.

Avoiding a loss of vegetation in this area is particularly important from both a biodiversity and drainage perspective. Retention of vegetation will reduce the impact of drainage. Overland flows will be directed along the east-west street and through the native vegetation areas toward the wetland in the south-west corner.

The vegetation and wetland design in this area will be determined with DELWP and Council. As such, the ultimate drainage solution and street layout may vary from that shown on the Development Plan. Council accepts this position. For the benefit of the whole growth area, Council will need to ensure that the layout in this area provides some lots and development potential. These lots will trigger programmed (in sequence) sewer works which will assist the servicing capacity of the whole growth area.

## 12.3 Statutory Assessment Guidelines

- In accordance with the provisions of the Latrobe Planning Scheme, a net gain assessment and (subject to certain exemptions), a planning permit would be required prior to the removal of any native vegetation.
- This applies to all land in the growth area and not just that illustrated on the Development Plan as containing native vegetation.
- Subject to further and more detailed assessments of native vegetation and other site considerations, the Development Plan may be required to be amended to accommodate the findings of future assessments.
- Given the potential presence of some EPBC Act matters within the study area, an EPBC Act referral to the Commonwealth Environment Minister should be considered prior to any Development.
- For vegetation clearance within public land, such as along English Street, an FFG Act permit to clear or disturb native vegetation may be required, but for the majority of the site, which is private land, an FFG Act permit is not required (but DELWP may still consider any implications on FFG listed species/communities).

# 13 Open Space

The open space network contains a number of key elements which are discussed below.

A number of these elements are associated with the drainage network that traverses the site. The GAA encourages the productive use of encumbered land for open space purposes in growth areas. These spaces will be well designed for passive recreation purposes, and provide a good location for walking or cycling.

The GAA has determined that while these areas are not provided as a credit against public open space requirements that regard is taken to the availability of encumbered land when determining the open space requirement.

## 13.1 Linear OpenSpace

A core linear open space network is provided along key north-south and east-west connector roads as part of the drainage reserve. This network aims to increase incidental activity by building an environment where cycling or walking becomes a desired mode of transport, particularly for school aged children. In accord with GAA standards, the linear parks and trails are located along waterways and linked to vegetation corridors and road reserves within 1 kilometre of 95% of all dwellings.

## 13.2 Local Play Areas

Council policy requires that local parks are provided within a 500m catchment of all dwellings. This radius enables clear sightlines to encourage passive surveillance in surrounding areas and is developed in accordance with the Crime Prevention Through Environmental Design (CPTED) Planning principles. The GAA requires that local parks are located within a 400m safe walking distance of at least 95% of all dwellings.

# 13 Open Space

The Development Plan proposes three parks which are distributed to meet Council and the GAA's requirements:

- A hilltop park is located in the northern part of the Development Plan, north of Ashley Street. This park will take advantage of the topography of the site. This park will include a walking trail, seating, bins and lighting.
- A local park is located to the west of the main collector and local centre. Passive surveillance will be provided to the park by adjacent medium density housing. The street network provides good links to the park, which will be a destination for the neighbourhood. This park will include a walking trail, seating, picnic facilities, bins and lighting.
- A local park is located in the south-west, to the north of Gordon Street. This park will integrate with the surrounding linear park network and will include a walking trail, seating, picnic facilities, bins and lighting. Housing will overlook the park providing passive surveillance for park users.

No further local play areas are provided. On balance, the neighbourhood is well served with passive open space and good connectivity to district level open space at Maryvale Recreation Reserve. These areas combine to provide a positive open space profile for the growth area, providing access for all residents to open space within walking distance of their houses.

## 13.3 Extension to Maryvale Reserve

A wetland area is proposed at the northern boundary of the Recreation Reserve as part of the drainage strategy. This wetland and surrounds will essentially integrate the recreation reserve into the new residential area. This area will be constructed as a wetland with walking and cycling trails included in the design to attract residents and integrate with the reserve.

## 13.4 Active Open Space

No active open space has been provided in the growth area given the proximity to the Maryvale Recreation Reserve. The GAA requires that all new growth area communities are provided with active open space within 1km of 95% of new dwellings. The Development Plan achieves this outcome.

## 13.5 Statutory Assessment Guidelines

Open space must be provided as per the Development Plan.

- Any variation to the provision of open space in the Development Plan must be agreed with Council at the subdivision stage.
- Any variation is at the discretion of the Council having regard to the open space equalisation, the extent of distribution of public land and the proximity of the Maryvale Recreation Reserve.
- All parks will be transferred to Council and rezoned as Public Park and Recreation Zone (PPRZ).
- All parks must be provided to the satisfaction of the responsible authority before the transfer of land:
  - With completed bulk earthworks where required fit for intended purpose;
  - Cleared of all rubbish and environmental weeds, top soiled and grassed;
  - With a water tapping for recycled and potable water;
  - With landscaping including drought resistant trees and other planting;
  - With shared paths and footpaths as appropriate;
  - With maintenance access points;
  - With installation of basic play equipment as appropriate.



# 14 Access & Movement

The Development Plan has been designed with a clear and legible street network, creating logical connections between residential areas, open space and the local centre. The plan utilises existing roads and road reserves to build the basis for a logical east-west and north-south street grid.

English Street will continue to play a key role, acting as a key connection for residents in the eastern part of the growth area. As such, English Street will require widening however traffic generation data has indicated that there will be no requirement for traffic signals at the Holmes Road intersection.

A new north-south street will connect Gordon Street with the local centre near the Ashley Street extension.

Based on the traffic volumes indicated in Figure 9 of this report, the majority of roads within the subdivision will be classified in accord with the Latrobe City Design Guidelines, Volume 3.1, as minor or major access streets where vehicles are not anticipated to exceed 500 and 2,000 vehicles per day respectively.

A central collector road will provide connectivity from Maryvale Road and the neighbourhood centre through to Latrobe Road. This road will feed from Ashley Street and Heritage Boulevard which are also expected to function as collector roads however their anticipated daily traffic flows are expected to be more consistent with that of an access street.

The southern portion of English Street connecting through to Holmes Road is also expected to operate as a collector road. The collector road network through the subdivision is illustrated in Figure 10. All roads within the subdivision will be designed in accordance with minimum requirements stated in the Latrobe Design Guidelines and/or Clause 56 of the Latrobe Planning Scheme.

# 14 Access & Movement

## 14.1 Traffic volumes

Assessment has been undertaken to determine the traffic volumes on the proposed street network. The original ResCode and its predecessor the Victorian Guide for Residential Developments, Volume 1 suggest that traditional dwellings generate in the order of 10 vehicle movements per dwelling per day with 10% of movements occurring in each peak hour, unless a lower rate can be justified.

To provide a robust assessment of the anticipated daily traffic volumes, the generation rate of 10 vehicle trips per dwelling per day will also be adopted for the medium density lots within the subdivision.

Application of the above rates to the proposed development would suggest the following traffic generation:

- Daily 11,560 vehicle trips; and
- Peak Hour 1,156 vehicle trips per hour.

The directional distribution of traffic generated by the proposed development is generally influenced by a number of factors, including (but not limited to) the following principal factors:

- I. The configuration of access points to the site;
- II. The surrounding local and arterial road network; and
- III. The surrounding employment and attraction centres in relation to the site.

Having consideration for the above, the majority of traffic travelling out of the subject site will be directed to or wishing to head south towards the town centre.

Based on the above assumptions, the traffic volumes at external points are provided in Figure 9. The anticipated traffic volumes at intersections with Holmes Road, Maryvale Road and Latrobe Road are approximately 3,000 vehicles per day. The current intersections have capacity for these volumes in their existing configuration. No traffic signals are required. Key internal streets are forecast to carry in the order of 2,000 vehicles per day. This volume is considered appropriate for this category for roads in accord with the City of Latrobe Design Guidelines, Volume 3.1. English Street will require widening to accommodate traffic.

