



June 2005

Final Report

Morwell Logistics Precinct Master Plan

Prepared for
Latrobe City Council

Prepared by
Beca Pty Ltd
with Meyrick and Associates
and Traffix Group



- report

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By
Beca Pty Ltd

ABN: 85 004 974 341

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Executive Summary

The “Project”

This report provides an overview and detailed planning guidance for the development of a site acquired by the Latrobe City Council in 2002 for the strategic purpose of developing an intermodal freight terminal at Morwell to service the Latrobe Valley and Gippsland region, specifically to increase freight volumes into and out of the region by rail.

The ‘site’ that is the subject of this planning exercise is located three kilometres east of the Morwell town centre, the Logistics Precinct (also known as the Evenden land) is approximately 70 hectares in area. The vast majority of the site is flat pastureland and is currently leased to a local farmer for grazing. The Gippsland Intermodal Freight Terminal (the GIFT) site is located in the northernmost portion of the site, adjacent to the main Gippsland railway. The GIFT site includes the rail siding which is strategically significant for future development of the Morwell Logistics Precinct.

Having acquired the subject site for strategic reasons, Council commissioned Beca, in association with Meyrick and Associates and Traffix Group to prepare a master plan and subdivision concept to outline how the Logistics Precinct might develop to maximise the potential of rail. Over the course of the project, strategic advice from Walker Corporation has also been sought by Beca in relation to development and feasibility issues.

The overall goal for the project is:

“To create a leading and best practice intermodal terminal and logistics precinct that actively promotes increased rail use while serving as a model for economic viability and sustainability.”

In achieving this aim and fulfilling the strategic potential of the Logistics Precinct, Council has a number of outcomes that it seeks from the precinct. These are set out in Text Box 1.

Text Box 1: Council Aims for the Morwell Logistics Precinct
<ul style="list-style-type: none">■ Councils goals for the Morwell Logistics Precinct are, simply put:<ul style="list-style-type: none">– to develop the site in a manner that maximises and increases freight being imported or exported on rail while recognising the importance of local and established road based logistics activities that will need to feed in and out of the site; and– facilitate a range of logistics activities onto the site that are currently known to be looking for a site/operation;
<ul style="list-style-type: none">■ Create a development that provides leadership within the Latrobe development community in terms of the standards and design outcomes achieved.
<ul style="list-style-type: none">■ Develop the Logistics Precinct as a key gateway to the region from a logistics perspective.
<ul style="list-style-type: none">■ Ensure development on the Logistics Precinct meets the tests of environmental sustainability through good design standards, including for stormwater management and landscaping.
<ul style="list-style-type: none">■ Ensure the precinct delivers additional employment opportunities, both through the development phase and once fully operational.
<ul style="list-style-type: none">■ Provide for the development of the precinct in a manner that balances the benefits and

Text Box 1: Council Aims for the Morwell Logistics Precinct

costs to the residents and ratepayers of the region, while recognising the strategic importance of developing the site for logistics and industrial activity.

One of the key tasks in developing the master plan and a development plan is to understand the nature of freight within the region, the specific technical issues that may affect the development of the Logistics Precinct, and any significant constraints. The master plan explores these issues in detail, but in summary suggests that within the Gippsland region, there are a number of sources of freight that could be captured through this precinct and moved on rail. The freight task around Victoria and Australia will increase significantly over the coming 20 years, and rail must play a significant part in that process. The importance of road transport must not be lost in this goal, as clearly an integrated logistics chain must involve road transport.

Development Issues and Constraints

With respect to the development of the Logistics Precinct, there are a number of issues outlined in the report, a number of which will require further investigation at the development phase to confirm assumptions made to date (including geotechnical conditions, presence or absence of site contamination, site contour survey, catchment stormwater attenuation requirements and so forth). There are some significant constraints on the development of the site from a traffic perspective, however design solutions to these issues have been suggested. Perhaps the greatest constraint is the High Voltage power easement that runs along the eastern boundary with Tramway Road, however, some opportunity to utilise land underneath these lines may exist, with agreement of the power company (SPI Powernet).

Development Principles

In order to progress the development of the Logistics Precinct, a number of detailed development principles have been identified. While these principles are neither weighted nor prioritised, they should be considered important benchmarks against which to measure future development concepts (including the option presented in this report).

Principles related to:

- Providing a freight focus for the future development of the site;
- Ensuring economic outcomes are achieved;
- Delivering a sustainable and leading built form, including environmental outcomes; and
- Achieving suitable land uses on the site.

Development Plan

The development principles have been used to identify a proposed development plan, although it should be recognised that this is for planning purposes only, and the concept will need to be adapted based on confirmation of future tenant requirements. Tenant requirements are not known at present and will be specific to each operator/tenant secured for the Logistics Precinct. Clearly this next phase of confirming the approach to developing

the site, including marketing and leasing, is critical to the overall success of the project. This master plan provides Council with the information required to progress that next stage.

The development plan identifies a potential for some 41 development sites, ranging in size from 5000m² (or half a hectare) to 114,000m² (or 11 hectares). The total area of the Logistics Precinct is approximately 70 hectares, of which approximately 56ha is proposed for development. An additional 5.8 hectares is set aside for roads, with the balance being parkland of 7.6 hectares. While the GIFT site is included in the discussion of much of this report, the site is not owned or controlled by Council, and therefore agreement with the sites owner is critical to enable access to the rail siding. The GIFT site is approximately 6.5ha in area, and includes the existing rail siding and a proposed extension to the siding.