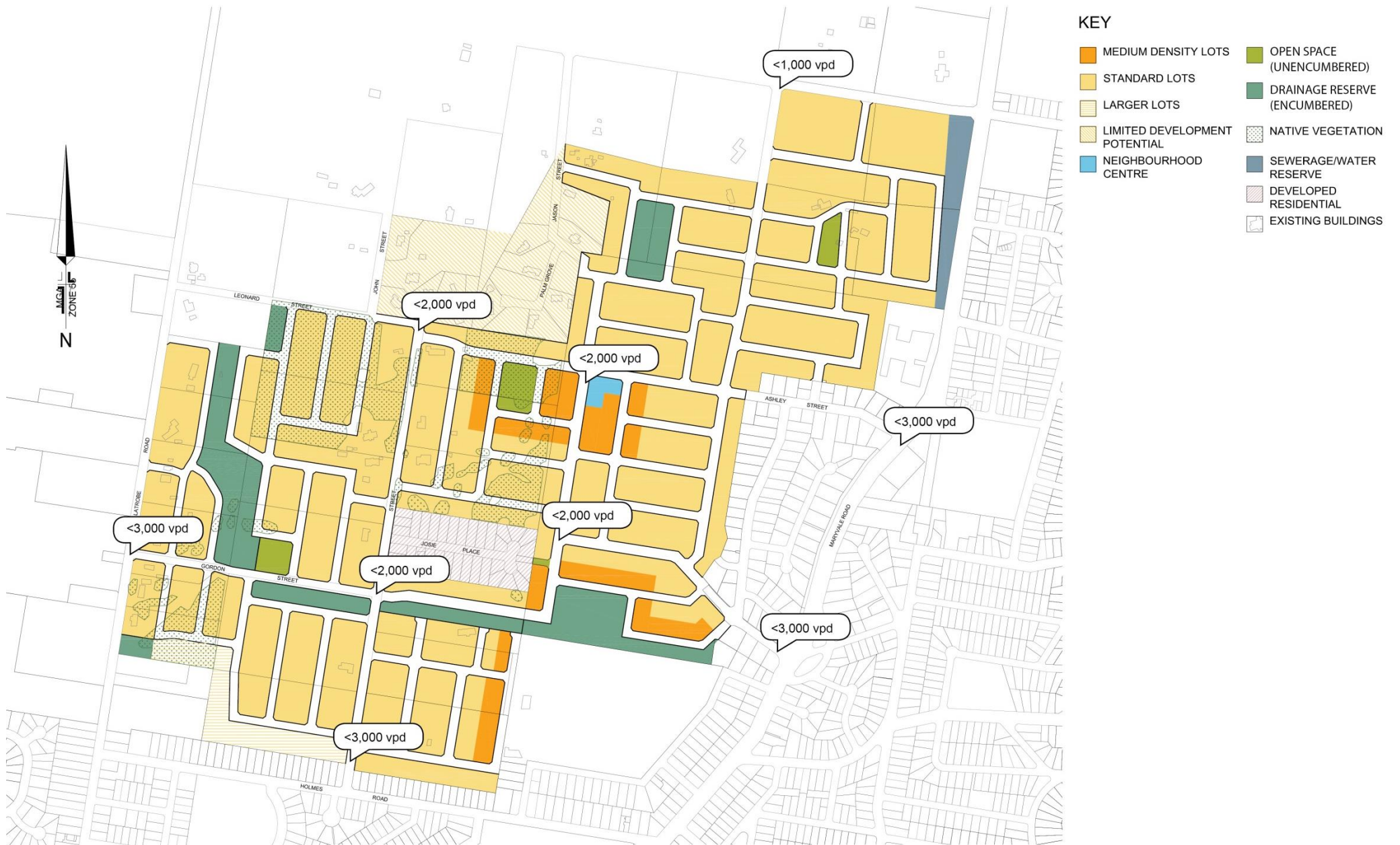


Figure 9: Daily Traffic Volumes



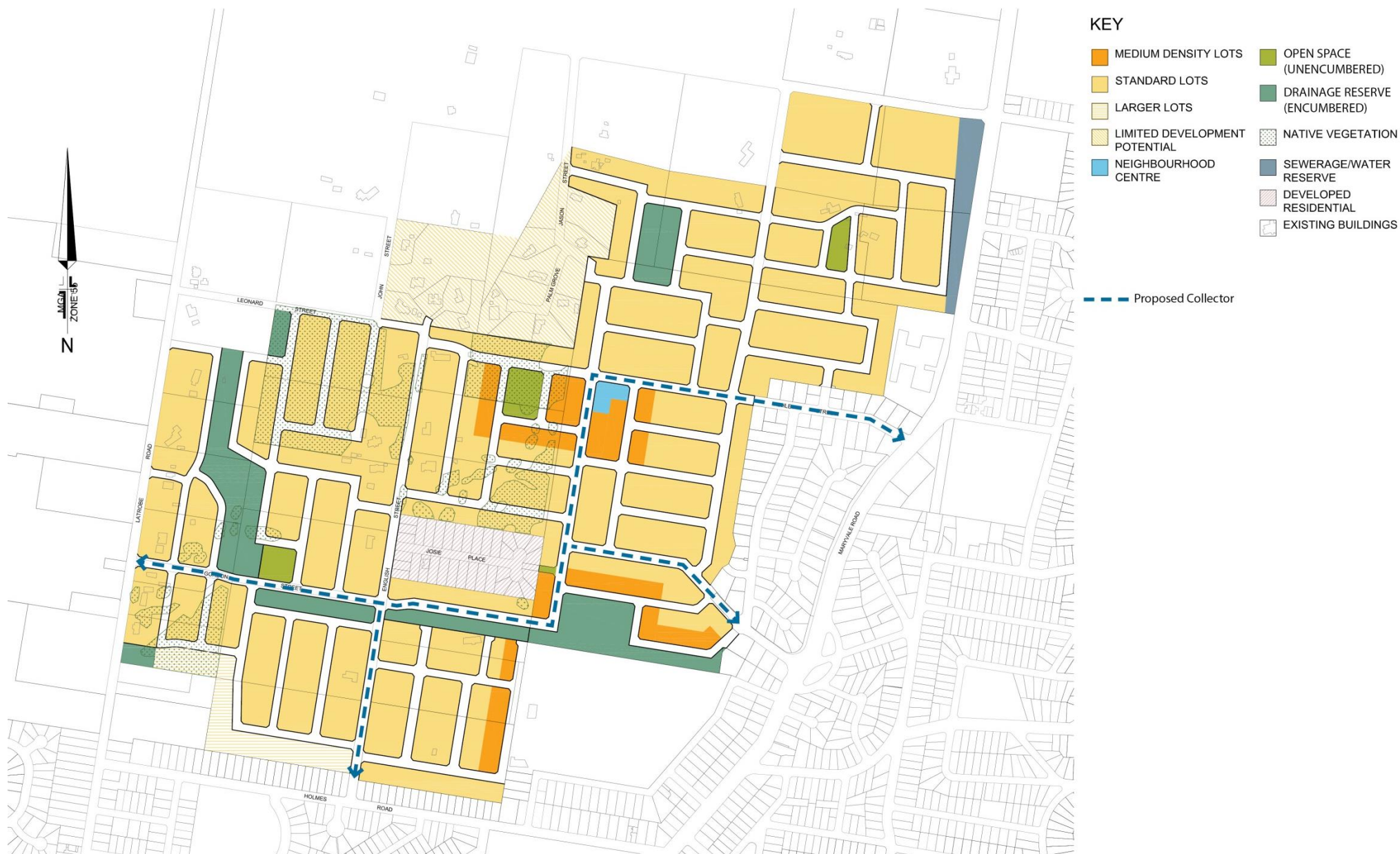


Figure 10: Collector Roads



# 14 Access & Movement

## 14.2 Intersections

It is anticipated that the majority of traffic generated by the proposal would be destined to and from the east towards the town centre where a connection is provided via Maryvale Road.

It is considered that the development sites external connections to Maryvale Road provide for sufficient capacity to accommodate the traffic generated by the development and the existing right turn lanes along Maryvale Road further aid the intersection from both a capacity and safety point of view.

In contrast to the above, the Holmes Road / English Street intersection and the Latrobe Road / Gordon Street intersection do not provide the ability for a through vehicle to pass a stationary right turning vehicle from the main road (Holmes Road and Latrobe Road).

Given the potential for these intersections to facilitate a large number of right turning traffic, especially during peak hour evening traffic, a right turn treatment along Holmes Road at the English Street intersection and along Latrobe Road at the intersection of Gordon Road should be constructed to allow west and northbound traffic to pass vehicles waiting to turn right.

Both Latrobe Road and Holmes Road will, therefore, be provided with an auxiliary lane turn treatment (AU) at the intersections of Gordon Street and English Street. The separate lane will enable the right turn to be performed in an additional lane, thereby, enhancing the safety of right or left-turning vehicles.

## 14.3 Public Transport

The proposed sub division layout intends to provide carriageways and intersections capable of catering for a future bus route along the route illustrated in Figure 11.

The proposed route allows for buses to enter the site via Ashley Avenue from Maryvale Road until reaching the neighbourhood centre. The route will then travel south before again heading westbound to Latrobe Street.

This route will enable all lots within the subdivision to be contained within 400m of public transport, which is a requirement of the Public Transport Guidelines for Land Use and Development. At this time bus stop locations have not been defined, however it is expected that key areas such as the wetlands adjacent to the Maryvale Recreation Reserve and the neighbourhood centre would be ideal locations. Bus stops will be determined by Council and bus providers.

# 14 Access & Movement

## 14.4 Shared pathways

Shared pathways will be introduced to key streets to enhance walking and cycling opportunities.

A 2.5 metre shared path system is proposed on the key north-south connector road. This route will provide direct links via walking and cycling to key assets within and outside the growth area including the neighborhood centre, the wetlands, the Maryvale Recreation Reserve, the consolidated school site and Latrobe Leisure.

A 2.5 metre shared path system is proposed on the key east-west connector road to connect to existing bicycle routes and Toners Lane Reserve.

## 14.5 Statutory Assessment Guidelines

- Development should be designed to address the street where possible.
- Collector roads should be designed to be consistent with the cross section in Figure 7.
- Local streets should be designed to be consistent with the cross section in Figure 8.
- A permeable street network must be created. Cul-de-sacs will not be restricted.
- Roads and street cross sections should be consistent generally within the City of Latrobe Design Guidelines, Volume 3.1 for the particular category of road. Walking and cycling paths should be constructed by developers as part of subdivision works (before the issue of a statement of compliance).
- Development should discourage unintended through traffic in residential areas by ensuring that main through routes are more direct or more easily accessed than unintended through routes.

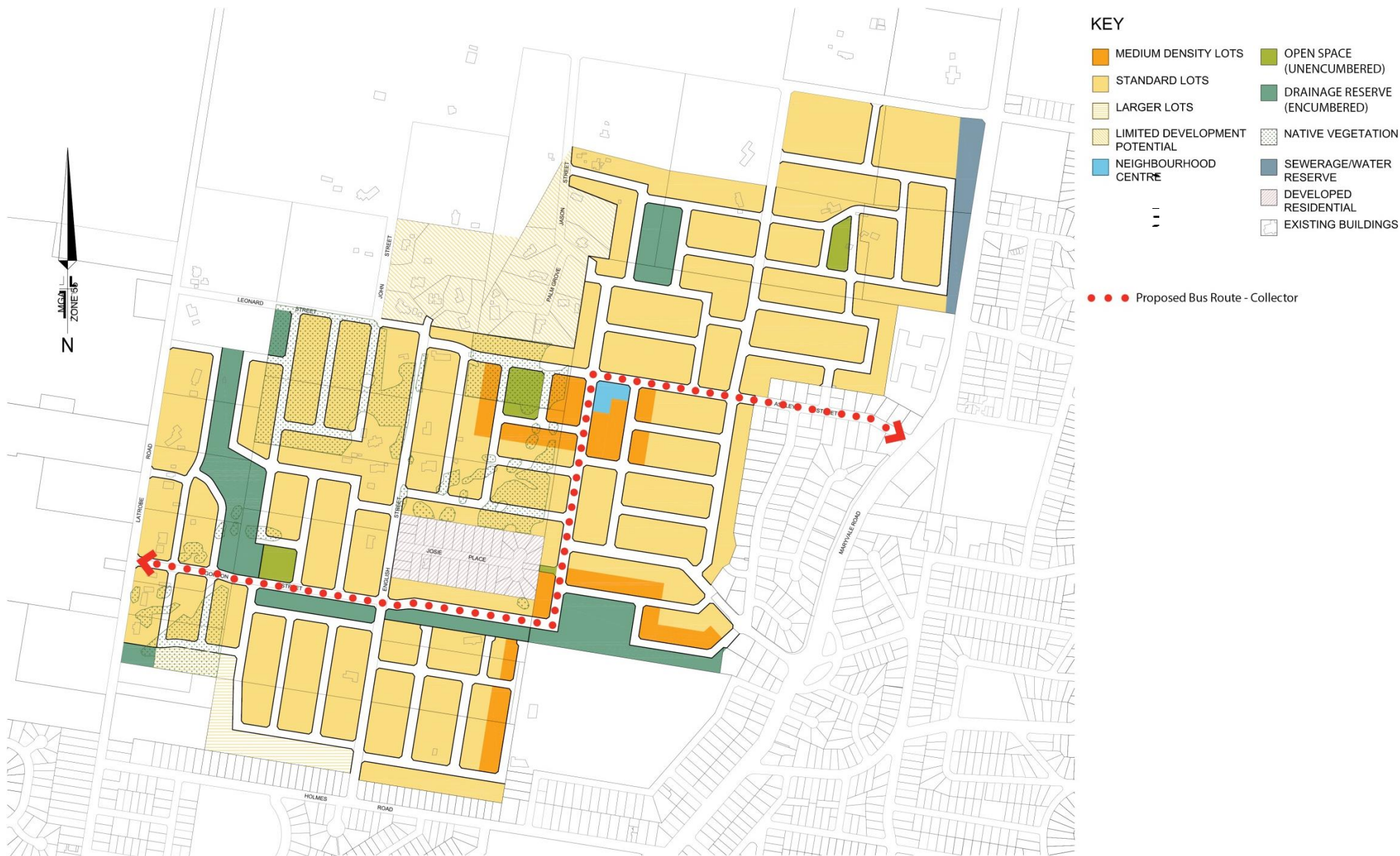


Figure 11: Proposed Bus Route

# 15 Infrastructure Funding Plan

No formal development staging is proposed. The Development Plan acknowledges that aspirations of land owners and willingness to pay for key service infrastructure will drive the staging of the growth area.

The ability to open up multiple development fronts to provide for overall diversity and affordability should be Council's priority. So long as development is in accord with the approved Development Plan and the development contributions scheme, the growth area will evolve in an integrated and logical manner. Council does not support out-of-sequence development where there is an increased liability to Council. Infrastructure identified in the Infrastructure Funding Plan will be provided as funds permit. Latrobe City Council acknowledges its role in funding the identified external proportionment of the drainage infrastructure.

## 15.1 Introduction

The purpose of the Infrastructure Funding Plan (IFP) is to ensure that the cost of providing new infrastructure is shared between the developer and the wider community on a fair and reasonable basis. To achieve this, the costs are apportioned according to a share usage of the required infrastructure.

The IFP identifies essential infrastructure required to service the Morwell North West Development Plan (MNWDP) area and calculates a charge per hectare payable by the developer towards the provision of infrastructure. The types of infrastructure to be shared includes the upgrade of major access road to collector roads, bus stops, drainage infrastructure and open space provision and improvements, and is described in more detail in section 15.6.

The infrastructure funding contributions will apply to

future development within the Development Plan area, herein described as the Main Catchment Area (MCA). The MCA excludes the low density subdivisions along Palm Grove, Jason Court and east of John Street, which are considered to have low potential for further development, and the residential subdivision of Josie Place which is already connected to reticulated sewer and water.

The MCA comprises 23 landholdings having an approximate total area of 124.12ha.

The fragmented land ownership pattern of the Development Plan area amplifies the need for an IFP to ensure fair and equitable distribution of infrastructure costs and facilitation of development. The cost apportionment methodology adopted in the IFP relies on the nexus principle where a development is considered to have a nexus with an infrastructure item if it is likely to make use of the infrastructure in question. Costs are then apportioned according to a projected share of infrastructure usage based on the developable area.

The structured collection of infrastructure funding contributions provides for the in-sequence delivery of key infrastructure. An allowance for external demand of the drainage infrastructure has been factored into the calculation of infrastructure charges with external proportionment applied to the nine drainage channel construction projects.

## 15.2 Shared infrastructure principles and approach

The IFP adopts a 25-year outlook for development and infrastructure delivery based on the strategic framework for the Morwell North West area. It is estimated that development will commence in 2011, with full

development of the IFP area by 2036. It is likely that development will proceed from east to west due to the need to upgrade the sewer servicing the western portion of the MNWDP.


The IFP considers six infrastructure categories: Roads; Roads Land Acquisition; Intersections; Public Transport; Drainage; and Open Space Works. It is determined that residential development will make use of all six infrastructure categories, and will be liable to pay a contribution for provision of these items.

Council has convened a Development Assessment Team that co-ordinates design advice and agrees on the rollout of the infrastructure projects. Consultation with land owners occurs annually to understand their development intentions. In assessing a development proposal, the team considers how a developer wishes to develop their land holdings (identified at Figure 15) and identifies all the items of infrastructure they wish to provide in lieu of cash. Once the physical works to be provided have been determined, the co-ordination of the provision and staging of works between individual developers is managed to ensure the timely delivery of infrastructure so that it appropriately supports development.

Where the Council identifies that a project is not to be covered by works in kind, the Council is required to deliver the project. Annual consultation is necessary to ensure that Council has sufficient funds to time the construction of the infrastructure projects to ensure an integrated and logical approach to the provision of infrastructure within the strategic planning framework of the MNWDP.





 Infrastructure Funding Plan (IFP) boundary

Note: the property numbers shown on this plan related to the detailed property land budget forming part of the IFP.