Broad Development Costs

The general approach in preparing the cost estimates for the development of the site is to enable Council to understand the order of costs that may be associated with the site to get it to a fully developed state. This may also assist Council in identifying:

- The value of significant items of infrastructure or works that it may wish to provide funding for in order to provide a catalyst for the sites successful development;
- Determining an appropriate market value of the site, taking account of the development controls and constraints that will be placed on any future landowners to work towards the master plan for the site;
- Future risks for itself as landowner;
- Works that may be undertaken as part of its broader capital works budget;
- Opportunities for funding grants from State or Federal Government to support the project.

The estimates of probable costs contained in this report are based on broad conceptual information and are indicative only to be considered as part of the decision making process. They are likely to fall within an accuracy range of +/- 25-30% and should not be considered budgets for the work contained therein. Particular attention should be paid to the list of exclusions and assumptions at the end of the estimate included in Appendix C.

Table 1: Indicative cost estimates

Item	Cost (\$)
a. Work within site boundary	
Power	950,000
Water	700,000
Waste water	350,000
Telecommunication	
Gas	200,000
Stormwater Management and Drainage	1,600,000
Road and Access	11,100,000
b. Work outside Site Boundary	

Item	Cost (\$)
Power	30,000
Water	10,000
Wastewater (none)	
Telecommunication	
Gas	10,000
Stormwater Management and Drainage (none)	
Road and Access	1,050,000
c. Total	16,000,000

Governance and Development Approach

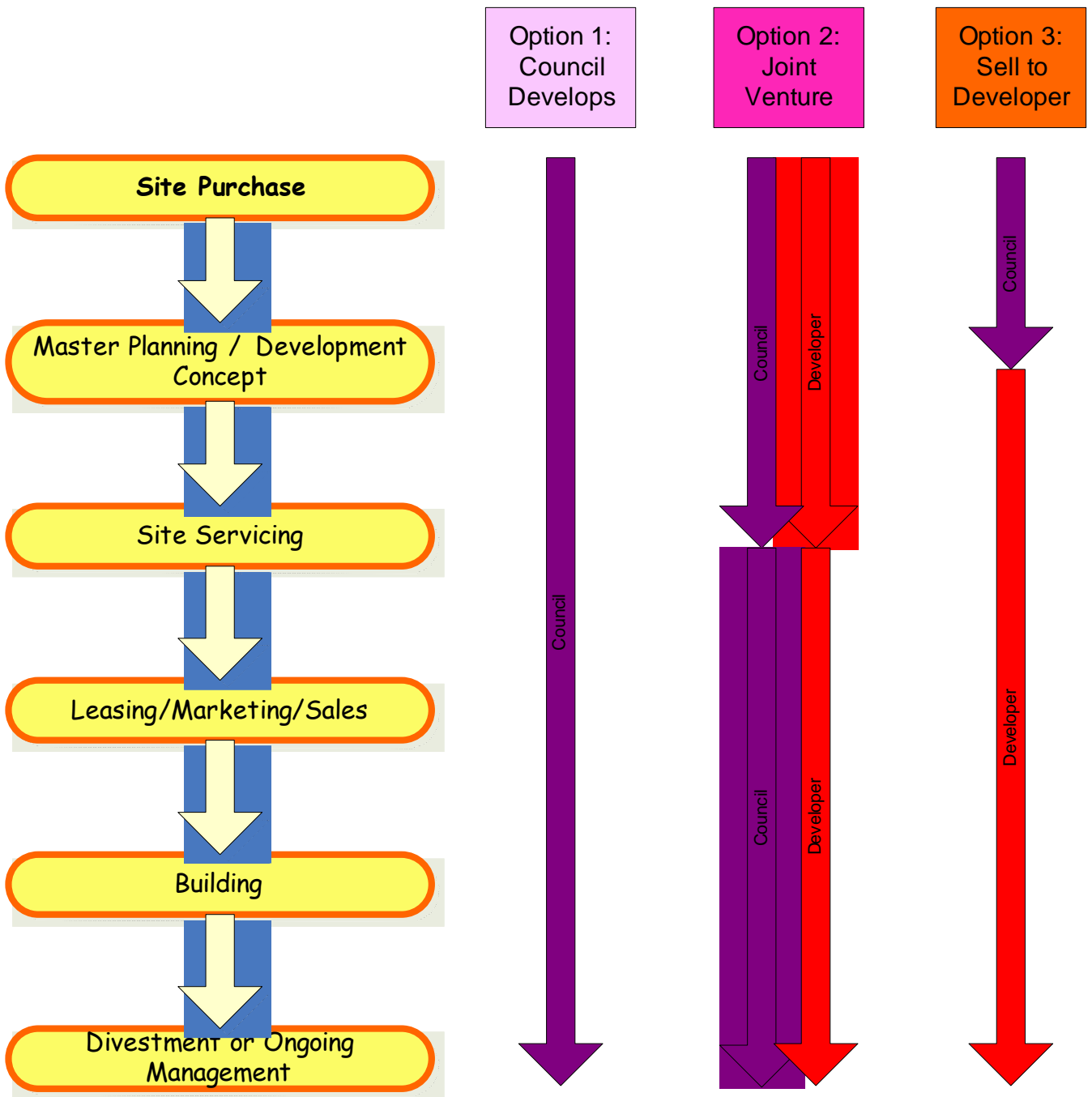
The final issues of significance to Council is the level of its involvement in the development into the future, beyond this current master planning phase. There are a number of governance and site ownership/management models available to the City and each has its drawbacks and advantages.

The City has noted at the early stages of the project that a range of options may be considered, provided these deal with Councils overall aims for the site and the project.

The governance of the facility is critical to its success. One of the key issues is the role of the Council in taking the project forward, and its long term role, if any, in the development process. Council has ambitions for this site to be the core of its freight and logistics distribution activities for the Latrobe Valley. It is strategically adjacent to the major transport networks of the region and the City is concerned to ensure the land use is consistent with this strategy.