Figure 15: Land Holdings

# 15 Infrastructure Funding Plan

## 15.3 Open Space Equalisation

The Development Plan provisions of unencumbered open spaces and encumbered drainage and water supply reserves for each property within the MCA, are set out in Table 3 – Open Space Equalisation Schedule. The purpose of this table is to distribute the value of the provision of open spaces across the MCA, identifying both credits and contributions payable for each property. It is recognised that the drainage and water supply reserves offer passive recreational and visual amenity to the Development Plan area. Accordingly, the drainage reserves have been assigned a reduced land value equal to 20% of the unencumbered open space value. The water supply reserve is not constrained by inundation and has therefore been assigned a reduced land value equal to 50% of the unencumbered open space value. On this basis, an equivalent total open space of 4.03Ha or 3.25% of the MCA has been determined.

## 15.4 Land Value

In preparing the *Infrastructure Funding Plan* (2010), property valuations (for unimproved land) were undertaken by CJA Lee Property for Latrobe City Council and are presented in their Valuation Report dated 9th November 2009. The average land value per hectare for the 23 properties within the MCA is approximately \$105,000. In 2018, as part of the annual indexing, the average land value per hectare for the 23 properties within the MCA is approximately \$194,555. This land value has been adopted as the basis for determining compensation for road widening given in Table 2 and for the equivalent open space credits and contributions specified in Table 3.

### Revised Net Developable Area

In 2016, as part of the 5-year review and the subsequent drainage review, the land value per net developable hectare was updated. The Net Developable Area (NDA) has been modified accordingly:

- Property 11 (55 English Street) NDA reduced by 0.13 hectares due to expansion of WR02 retarding basin, which also included 0.27 hectares that was originally designated as unencumbered open space being required for the retarding basin as identified in the Drainage Study completed in 2016 (PGA).
- Property 17 (40 English Street) NDA reduced by 0.34 hectares due to expansion of CH05 identified in the Drainage Study completed in 2016 (PGA).
- Property 19 (23 Jason Street) NDA reduced by 0.173 hectares to accommodate the additional land required for drainage reserve WR04 as identified in WR04 Drainage Review completed in July 2017 (PGA).
- Property 20 (77 Ashley Avenue) NDA reduced by 0.1697 hectares to accommodate the additional land required for drainage reserve WR04 as identified in WR04 Drainage Review completed in July 2017 (PGA).
- Property 21 (84 Ashley Avenue) NDA reduced by 2.40 hectares as this land has already been subdivided and planning permits issued.

In summary, as a result of the additional studies completed, the NDA has been reduced by total of 3.21 hectares. The Upper Catchment identified in the WR04 drainage review Water Technology Report will continue to provide its own drainage infrastructure. As a result 6.54 hectares is removed from Property 21's NDA and the total NDA for all drainage projects is 99.45 hectares so as to avoid any double dipping. As a result of all the updates, the total Infrastructure

Charge per NDA in 2018 \$ is \$127,368 for all land excluding the upper catchment located on Property 21. The total infrastructure charge for the upper catchment area within property 21 is \$70,732 and this area must provide its own drainage infrastructure. The total NDA is 102.58 hectares for all drainage projects and 109.13 hectares for all projects excluding drainage. Council's total liability due to external apportionment is \$2,098,403 in 2018 \$.

## 15.5 Shared Infrastructure Projects

Reticulated water supply and sewer services are not included in the Infrastructure Funding Plan, as Council is not the designated service provider for these services. The developer will need to make separate arrangements with the individual service authorities for the provision of these services. The infrastructure items identified in the Infrastructure Funding Plan (IFP) are:

### Road Infrastructure

Project Nos. RD1-RD04 in Table 2.

The IFP will fund the upgrade and construction of all proposed collector roads within the Development Plan area, including the bus route which will be constructed to a collector road/bus route standard, (see Figure 12 of the MNWDP). Developers will fund the construction of all roads within the Development Plan area to a Major Access Street standard, defined in the Latrobe City Guidelines as a 7.0m carriageway within a 16.0m reserve with a footpath on both sides of the road. This cross-section is designed to carry up to 2000 vehicles per day and is illustrated in figure 8.

A collector road network for the Development Plan area is shown on Figure 10 and IFP elements identified on Figure 12. English Street, south of Gordon Street to the Holmes Road intersection, and the western extension of Heritage Street, will comprise a 7.0m carriageway within

# 15 Infrastructure Funding Plan

a 20.0m road reserve, with shared path on one side and footpath on the other. This section is shown on Figure 7.

The IFP will fund the widening of the collector roads/ bus route additional to the 18.0m reservation, to be set aside by developers of properties fronting the collector roads. The width of the existing reservation of Gordon Street is 15.25 metres. It was originally proposed that the road widening would be all on the north side of the existing reservation, so as to minimise the impact on the redevelopment opportunity for the relatively narrow landholding on the southeast corner of Latrobe Road and Gordon Street. Prior to the Five Year review of the Development Contribution Plan, a decision was made to align pavement of Gordon Street to the south of the existing drainage for the section abutting 25 and 55 English Street. This change in alignment impacted two additional properties being 130 Latrobe Road and 120 Latrobe Road. The existing English Street reservation is 20.0m and therefore no further widening is required. Section 16.3.1 below addresses the land value assigned in the IFP.

The east-west collector road linkage of Ashley Street to Latrobe Road along Gordon Street is proposed to operate as a bus route. For the purposes of deriving IFP costs, the bus route is proposed as an 11.6m carriageway, inclusive of parking bays, a 2.5m shared path one side and a 1.5m footpath on the other, within an 20.6m road reservation. This cross-section allows for a minimum verge width of 4.5m in accordance with Latrobe City guidelines. The IFP will fund the upgrade of this road from a basic Major Access Street standard to a collector road/ bus-route standard.

## Roads Land Acquisition

Project Nos. RD5-RD09 in Table 2

The IFP will fund the widening of the collector roads/bus

route within the Development Plan area, including the acquisition of land on the properties fronting collector roads. This cost does not include funding for the preparation and implementation of a Public Acquisition Overlay.

## Intersections

Project No. IN01, IN02 and IN03 in Table 2

The IFP will fund the full construction of a roundabout at the cross-intersection of English Street and Gordon Street. The IFP will also fund the full construction of the intersections of Gordon Street/Latrobe Road and English Street/Holmes Road. Both of these intersections will be provided with an auxiliary lane turn treatment (AU) along Latrobe Road and Holmes Road respectively, to enable the right turn to be performed in an additional lane. This will enhance the safety of right and left-turning vehicles. The cost of constructing the equivalent intersection at English Street/Holmes Road has been estimated slightly higher due to the existing urban conditions and the likely requirement to relocate services and reinstate or alter other existing features. The IFP will fund the full construction of a roundabout at the cross-intersection of English Street and Gordon Street.

## Public Transport

Project No. PT01 in Table 2

Indicative bus stop locations within the Development Plan area are shown on Figure 12 and are spaced at approximately 300-metre intervals near the activity centre, Maryvale Recreation Reserve and at road intersections. The IFP was originally to fund the provision of bus stop facilities, inclusive of paving, signage and bench. However, a change of position by Public Transport Victoria in 2016 after the installation of the first two bus stops, has led to these items being removed from the IFP going forward, as of 2018.

## Drainage

Project Nos. WR01-WR04, CH01-CH07, CV-01-CV02 and PI01 in Table 2

The Stormwater Management Strategy, December 2008, describes the major drainage infrastructure required to service the Plan area and to continue to cater for the large external urban catchment to the south. These drainage works are itemised in Table 2 and are shown on Figure 13. A proportion of the drainage works has been apportioned to external demand and resides with Council for funding. The provision of the drainage infrastructure is an essential component of the infrastructure and will need to be considered by Council early in the process, with consideration of early funding.

The IFP will fund an upgrade of the existing principal open drain through the Development Plan area and the provision of stormwater detention and wetland facilities, including drainage channels and culverts under existing roads. It is proposed to re-align and enlarge the existing open drain that flows from Maryvale Recreation Reserve, through the Development Plan area, to Leonard Street. The re-alignment is intended to optimise the subdivision of affected properties. The enlargement will contain the 1 in 100 year flows to within the drainage reserves rather than a broader area, this is currently subject to infrequent inundation.

The existing drain between Latrobe Road, at the southwest corner of the Development Plan area, and Gordon Street, is proposed to be piped to optimise the subdivision of this area. Overland flows will be directed along proposed roads. The drainage reserve at this southwest corner has been set aside to capture overland flow from the existing urban catchment area and direct to the proposed pipeline.

The IFP allows for a depressed collection point and entry structure to the pipeline. Further investigations of the existing drainage network, capacity and overland



# 15 Infrastructure Funding Plan

flow paths will be required to better define the required works.

Four wetlands, three with detention storage, are proposed to control stormwater run-off generated from the various sub-catchments within the Development Plan area.

The small north-east catchment on the south side of Crinigan Road is contained within one landholding. The storm water treatment obligations for this catchment have been factored into the sizing of the four wetlands and therefore no further treatment is required within this catchment.

The developer of the north-east parcel will be expected to demonstrate how storm water discharge volumes from this catchment can be controlled, with no or minimal net impact on downstream properties.

The IFP does not fund the construction of an extended outfall from the proposed wetland east of Jason Street, if future investigations determine such is required.

## Public Open Space Improvements

Project Nos. OS1-OS12 in Table 2.

The amenity improvements to open space and drainage and water supply reserves are identified on the Development Plan. The IFP will fund improvements to the three open spaces, the drainage reserves and the water supply reserve adjacent to Maryvale Road. This is to provide for formal landscaping, paths, park furniture, BBQ facilities, and playgrounds. Informal landscaping and gravel paths are proposed for the drainage and water supply reserves. Aquatic planting of the wetlands is included in the drainage costs.

## 15.6 Calculation of contributions

These works and their estimated costs are summarised in Table 2 – Project Costs. Estimated costs include a 20% contingency allowance in recognition that the estimate has been determined prior to detailed geotechnical investigations, survey and engineering design. IFP costs do not include GST, as GST is not paid on developer contributions. The infrastructure project categories for roads, public transport, drainage and open space improvements have been itemised to facilitate the implementation of the IFP. The IFP items listed in Table 2 are defined on Figure 12 for roads, intersection and bus stops, Figure 13 for drainage and Figure 14 for open spaces.

The road infrastructure, bus stops, wetlands and open space improvements are deemed to benefit only the Development Plan area and are therefore apportioned across the MCA. The main channel upgrade and culvert crossings of English Street and Gordon Street will cater for 100Ha within the MCA and also cater for the 226Ha of existing catchment to the south of the MCA. Accordingly one-third of the channel and culvert costs have been assigned to the MCA. The remaining two-thirds of the channel and culvert costs are to be funded by the City of Latrobe, on behalf of the broader catchment area that contributes to the upgrade requirement for this infrastructure.

## Original IFP and Development Plan (2010)

The total estimated cost of the IFP elements of collector road upgrades, road widening (based on a land value of \$105,000 per hectare), collector roads intersection, bus stops, main drainage infrastructure and open space improvements is estimated as \$11,991,267. The MCA contribution component is estimated at \$10,019,484.

The Net Developable Area of the MCA, excluding existing road reservations, proposed encumbered and

unencumbered open space is approximately 112.34Ha. The derived IFP in 2009 dollars is thus \$89,188.93 per hectare and is to be applied to the Net Development Area, as defined above.

## 5-year Review

After the 5-year review, the total estimated cost of the IFP elements of collector road upgrades, road widening (based on a land value of \$194,555 per hectare in 2018 dollars), collector roads intersection, bus stops, main drainage infrastructure and open space improvements is estimated as \$15,997,954. The MCA contribution component is estimated at \$13,899,551.

The Net Developable Area of the MCA, excluding existing road reservations, proposed encumbered and unencumbered open space is approximately 109.13Ha with a Total Infrastructure Charge derived in 2018 dollars per NDA of \$127,368.78. The derived IFP in 2018 dollars is thus \$70,732.91 per hectare and is to be applied to the Net Development Area, as defined above.

The Infrastructure Funding for each property in the MCA is given in Table 2.

# 15 Infrastructure Funding Plan

## 15.7 Infrastructure Funding Plan – Implementation and Review Mechanisms

It is envisaged that requirements for developers to undertake or make provision for infrastructure or land identified in the IFP will be addressed at planning permit stage. It should be noted that if a project comes under budget as scoped in the IFP, the legislation has provision to reimburse the funds collected or redistribute the money to alternate projects in the area. The processes for implementation of the IFP are outlined in the Development Contributions Implementation Policy and Procedure which should be read in conjunction with this report.

### Annual Indexation

In order to adjust the cost of providing infrastructure projects, on the 1st July every year, the Responsible Authority must:

- adjust the cost of the infrastructure projects by applying the Building Price index;
- adjust the land value component of the infrastructure contribution; and
- adjust the Infrastructure Funding payable for each property.

### Liability for infrastructure funding contributions

Proponents of all development types anywhere in the IFP shall be liable for infrastructure funding contributions regardless of whether or not a planning permit is required. There are no as-of-right exemptions in respect of this requirement.

If a planning permit is issued to allow any development within the area covered by the IFP, the Council (acting as the responsible authority) must, and will, include a condition which will require either:

- The payment of the applicable infrastructure contribution to the Council within a time either specified in the condition or within a time

subsequently specified by Council; or

- The entry into an agreement with Council, by the person liable for the levy, to pay the amount within a time specified in the agreement (Section 46N of the Act).
- In this regard, the Development Plan Overlay states that prior to the grant of a planning permit, the Owner of the land must enter into an agreement under section 173 of the *Planning and Environment Act 1987*. The agreement must provide for infrastructure contributions to be paid in respect of land prior to the issue of a Statement of Compliance in respect of the subdivision of that land.

### Cash or Works-in-kind

Payment of infrastructure contributions is to be made in cash, unless Council determines on a case-by-case basis to accept 'works in kind' in the form of completion of works specified in the Infrastructure Funding Plan. In determining whether to agree to the provision of works or land in lieu of cash, Council, as the Collecting Agency will have regard to the following:

- Only works or land identified in the Infrastructure Schedule can be provided in lieu of cash;
- Works must be provided to a standard that generally accords with the Infrastructure Schedule unless agreed between the Council and the development proponent;
- Detailed design must be approved by the Council and generally accord with the standards outlined in the Infrastructure Schedule unless agreed by the Council and the development proponent;
- The construction of works must be completed to the satisfaction of the Council; and
- There is no additional financial impact on the Infrastructure Schedule.

Where Council agrees that works are to be provided by a development proponent in lieu of cash contributions:

- The credit for the works provided and the land acquired for road widening shall equal the value identified in the Infrastructure Schedule, taking into account the impact of annual adjustments.
- The value of works provided in accordance with the principles outlined above, will be offset against the development contributions liable to be paid by the development proponent; and
- The development proponent will not be required to make cash payments for contributions until the agreed value of any credits for the provision of agreed works-in-kind are exhausted/balanced.

Any agreement under which the Council agrees to accept a non-cash payment must be in the form of an agreement pursuant to Section 173 of the *Planning and Environment Act 1987*. The Collection of development infrastructure levy is administered under Section 46N of the *Planning and Environment Act 1987*. Unless otherwise specified by the Council, payment of a development infrastructure levy is to be made:

- In the case of a subdivision, prior to the grant of a planning permit, the Owner of the land must enter into an agreement under section 173 of the *Planning and Environment Act 1987*. The agreement must provide for infrastructure contributions to be paid in respect of land at least 21 days prior to the issue of a Statement of Compliance for the subdivision of the land or for any stage of the subdivision; or



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- In the case where no subdivision is proposed, the responsible authority must include a condition in the permit that the applicant pay the infrastructure contributions to the Council within a time specified by the Council; or prior to the grant of a planning permit enter into an agreement with the relevant collecting agency to pay the levy within a time specified in the agreement; or
- In the case where no permit is required for the use or development of the land; prior to the grant of a building permit, the applicant must pay the infrastructure contribution to the Council; or enter into an agreement with the Council to pay the levy within a time specified in the agreement.

## Staging of Subdivision

Where the subdivision is to be developed in stages, a schedule of infrastructure funding contributions must be submitted with each plan of subdivision. The schedule must show the amount of infrastructure funding paid for each stage together with running tallies of any credit balance in the amounts provided, to the satisfaction of the Responsible Authority.