The purchase and current ownership of the land by the City was justified on these grounds and it is considered important that the Master Plan examine options that are consistent with this outcome.

Governance arrangements for the land development are components of that consideration and a number of options are considered. It is worth considering the development process in this equation also, and in particular, at what point it is appropriate for Council to withdraw from this process. This is a matter for Council to determine as soon as practicable. The following diagram provides an illustration of the development process relative to the role of Council and a developer;



Revision History

Revision N°	Prepared By	Description	Date
A	Greg Pollock	DRAFT Master Plan Report for Council review and Comment	7/4/05
B	Greg Pollock	Final Master Plan Report	22 June

Disclaimer – Purpose of the Report

The purpose of this report is to provide advice to Council on the engineering and planning issues associated with the potential development of the Morwell Logistics Precinct Site. It should not be taken as legal advice. The report identifies potential tenant opportunities for the site, but these should not be considered as firm propositions. Council must make its own decisions in relation to its role in the development process, the risk it is willing to take, and the structure for best delivering the development. No recommendations are given in this report on how Council should proceed, other than relating to technical design and planning issues. Beca accepts no liability for advice provided in this report if used by anyone other than Council. Beca accepts no liability for advice provided in this report if taken out of context or not used for its intended purpose.

Document Acceptance

Action	Name	Signed	Date
Reviewed by	Trent Kneebush		22/6/05
Approved by	Greg Pollock		22/6/05
on behalf of	Beca Planning		

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2 Overview

This report provides an overview and detailed planning guidance for the development of a site acquired by the Latrobe City Council in 2002 for the strategic purpose of developing an intermodal freight terminal at Morwell to service the Latrobe Valley and Gippsland region, specifically to increase freight volumes into and out of the region by rail.

Located at the heart of the Latrobe Valley, the Morwell Logistics Precinct is a key strategic development site for the Latrobe City Council. Together with its significant primary resource base, electricity generation industry and complementary rural industries including forestry, the region is well placed to capitalise on its strategic location and resources, particularly given its relationship to major transport routes including the Gippsland to Melbourne rail corridor, the Princes Highway, and the Latrobe Regional Airport.

Rail transportation has a crucial role in this process through facilitating and promoting logistics activities to allow the effective and cost efficient transport of raw materials and manufactured goods to market. Therefore the proximity of rail freight infrastructure provides significant potential for the development of the Logistics Precinct.

The importance of efficient transport to the Latrobe region cannot be understated as the transport of freight to and from the industrial areas in the Latrobe Valley provides a measure of the success of local industry. Consequently, the growth in revenue of rail operations from increased freight, growth in the rating and employment base from new industry, and the general economic benefits of increased local employment are key drivers for the project. The availability of land which is appropriately zoned and serviced will also provide significant incentives for future industrial development.

The Latrobe Valley's access to Melbourne and through Melbourne to other areas within the State is very good. The Princes Highway, bordering the site to the south, travels through the Latrobe Valley and provides linkages between the main settlements of Moe, Morwell, Traralgon as well as to the Gippsland region and south eastern New South Wales. It serves major regional industries such as agriculture, paper manufacturing, coal mining, power generation and timber production, in addition to being a significant tourist traffic route.

The forthcoming opening of the Regional Fast Rail link between Melbourne's Flinders Street Station and Traralgon due to be completed by mid 2005 will provide a 95 minute journey linking the Latrobe Valley with the capital city. This fast rail initiative will provide increased economic development and employment opportunities for the Latrobe Valley through improved passenger access and connection to key regional locations such as Morwell, thereby attracting more people to live, work and invest in the region.

The recent work of the Latrobe Valley Ministerial Taskforce identified a range of strengths within the region that should be utilised in promoting and facilitating industrial development in particular. This reflects the wider strategic direction being taken by Council, in particular Invest Latrobe, in creating an attractive environment for potential investors.

As noted in Council's Municipal Strategic Statement, the Latrobe community recognises that it has an international future if it takes the right steps now to create the necessary linkages, networks and awareness of what the region can offer. These strategic actions should generate suitable interest and investment and, as a result, jobs for Latrobe. This approach is certainly relevant to the development of a new logistics precinct, of which employment growth is a primary aim.

2.1 Aims of the Master Plan

The 'site' (also referred to as the Logistics Precinct in this report) that is the subject of this planning exercise is located three kilometres east of the Morwell town centre. The Logistics Precinct is 69.43 hectares in area. The vast majority of the Logistics Precinct is currently used for grazing, (also known as the Evenden land). The Gippsland Intermodal Freight Terminal (the GIFT) site is located in the northernmost portion of the site, adjacent to the railway easement (*see Map 1*) and the GIFT site includes at its northern border the rail siding which is strategically significant for future development at the site.

Having acquired the subject site for strategic reasons, Council commissioned Beca, in association with Meyrick and Associates and Traffix Group to prepare a master plan and subdivision concept to outline how the site might develop to maximise the potential of rail.

The overall goal for the project is:

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<ul style="list-style-type: none"> ■ Ensure the precinct delivers additional employment opportunities, both through the development phase and once fully operational.
<ul style="list-style-type: none"> ■ Provide for the development of the precinct in a manner that balances the benefits and costs to the residents and ratepayers of the region, while recognising the strategic importance of developing the site for logistics and industrial activity.