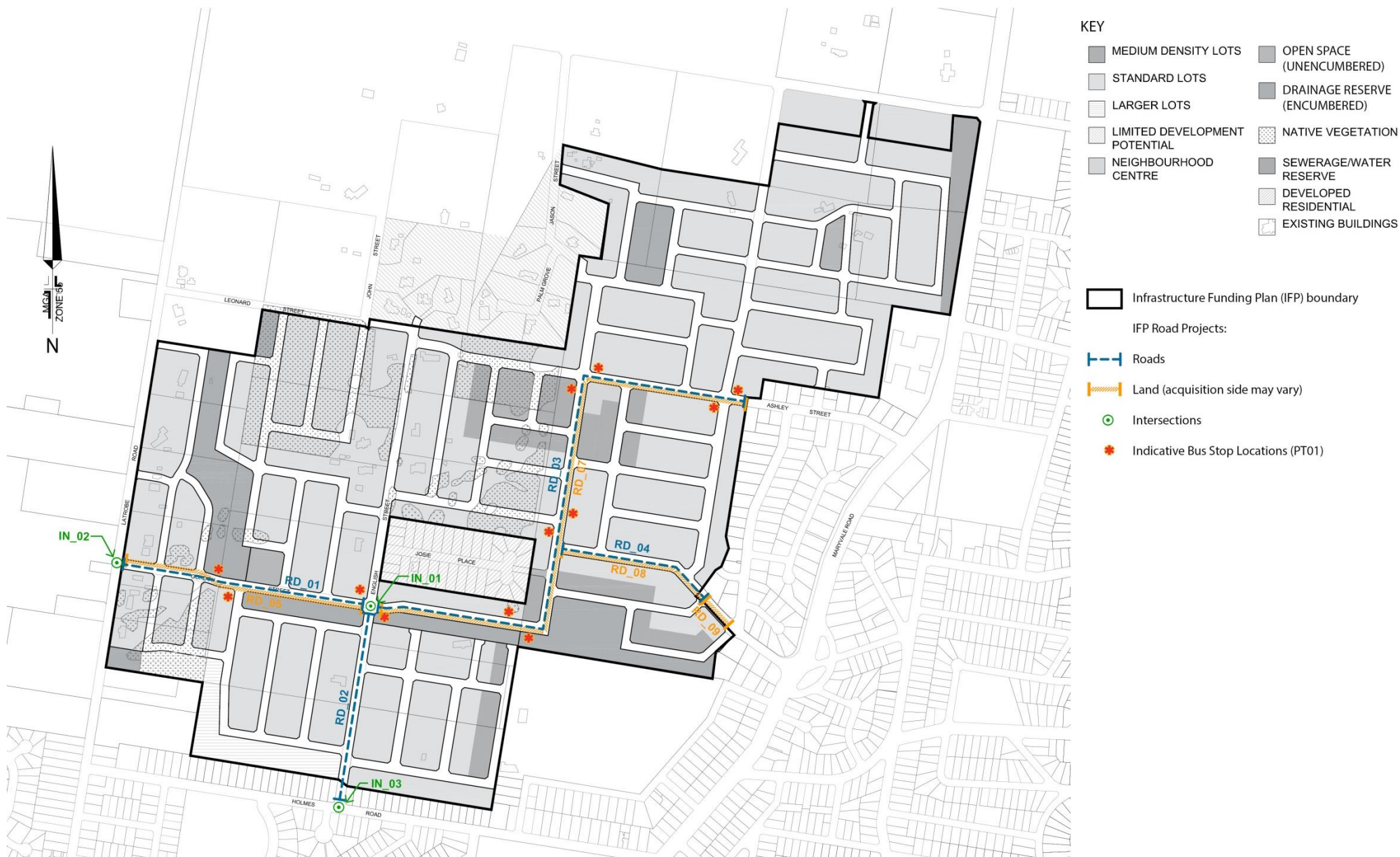


Figure 12: Road Infrastructure

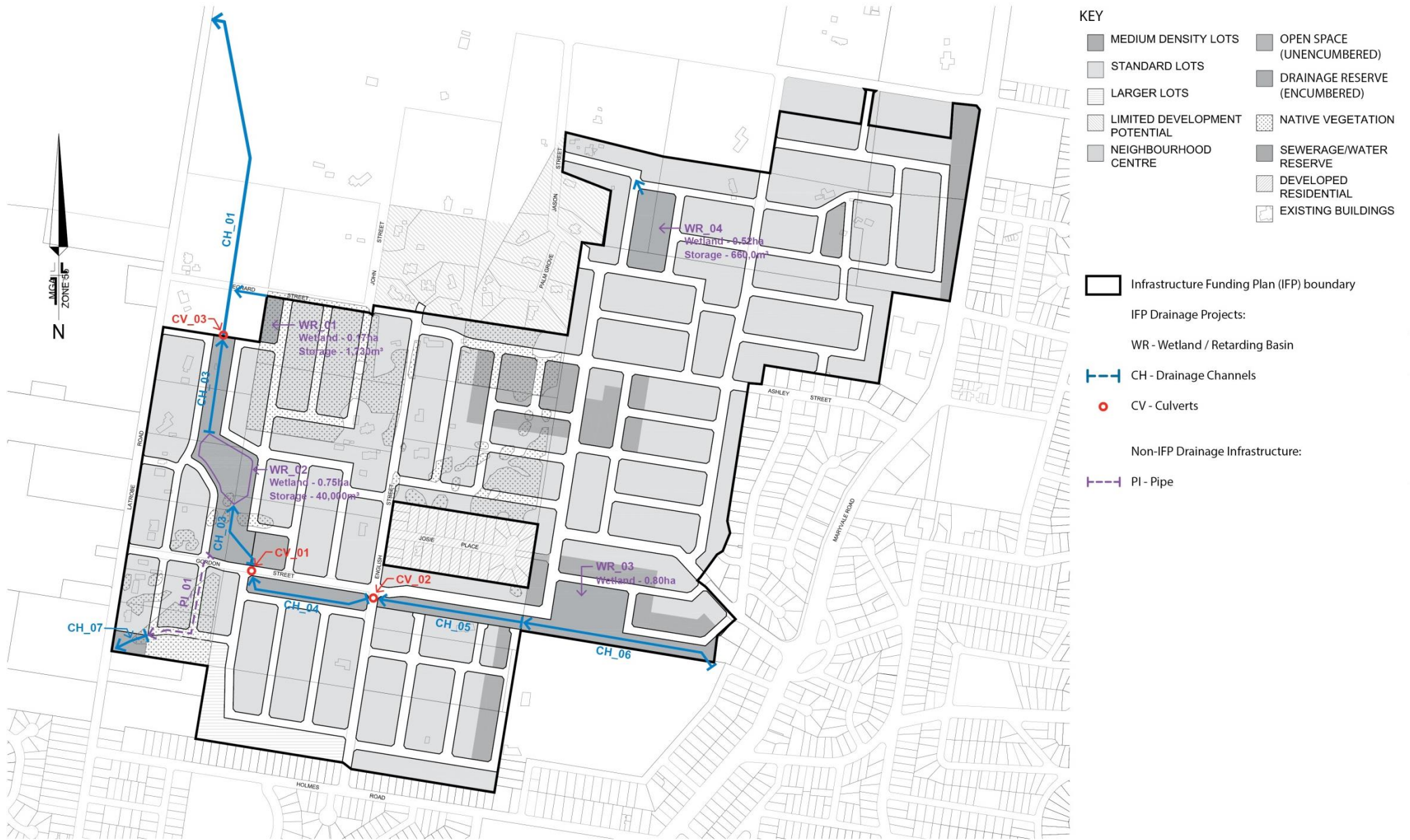


Figure 13: Drainage Infrastructure





Project Item	Project Category	Project Description	Estimated Project Cost 2018				Estimated External Use %	Main Catchment Area Use % (S)	Main Catchment Area Contribution \$	NDA	Charge per hectare
			Quantity	Unit	Rate	Estimated Cost					
RD	Roads - Infrastructure									\$1,651,723	
	RD01 Gordon Street between Latrobe Road & English Street	Upgrade of future Major Access Street to Collector Road - future Bus Route (1)	490	Lm	\$987	\$483,659	0%	100%	\$483,659	109.1284	\$4,432.02
	RD02 English Street south of Gordon Street	Upgrade from Major Access Street standard to Collector Road (2)	370	Lm	\$276	\$102,259	0%	100%	\$102,259	109.1284	\$937.06
	RD03 Ashley Street extension to English Street	Upgrade of future Major Access Street to Collector Road - Bus Route	1190	Lm	\$987	\$1,174,600	0%	100%	\$1,174,600	109.1284	\$10,763.47
	RD04 Heritage Street westerly extension	Upgrade of future Major Access Street to Collector Road	330	Lm	\$276	\$91,204	0%	100%	\$91,204	109.1284	\$835.75
RD	Roads - Land									\$106,111	
	RD05 Gordon Street between Latrobe Road & English Street	Widening - 2.6m for upgrade from Major Access St to Collector Rd-Bus Route	0.13	Ha	\$194,556	\$24,786	0%	100%	\$24,786	109.1284	\$227.13
	RD06 English Street south of Gordon Street	No widening required									
	RD07 Ashley Street extension to English Street	Widening - 2.6m for upgrade from Major Access St to Collector Rd-Bus Route	0.31	Ha	\$194,556	\$60,196	0%	100%	\$60,196	109.1284	\$551.60
	RD08 Heritage Street westerly extension	Widening - 2.0m for upgrade from Major Access Street to Collector Road	0.07	Ha	\$194,556	\$12,841	0%	100%	\$12,841	109.1284	\$117.67
	RD09 Heritage Street between Grant Street and eastern boundary of DP	Widening on south side	0.04	Ha	\$194,556	\$8,288	0%	100%	\$8,288	109.1284	\$75.95
					\$0						
IN	Intersections									\$1,355,501	
	IN01 Intersection of Gordon Street & English Street	Upgrade of Roundabout from 4-way Major Access Streets to East-west bus route, English St south collector, English St north Major Access St	1	No	\$368,502	\$368,502	0%	100%	\$368,502	109.1284	\$3,376.78
	IN02 Intersection of Latrobe Road and Gordon Street	Construction of a Type C Intersection with left and right turning lanes to a divided road estate entry	1	No	\$460,628	\$460,628	0%	100%	\$460,628	109.1284	\$4,220.97
	IN03 Intersection of Holmes Road and English Street	Construction of a Type C Intersection with left and right turning lanes to a divided road estate entry	1	No	\$526,432	\$526,432	0%	100%	\$526,432	109.1284	\$4,823.96
PT	Public Transport									\$5,265	
	PT01 Bus Stops at 300m Intervals	Including signage, paving and bench. Assume on road bus bay.	2	No.	\$2,633	\$5,265.26	0%	100%	\$5,265	109.1284	\$48.25
DR	Drainage										
WR	Wetlands/ Retarding Basin									\$5,180,591	
	WR_01a At Leonard Street	Treatment area approx 0.17ha	1700	sqm	\$105	\$178,987	0%	100%	\$178,987	102.5884	\$1,744.71
	WR_01b	Retardation storage approx 1,730cbm	1730	cbm	\$53	\$91,073	0%	100%	\$91,073	102.5884	\$887.75
	WR_02a North of Gordon Street.	Treatment area approx 0.75ha. Typical profile as per DP fig 4	7500	sqm	\$105	\$789,647	0%	100%	\$789,647	102.5884	\$7,697.24
	WR_02b	Retardation storage approx 40,000cbm	40000	cbm	\$53	\$2,105,726	0%	100%	\$2,105,726	102.5884	\$20,525.97
	WR_03 North of Maryvale Recreation Reserve	Treatment area approx 0.80ha	8000	sqm	\$105	\$842,290	0%	100%	\$842,290	102.5884	\$8,210.39
	WR_04 East of Jason Street	Treatment area approx 0.52ha	5200	sqm	\$105	\$547,489	0%	100%	\$547,489	102.5884	\$5,336.75
		Retardation storage approx 6,600cbm	6600	cbm	\$53	\$347,445	0%	100%	\$347,445	102.5884	\$3,386.78
		Pipes (675mm dia. RCP) Inlet & Outlet to WR04	297	Lm	\$705	\$209,290	0%	100%	\$209,290	102.5884	\$2,040.09
		Pits (900x600mm)	7	Each	\$2,255	\$15,785	0%	100%	\$15,785	102.5884	\$153.87
		Headwalls (incl. Apron) at Inlet and Outlets	3	Each	\$10,501	\$31,503	0%	100%	\$31,503	102.5884	\$307.08
CH	Drainage Channels	See DP cross sections figs. 4 & 5									
	CH_01 Outfall channel - match to existing north of DP area.	Channel section A-A Refer PGA Typical Cross Sections Plan 14166-304. Assume match to existing 100m downstream. Cut volume 1,357m3.	1357	cbm	\$17	\$22,500	67%	33%	\$7,366.08	102.5884	\$71.80
	CH_02 South of Leonard Street to Wetland WR_01	Channel as per typical profile DP fig 5 - 43m wide reserve, approx 220Lm long	220	Lm	\$921	\$0	67%	33%	\$0.00	102.5884	\$0.00
	CH_03 Low Flow Conveyance Channel through Basin WR02. Inlet and Outlet from Wetland.	Channel Section E-E Low Flow Channel. Refer PGA Typical Cross Sections Plan 14166-304. 10m wide, 1m deep, 320m long.	1750	cbm	\$17	\$29,016	67%	33%	\$9,499.36	102.5884	\$92.60
	CH_04 Between Gordon Street and English Street (PGA Channel Section 2)	Channel section G-G Refer PGA Typical Cross Sections Plan 14166-304. Cut volume 18,520m3	18520	cbm	\$17	\$307,075	67%	33%	\$100,530.37	102.5884	\$979.94
	CH_05 East of English Street (PGA Channel Section 1)	Channel section H-H Refer PGA Typical Cross Sections Plan 14166-304. Cut volume 24,247m3. Fill volume 1,042m3	24247	cbm	\$17	\$402,032	67%	33%	\$131,617.71	102.5884	\$1,282.97
	CH_06 Along northern boundary of Maryvale Recreation Reserve	Channel as per typical profile DP fig 4 - 27m wide reserve, approx 395Lm long	395	Lm	\$921	\$363,854	67%	33%	\$119,118.96	102.5884	\$1,161.13
	CH_07 Transition from Latrobe Road culverts to future pipeline PI_01	Allowance for inlet structure to pipeline PI_01 and depressed collection area.	1	Each	\$65,804	\$65,804	67%	33%	\$21,542.93	102.5884	\$209.99
CV	Culverts under existing Roads										
	CV_01 At Gordon Street (Crossing No. 2)	1 No. 2400mm x 1200mm & 1 No. 1200mm x 1200mm box culverts, allow 25Lm	1	Each	\$797,260	\$797,260	67%	33%	\$261,007.68	102.5884	\$2,544.22
	CV_02 At English Street (Crossing No. 1)	5No. 2400mm x 1200mm box culverts, allow 20Lm	1	Each	\$941,900	\$941,900	67%	33%	\$308,360.09	102.5884	\$3,005.80
	CV_03 WR02 Outlet culvert and Weir Structure	6 No. 1050mm RCP allow 14Lm	1	Each	\$190,309	\$190,309	67%	33%	\$62,303.50	102.5884	\$607.32
PI	Pipes										
	PI_01 Between Latrobe Road and Gordon Street	To be developer funded as trade off for release of developable land along existing waterway				\$0	0%	100%	\$0	102.5884	\$0.00
OS	Public Open Space Improvements									\$4,400,300	
	OS_01 Unencumbered Open Space north of Gordon Street	Playground, BBQ facilities, formal paths, lawn and plantings	4850	sqm	\$79	\$382,979	0%	100%	\$382,979	109.1284	\$3,509.43
	OS_02 Unencumbered Open Space east of English Street	Playground, BBQ facilities, formal paths, lawn and plantings	7176	sqm	\$79	\$566,851	0%	100%	\$566,851	109.1284	\$5,192.52
	OS_03 Unencumbered Open Space east of Ashley Street	Playground, BBQ facilities, formal paths, lawn and plantings	4105	sqm	\$79	\$324,150	0%	100%	\$324,150	109.1284	\$2,970.36
	OS_04 Wetland WR_01 surrounds	Informal plantings, unsealed pedestrian path. Excludes development within wetland included in item WR_01. Approximate total open space area is 0.33ha.	1592	sqm	\$39	\$62,856	0%	100%	\$62,856	109.1284	\$575.98
	OS_05 Drainage channels CH_02 & CH_03 excluding pilot channel	Informal plantings, unsealed pedestrian path	9460	sqm	\$39	\$373,503	0%	100%	\$373,503	109.1284	\$3,422.60
	OS_06 Wetland WR_02 surrounds	Informal plantings, unsealed pedestrian path. Excludes development within wetland included in item WR_02. Approximate total open space area is 2.09ha.	13357	sqm	\$39	\$527,366	0%	100%	\$527,366	109.1284	\$4,832.53
	OS_07 Drainage channel CH_04 excluding pilot channel	Informal plantings, unsealed pedestrian path	9915	sqm	\$39	\$391,468	0%	100%	\$391,468	109.1284	\$3,587.22
	OS_08 Drainage channel CH_05 excluding pilot channel	Informal plantings, unsealed pedestrian path	6732	sqm	\$39	\$265,795	0%	100%	\$265,795	109.1284	\$2,435.62
	OS_09 Wetland WR_03 surrounds & Drainage channel CH_06 excluding pilot channel	Informal plantings, unsealed pedestrian path. Excludes development within wetland included in item WR_03. Approximate total open space area is 2.46ha.	16574	sqm	\$39	\$654,381	0%	100%	\$654,381	109.1284	\$5,996.43
	OS_10 Existing Open Channel	Informal plantings	2792	sqm	\$39	\$110,235	0%	100%	\$110,235	109.1284	\$1,010.14
	OS_11 Wetland WR_04 surrounds	Informal plantings, unsealed pedestrian path. Excludes development within wetland included in item WR_04. Approximate total open space area is 1.27ha.	4032	sqm	\$39	\$159,193	0%	100%	\$159,193	109.1284	\$1,458.77
	OS_12 Water Supply Reserve	Informal plantings, unsealed pedestrian path	14734	sqm	\$39	\$581,733	0%	100%	\$581,733	109.1284	\$5,330.72
Total Estimated Cost						\$15,997,954			\$13,899,551		\$130,979
Total Estimated Net Developable Area in DP is						109.13 ha					\$70,732.91
Estimated Contribution per Ha						\$127,368.78 per ha. (2018 dollars)					