This report sets out the key elements of the master plan, which assists Council as the property owner in reaching its stated goal and aims. The report provides relevant background as to the logistics sector generally, development issues associated with the site, confidential commentary on potential site users who have been interviewed in various ways over the course of the project. This leads to the 'master plan' which is comprised of the following:

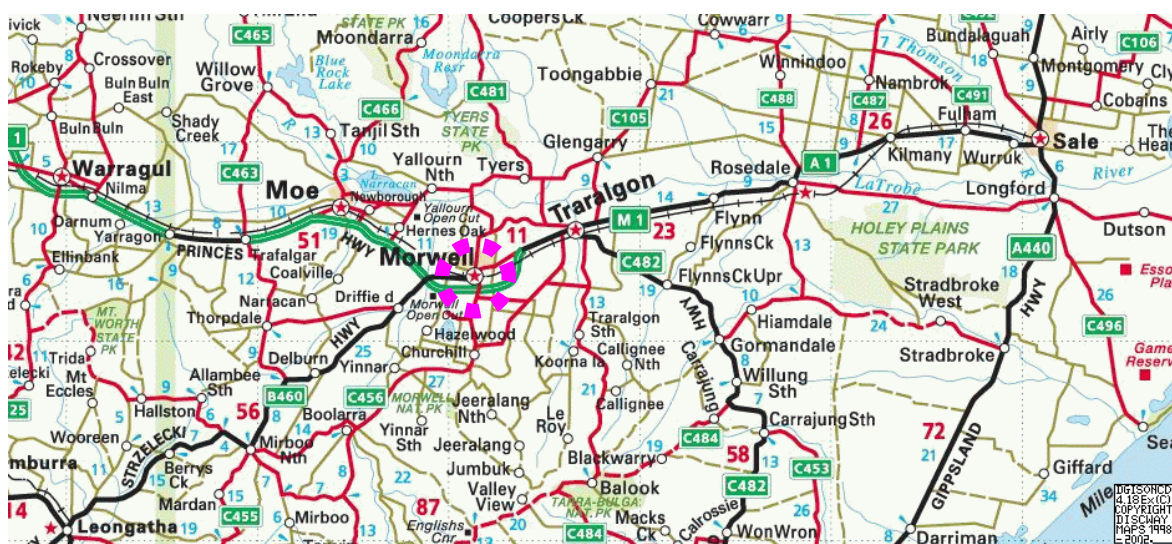
- **Master Plan**, which sets out the broad development principles and provides a broad plan of the key uses, access points, and improvements to the site and which also provides

sufficient flexibility to respond to future changes in demand that may affect the logistics industry;

- **Design Guidelines**, which articulate the outcomes sought for the site through the development process, and enable a flexible approach
- **Development Plan**, which provides one possible interpretation of the master plan and design principles, and provides a subdivision plan, associated works and indicative costs of development;
- **Precinct Governance**, which discusses options for the means of developing the site and ownership possibilities.
- **Recommendations** - the next stages and other actions that are required to take the master plan and preferred development plan into the next stage of implementation (marketing).

The following diagram identifies the general location of the site in the Melbourne-Gippsland corridor.

Figure 1: Site Setting



2.2 The Subject Site

2.2.1 Location and Site Description

The site is bounded to the north by the Gippsland Railway easement and associated facilities, to the east by Tramway Road, to the south by the Princes Highway and to the west by Monash Way.

It contains several water sources such as a dam and drainage infrastructure, Waterhole Creek, and a small number of isolated stands of vegetation. Local power lines run across the site, as well as the more visible high voltage overhead electricity transmission lines that intersect the eastern side of the property.

The property is located within the Parish of Maryvale on Crown Allotment 8E, Certificate of Title Volume 10347, Folio 912. The local government authority is the Latrobe City Council, who also own the site, having acquired it in 2002 in recognition of its strategic importance to

the future logistics activities of the region. *A copy of the Certificate of Title for the site is attached in Appendix A.* The following figures and photographs provide a snapshot of the site.

Figure 2: Oblique Aerial Photograph of the Morwell Logistics Precinct



2.2.2 Current Zoning

The entire site is located within the Industrial 1 Zone (IN1Z) under the Latrobe Planning Scheme. IN1Z provides for land uses such as industry and warehouse facility and sets out uses that do not require a permit, uses where a permit is required and prohibited uses within this zone. The purpose of the zone is:

- *To provide for manufacturing industry, the storage and distribution of goods and associated uses in a manner which does not affect the safety and amenity of local communities.*

This zone allows for various types of land uses that are grouped under the term “industrial”. Included in this zone as uses that do not require a permit are industry, shipping container storage and a warehouse facility. These uses do, however, have specific conditions that must be met to enable the use and development of the land and ensure any adverse environmental impacts are avoided. These conditions relate to a range of issues including neighbourhood amenity, appropriate setbacks and buffer areas, height restrictions, access to particular categories of roads, transport of goods, appearance of stored goods or materials and any possible emissions associated with the operation of the site.

A copy of the schedule to the zone is included later in Appendix B, along with a copy of the Zoning Maps for the site.

The Latrobe Planning Scheme does not apply any Overlays to the Logistics Precinct.

2.2.3 Surrounding activities

Surrounding land uses consist primarily of commercial and industrial developments which include a service station, car yards and a mix of bulky goods retailing. The exception to this is the residential parcel of land located directly to the north of the site, to the west of the Mid-Valley Shopping Centre. The Gippsland Railway line provides a buffer between the subject site and this residential precinct. Easily accessible from the Morwell Town centre, the subject site maintains a sufficient distance to mitigate any potential development impacts on the township, and in doing so reducing any direct land use conflicts.