- Notes**
- Developers to fund construction of roads to Major or Minor Access Street standard in accordance with Latrobe City Design Guidelines. DCP to fund upgrade above Major Access Street standard to Collector or Collector-Bus Route as defined on Development Plan.
  - Collector Road Bus Route cross section - assume 20.6m reserve, 11.6m cartage way including parking bays, kerb & channel, shared path one side, footpath one side.
  - Compensation for road widening greater than 18m width required for Major Access Street profile. Note that cadastral information indicates that the existing Gordon Street reservation width varies from 14.84m at Latrobe Road to 15.44m at English Street or thereabouts. Boundary
  - Road and Drainage infrastructure costs include 20% contingency allowance, 15% survey, design and project management, 3.25% Council plan checking & supervision fees.
  - Drainage Channels includes allowance for pilot channel rock work and aquatic planting.
  - Road and drainage costs exclude any allowance for clean out and backfilling of the existing drain associated with the re-alignment of the drain. Any filling to allotments required to achieve the necessary freeboard above 1 in 100 year flood levels is to be borne by developers.
  - The proposed drainage channels and road culverts will cater for an external catchment of 226ha and a Development Plan catchment of 100ha.
  - Costs exclude GST
  - 5 year review recommendations have been incorporated

Table 2: Morwell North-West DEVELOPER CONTRIBUTIONS SCHEDULE (2018)



Land Budget							POS Equalisation						Infrastructure Contribution	
Property No. (refer Figure 15)	Address	Total Site Area (approx ha.) (Note 1)	Unencumbered Open Space Area (approx ha.) (Note 2)	Encumbered Open Space Area (approx ha.) (Note 3)	Land already developed with permit & therefore excluded from NDA	Estimated Net Developable Area (Lots & Roads) (ha) (Note 6)	Equivalent Open Space (ha) (Note 4)	% Equivalent Open Space	% Required Total POS	% Open Space Credit/ Contribution (-ve)	Open Space Credit/ Contribution (-ve) (Ha)	Open Space Credit/ Contribution (-ve) (2014 \$ value) (Note 5)	(2018 dollars ex GST)	Adjusted for Open Space (ex GST)
1	180 Latrobe Road	2.23		0.49		1.74	0.10	4.40%	3.25%	1.15%	0.03	\$ 4,999.67	\$ 221,112.20	\$ 216,112.54
2	150 Latrobe Road	2.23		0.53		1.70	0.11	4.76%	3.25%	1.51%	0.03	\$ 6,556.11	\$ 216,017.45	\$ 209,461.34
3	140 Latrobe Road	2.63		0.85		1.78	0.17	6.46%	3.25%	3.22%	0.08	\$ 16,454.64	\$ 226,716.43	\$ 210,261.79
4	130 Latrobe Road	2.12		0.37		1.75	0.07	3.46%	3.25%	0.24%	0.01	\$ 993.87	\$ 223,022.73	\$ 222,028.86
5	122 Latrobe Road	0.48				0.48	0.00	0.00%	3.25%	-3.25%	-0.02	\$ 3,052.85	\$ 61,531.86	\$ 64,584.70
6	120 Latrobe Road	1.54				1.54	0.00	0.00%	3.25%	-3.25%	-0.05	\$ 9,731.69	\$ 196,147.92	\$ 205,879.62
7	100 Latrobe Road	2.02		0.28		1.74	0.06	2.77%	3.25%	-0.48%	-0.01	\$ 1,888.83	\$ 222,003.78	\$ 223,892.61
8	95 English Street	4.16		0.33		3.83	0.07	1.56%	3.25%	-1.66%	-0.07	\$ 13,422.31	\$ 487,312.95	\$ 500,735.26
9	75 English Street	4.17				4.17	0.00	0.00%	3.25%	-3.25%	-0.14	\$ 26,338.77	\$ 530,873.08	\$ 557,211.85
10	65 English Street	4.17		0.32		3.85	0.06	1.54%	3.25%	-1.71%	-0.07	\$ 13,887.25	\$ 490,115.07	\$ 504,002.32
11	55 English Street	4.17	0.21	0.88		3.08	0.39	9.28%	3.25%	6.01%	0.25	\$ 48,759.46	\$ 392,041.11	\$ 343,281.64
12	25 English Street	6.07		0.99		5.08	0.20	3.26%	3.25%	0.01%	0.00	\$ 163.85	\$ 647,033.40	\$ 646,869.56
13	15 English Street	4.60				4.60	0.00	0.00%	3.25%	-3.25%	-0.15	\$ 29,087.66	\$ 586,278.50	\$ 615,366.15
14	100 English Street	3.89	0.53			3.36	0.53	13.62%	3.25%	10.38%	0.40	\$ 78,532.14	\$ 427,959.10	\$ 349,426.96
15	80 English Street	3.89	0.19			3.70	0.19	4.88%	3.25%	1.64%	0.06	\$ 12,383.44	\$ 471,264.49	\$ 458,881.05
16	70 English Street	3.89				3.89	0.00	0.00%	3.25%	-3.25%	-0.13	\$ 24,582.01	\$ 495,464.56	\$ 520,046.56
17	40 English Street	3.90		1.01		2.89	0.20	5.18%	3.25%	1.93%	0.08	\$ 14,667.55	\$ 367,841.04	\$ 353,173.49
18	English Street	8.63				8.63	0.00	0.00%	3.25%	-3.25%	-0.28	\$ 54,522.77	\$ 1,068,637.84	\$ 1,153,460.60
19	23 Jason Street	2.89		0.50		2.39	0.10	3.48%	3.25%	0.23%	0.01	\$ 1,303.19	\$ 304,156.65	\$ 302,853.46
20	77 Ashley Street	4.05		0.50		3.55	0.10	2.47%	3.25%	-0.78%	-0.03	\$ 6,142.95	\$ 452,070.01	\$ 458,212.96
21	84 Ashley Street	16.34	0.41	1.47	2.40	12.06	1.15	7.01%	3.25%	3.76%	0.61	\$ 119,489.45	\$ 1,536,448.60	\$ 1,416,960.15
22	Maryvale Road	34.00		2.73		31.27	0.55	1.61%	3.25%	-1.64%	-0.56	\$ 108,628.57	\$ 3,982,821.76	\$ 4,091,450.33
23	Maryvale Road	2.06				2.06	0.00	0.00%	3.25%	-3.25%	-0.07	\$ 13,017.72	\$ 262,379.69	\$ 275,397.41
Total		124.12 ha	1.34 ha	11.25 ha		109.13 ha	4.03 ha	3.25%					\$ 13,899,551.21	\$ 13,899,551.21
Notes							6.38 ha							
1 Total site area for each property as defined in the Valuation Report prepared each year							NDA for drainage projects 102.5884						which includes removal of 8.01 ha for the Upper catchment north of WR04 catchment	
2 Unencumbered open spaces OS_01, OS_02 & OS_03 as defined on figure 3 of appendix														
3 Encumbered open spaces comprising drainage reserves and water supply reserve														
4 Encumbered drainage open space has been assigned a reduced land value equal to 20% or the value of unencumbered open space, in recognition of its visual and passive recreational amenity.														
5 The encumbered water supply reservation has been assigned a reduced land value equal to 50% of the value of unencumbered open space, in recognition of its visual and passive recreational amenity.														
6 Open Space credit/ contribution values at \$105,000 per equivalent hectare														
Net developable area excludes existing government road reservations , existing Josie Court subdivision, approved development near Maryvale Road, low density development in Jason Street & Palm Court and east of John Street.														

Development Contribution (2018 dollars) \$ 127,368.78 per ha.		Land Value (2018 dollars)		\$194,555	per ha	7187.462335
Applied to Net Developable Area						
Less	Total Development Plan Area	141.79 ha	Total Unencumbered Open Space		1.34 ha	
	Existing Roads	3.26 ha	Total Encumbered Drainage Open Space		8.52 ha	
	Approved Development	2.06 ha	Total Encumbered Water Supply Reserve		2.73 ha	
	Josie Place Subdivision	3.94 ha	Total Encumbered Open Space		11.25 ha	
	Areas of Limited Development Potential	10.42 ha	Total percentage equivalent Open Space		0.03 ha	
	Jason Court, Palm Grove & East of John Street				3.25%	
	Unencumbered Open Space	1.34 ha				
	Encumbered Open Space	11.25 ha				
	Total net Developable Area					
	(future allotments and roads)					
based on measurements from cadastral plans		109.52 ha				
Adopted Total Net Developable Area		109.13 ha				
(future allotments and roads)						
based on title area (refer Valuation report)						
Discrepancy between cadastral and title areas		0.39 ha				

Version: 2 (updated by Carol Lok 10 March 2014)  
Then updated by Lucy for NDA change, and \$ revised to 2018 by D Smith 9 Nov 2018

Table 3: Morwell North-West OPEN SPACE EQUALISATION SCHEDULE