Appropriate consideration must be given to the surrounding land uses and their zoning in the context of development of the subject site. A brief summary of these relevant zones and their purpose is provided below:

The northern boundary of the site which includes the GIFT site along the Gippsland Railway easement is zoned Public Use Zone (PUZ4), which has the following purpose:

- *To recognise public land use for public utility and community services and facilities.*
- *To provide for associated uses that are consistent with the intent of the public land reservation or purpose.*

Directly to the north of the Gippsland Railway easement is an area zoned Residential 1 Zone (R1Z), which is considered to be a sensitive use when planning for the development of an industrial site. The purpose of the R1Z is:

- *To provide for residential development at a range of densities with a variety of dwellings to meet the housing needs of all households.*
- *To encourage residential development that respects the neighbourhood character.*
- *In appropriate locations, to allow educational, recreational, religious, community and a limited range of other non-residential uses to serve local community needs.*

Also, directly to the north of the Gippsland Railway easement and adjacent to the R1Z is an area zoned Business 1 Zone (B1Z), and Business 4 Zone (B4Z), which need to be considered for compatible uses. The purpose of the B1Z is:

- *To encourage the intensive development of business centres for retailing and other complementary commercial, entertainment and community uses.*

The purpose of the B4Z is:

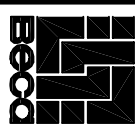
- *To encourage the development of a mix of bulky goods retailing and manufacturing industry and their associated business services.*

Roads surrounding the site, including Monash Way, the Princes Highway and Tramway Road, are all shown on the planning scheme map as Road Zone (RDZ1) for a Category 1 road. The purpose of this zone is:

- *To identify significant existing roads.*
- *To identify land which has been acquired for a significant proposed road.*

To the south east of the site, on the south of the RDZ1 a parcel of land is shown on the planning scheme as SUZ5, Special Use Zone for the Morwell River Diversion, the purpose of which is:

- *To ensure that adequate spatial separation is provided between works associated with the proposed river diversion and associated works and any existing or proposed use and development, so as to reduce the likely effects of the emission of noise, visual intrusion, waste discharge, movement of earth and dust.*



1:5000
0 50 100 150 200 250m

Figure 3
Site and Surrounds

Figure 4: Site Photographs

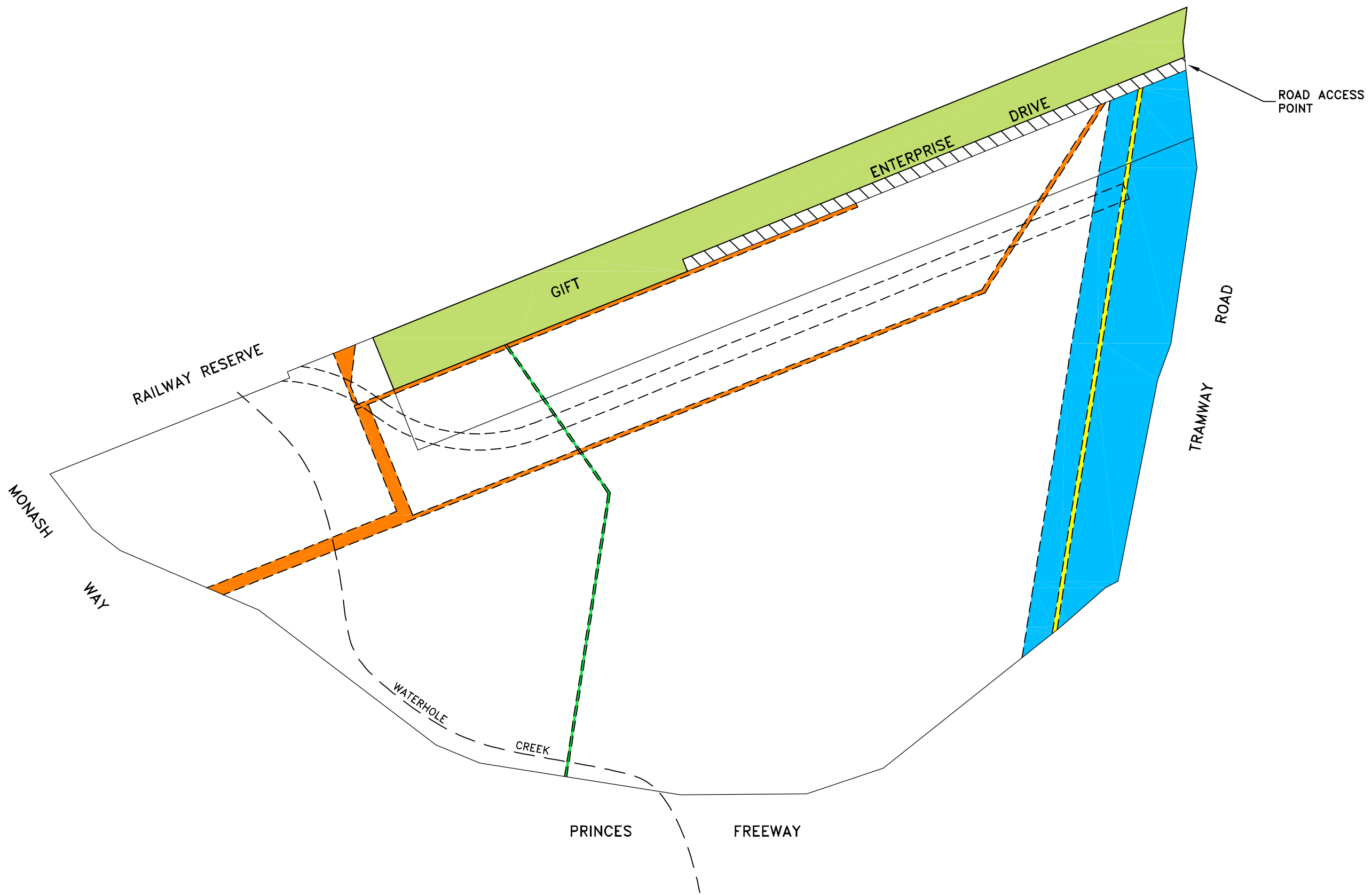


2.2.4 Easements and Restrictions

The site has a number of encumbering easements for various infrastructure assets that impose restrictions on the future use and development of the land and must be considered in future planning for the site. These include:

- E - 1, E - 3, E - 5, E - 9 and E - 10 for the purpose of Railway assets;
- E - 2, E - 3, and E - 6 for the purposes of water pipeline and ancillary functions under the authority of the Central Gippsland Region Water Authority;
- E - 4, E - 5 and E - 6 for the purposes of power lines under the authority of TXU Electricity;
- E - 7, E - 8, E - 9 and E - 10 for the purposes of transmission of electricity under the authority of the SPI Powernet Pty Ltd; and
- E - 8 and E -10 for the purpose of a pipeline under the authority of Loy Yang Power.

These easements are shown on the following map. There do not appear to be any restrictive covenants on the use of the site.



DRAFT FOR COMMENT
- 7/4/2005



LEGEND:

- | | | | | | |
|---|----------------------------------|---|----------------------------|---|--------------------------|
|  | SPI POWERNET EASEMENT |  | GIPPSLAND WATER EASEMENT |  | TXU ELECTRICITY EASEMENT |
|  | LOY YANG POWER PIPELINE EASEMENT |  | GIPPSLAND RAILWAY EASEMENT |  | ROAD EASEMENT |

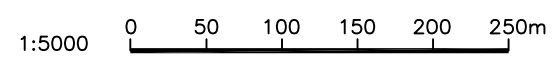


Figure 5
Easements

3 Logistics Activity and Market

One of the first considerations for an intermodal terminal at Morwell is the nature of the market, the general logistics activity and the potential benefits that may flow from the development of the facility.

Intermodal terminals play a central role in the development of integrated logistics solutions and consequently in reducing supply chain costs, both directly through lower freight charges and indirectly through the influence of more sophisticated logistics in lowering inventory costs. Internationally, the crucial role that supply chain improvements play in enhancing productivity has been widely recognised:

*"Secretary of the US Federal Reserve Bank Mr Alan Greenspan observed that this revolution in low inventory, supply chain logistics has been a major element in the recent increase in productivity in the US economy"*¹

Moreover, the impact of these productivity improvements on national economic performance and competitiveness can be profound: a review of Freight Transportation Security and Productivity found that:

Lean inventories have contributed to business productivity. From 1980 to 2000, according to one study, business logistics costs dropped from 16.1% of U.S. GDP to 10.1%.²

3.1 Intermodal Industry structure

The intermodal sector is comprised of a range of companies from historically distinct industries that have moved from their original business operations, which were modally or functionally specific, into the provision of intermodal services.

Their reasons for making this move are diverse: in many cases, the desire to build economies of scale and/or scope was dominant; in others, the primary motive appears to have been to create the opportunity to provide a differentiated product and thereby improve margins.

It is possible to distinguish three distinct groupings of intermodal operators:

- Integrated providers who can offer a range of supply chain management and other value adding services;
- Transport and terminal operators; and
- Specialist, often bulk commodity, terminals.

Each of these groups are discussed below in broad terms:

3.1.1 Integrated Operators

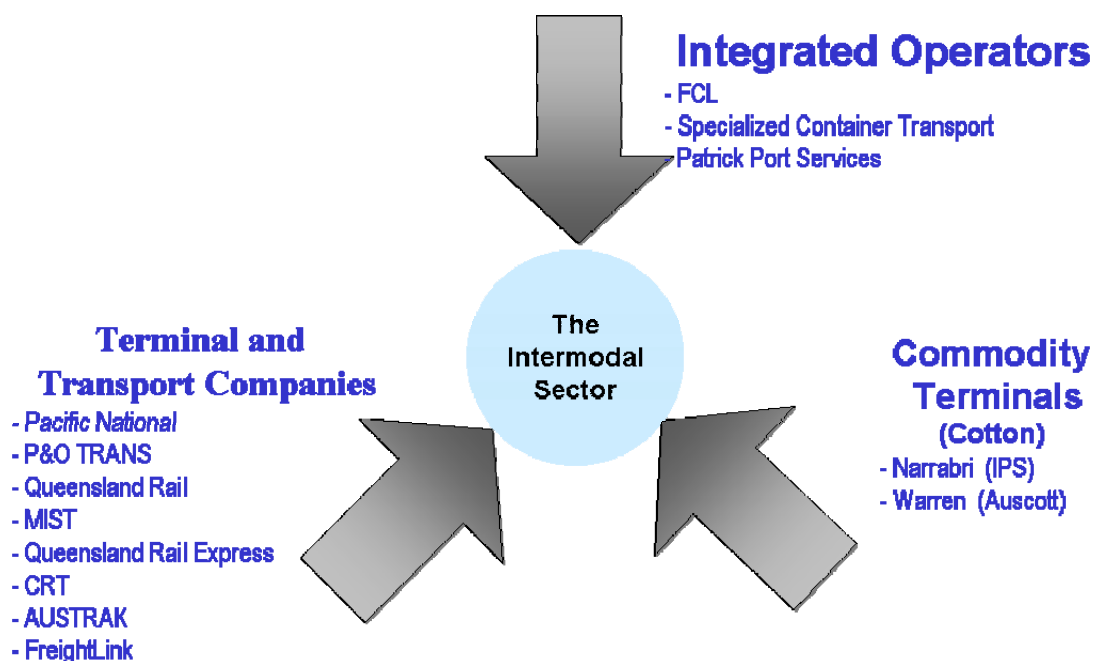
Integrated operators offer a wider range of services beyond the storage and movement of freight. These services include:

¹ Alan Greenspan, "Testimony of Chairman Greenspan Before Committee on Banking and Financial Services, US House of Representatives: <http://www.federalreserve.gov/boarddocs/hh/1999/July>

² Michael Wolfe, North River Consulting Group, *Freight Transportation Security and Productivity*, report prepared for U.S. DOT, EU/US Forum on Intermodal Freight Transport, Apr. 11-13, 2001.

- Freight consolidation;
- Warehousing, bonded, cross docking, cold chain management;
- Inventory management, parts distribution;
- AQIS inspection;
- Customs clearance;
- Management of subsequent distribution including sub-contractors and door-to-door fulfilment.

Figure 6: Major Groupings In The Intermodal Sector



Australia’s major integrated intermodal operators are FCL, Patrick Port Services and Specialised Container Transport (SCT).

The largest integrated intermodal company in Australia is FCL, which handles over 100,000 Twenty foot Equivalent Units (TEU’s) p.a. FCL has a major intermodal hub at Parkes in NSW. Parkes was chosen as the location for FCL’s key hub because of its location on both the North/South and East/West rail and road corridors; and because from Parkes it is possible to reach all of the largest domestic markets and the largest international ports in less than 24 hours.

Patrick has integrated its intermodal services into its Port Services Group. Important intermodal services include a Melbourne-Adelaide rail service for international containers and management of the SPC Ardmona export chain from Shepparton to the Port of Melbourne by rail. The importance of the intermodal operations to Patrick should not be understated, as they provide approximately 60,000 TEU pa (over 10%) of the stevedoring task at Patrick’s East Swanson Dock.

SCT, which operates primarily on the East- West corridor, provides a range of additional services. It carries out inventory management, packing, temperature control, and transport sub-contractors door-to-door. SCT operates 2-3 trains per week, moving containerised freight, carrying a total volume estimated at between 15,000 and 23,000 TEU p.a.

This is a demonstration of a 'single user site' being developed for freight owning clients, who in the main bring "Less than Container Load" (LCL - i.e. not a full container) to the rail site for consolidation in warehouses for loading either into containers or rail wagons for rail cartage. The process may also involve cross docking and product mixing and assembly as part of a value adding process. A similar possibility was floated for the GIFT siding for paper and dairy products at various times.

3.1.2 Rail and Terminal Operators

The majority of the operators in the intermodal sector are transport or terminal operators. In these operations, freight is moved and stored as required rather than having additional value adding operations undertaken on it.

The largest rail and terminal operator is Pacific National, which is jointly owned by Toll and Patrick and has train and terminal operations on the major intermodal corridors. In addition to operating its own trains and terminals, Pacific National provides hook and pull services for a number of its forwarder competitors.

P&O Transport has on dock rail terminals in Melbourne, Sydney and Fremantle. These sites' future capacity are currently under review by P&O and in the case of Melbourne a new terminal will have to be developed in the next 10 years if Swanson Dock is to be extended to cope with the expected increase in vessel lengths.

The Toll subsidiary Queensland Rail Express (QRX) has the dominant position network on the narrow gauge network in Queensland with over 130,000 TEU handled between Brisbane and Cairns each year. Its direct competitor is Queensland Rail, which is seeking to improve its intermodal network. Queensland Rail has a deliberate and aggressive policy of competing in Victoria and NSW. QR would need to seek and gain access rights to operate on the Broad gauge line and in principle that is possible.

3.1.3 Specialist Agricultural Commodity Terminals

There are a number of commodities that are consolidated at inland terminals and then exported in containers, such as rice from the Riverina which is shipped through Melbourne. Cotton from NSW is containerised then railed to Sydney and some grain is also containerised.

Recent consolidation in the cotton shipping industry suggests that both Warren and Narrabri could become major export warehouses in the future. There is also growth in woodchip exports and the exports of softwood logs. Morwell has potential for construction sand transport to Melbourne and possibly Geelong. There is about 40,000 tonnes of fertiliser sourced in Geelong for the Latrobe valley and log transport from the East to Maryvale is an increasing and regular traffic.

3.2 Linkages with other parts of the transport chain

The terminal itself is just one part of the overall transport chain. The intermodal chain is complex, with at least the following players involved in the provision of an end-to-end service:

- The shipper
- The receiver
- The forwarder
- The shipping line

- The container lessor
- The port owner/operator
- The stevedore
- AQIS
- ACS
- The road haulier
- The rail operator
- The inland terminal operator.

For any particular movement of freight there may be other parties involved, in the provision of equipment or services on a sub-contract basis.

Road vehicles, wagons and locomotives, accompanying documentation, customs clearances, quarantine certifications, consignors' and consignees' instructions and the on-terminal availability and scheduling of staff and handling equipment must all be orchestrated to ensure a smooth throughput of freight. The problems associated with this coordination are compounded by variations in traffic levels by day of the week and month of the year.

The intermodal terminal is often regarded by transport practitioners as the weakest link in that chain. This is usually because it is the location where cargo damage is most likely to occur and where lack of planning will expose weaknesses in inter-company communications and scheduling coordination. The intermodal terminal is where the commercial and operational needs of many parties to an individual cargo movement come together.

The successful planning, design and operation of an intermodal terminal therefore hinges on providing the right mix of resources with sufficient flexibility to absorb changes in traffic levels and unexpected disruptions to service. Unfortunately, terminal capital and operating costs contain a large proportion of fixed costs related to fixed infrastructure, such as concrete aprons, rail tracks and handling equipment. Adjusting the capacity of a terminal after its construction therefore often involves a significant step-change in costs and disruption to services. Efficient provision of intermodal terminal capacity therefore requires that the expected throughput at the terminal is carefully considered and that this throughput is matched by the capacity (or planned capacity) of the supporting transport network that feeds it.

The successful operation of the GIFT and associated Logistics Precinct will be no different. Therefore, recommendations on the nature of management arrangements for the terminal will be made later in this report.

3.2.1 The main general freight terminals

An inventory of Australia's main facilities and their owners is shown at Table 2.

Table 2: Intermodal Terminals (Above 10,000 TEU): Preliminary Inventory

State	Terminal Site	Operators	Comments
NSW Metro	Camellia	Patrick (formerly Seatons)	Used by cargoes for Toll Newcastle as well
	Chullora	Pacific National	
	Clyde	Collex	
	Minto	Macarthur Intermodal Shipping Terminal	Austrack also use this terminal
	Port Botany - Sydney Haulage	Sydney Haulage Containers	
	Port Botany - Smith Bros	Smith Bros Terminal Pty Ltd	
	Port Botany (1,2 & 3 Brotherson Dock)	Patrick Port Services	
	Port Botany (4,5 & 6 Brotherson Dock)	CTAL (P&O Trans)	
	St Peters (Cooks River Rail Terminal)	FCL Interstate Transport Services Pty Ltd	
	St Peters (Cooks River Rail Terminal)	Maritime Container Services (MCS)	
	Villawood	Mannway	Often used in conjunction with Mannway Newcastle
	Yennora - Packtainers	Packtainers Pty Ltd	
	NSW Regional	Blayney - FCL	FCL Interstate Transport Services Pty Ltd
Dubbo		Inland Container Terminals	
Newcastle - Mannway		Mannway	BHP Morandoo site
Newcastle - Toll SPD		Toll SPD Newcastle	Carrington site
Parkes - ParkesHub		FCL Interstate Transport Services Pty Ltd	Subject to takeover by Patrick
Wagga Wagga		Pacific National	
Victoria Metro	Altona North	CRT	Also used by Queensland Rail and Linfox
	Altona North	Specialised Container Transport	
	Dynon South	Pacific National	
	Dynon North	Pacific National	
	East Swanson	Patrick Port Services	Track is being duplicated now, open Jun 05
	Somerton	Austrak	
West Swanson	P&O TRANS	May be moved, part of Melbourne P@rtal	
Victoria Regional	Morwell	AMCOR	Paper to Dynon for domestic and export

State	Terminal Site	Operators	Comments
	Shepparton	Patrick Port Services	Carrying Export TEU for SPC Ardmona
SA Metro	Islington	Pacific National	
WA Metro	Kewdale	Pacific National	
	Port of Fremantle - North Quay	Fremantle Port Authority	
QLD Metro	Acacia Ridge	Pacific National and Queensland Rail	QR operates on narrow gauge network PACNAT on interstate network
	Brisbane Multimodal Terminal	Port of Brisbane Corporation	Fisherman Island facility -Common User
	Moolabin	Queensland Rail Express	Brisbane Terminal for QRX
QLD Regional	Bundaberg	Queensland Rail	
	Cairns	Queensland Rail Express	
	Townsville	Queensland Rail Express	
	Mt Isa	Queensland Rail	
	Rockhampton	Queensland Rail Express	
Tasmania	Brighton	Pacific National Tasmania	Connects with Toll Shipping in Burnie
	Burnie	Pacific National Tasmania	
Northern Territory	Darwin	FreightLink	Darwin Port - East Arm

3.2.2 Future Intermodal Developments

Table 2 shows known or probable intermodal terminal developments in the short to medium term. The table does not include comments on expansion at existing intermodal sites. It is assumed that existing sites will grow with increasing freight volumes, either through expansion of current sites, or increased terminal productivity³ where further land expansion is not an option.

³ Terminal Productivity is a key issue in determining the size of an intermodal terminal. Whilst train length is usually the key driver of terminal length, the productivity level of the container handling systems is critical in setting how much land will be required to store containers. Patrick has indicated that they believe that it is possible to double or treble current port terminals productivity levels through the use of better technology.

**Table 3: Proposed or Possible Intermodal Terminal (Above 10,000 TEU):
Preliminary List**

State	Terminal Site	Operators	Comments
NSW	Port Kembla	Common User Terminal	Rail spur being shifted, depends on what trade is attracted
	Enfield	Sydney Port Corporation	SPC is seeking to have approval placed under consideration again
	Ingleburn	Patrick	Rejected initially by State government, under review again
	Newcastle Multi Modal Terminal	Common User Terminal	Depends on who is selected as the terminal operator
	Narrabri	Inland Packing & Storage Pty Ltd	If greater consolidation in cotton shippers takes place
VIC	Dandenong	Toll	Old Heinz site, following closure of Freight Australia intermodal facility in Dandenong
	Dandenong	Greenfield Site	Greens Road site under DOI VIC study
	Port of Melbourne - Port@l	TBC	Major redesign of Dynon precinct, likely new terminals
	Port of Melbourne - Webb Dock	TBC	Long term prospect, depends on success of Melbourne Port@l
	Morwell	Pacific National	Gippsland Inter-modal Freight Terminal,
QLD	Mackay	Queensland Rail Express	Being built now by QRX
SA	Pimba/Port Augusta	Greenfields IT mooted	Related to expansion of WMC Olympic Dam

3.3 Latrobe industry outlook

3.3.1 Timber, Paper & Pulp

a. Paper and Pulp Production

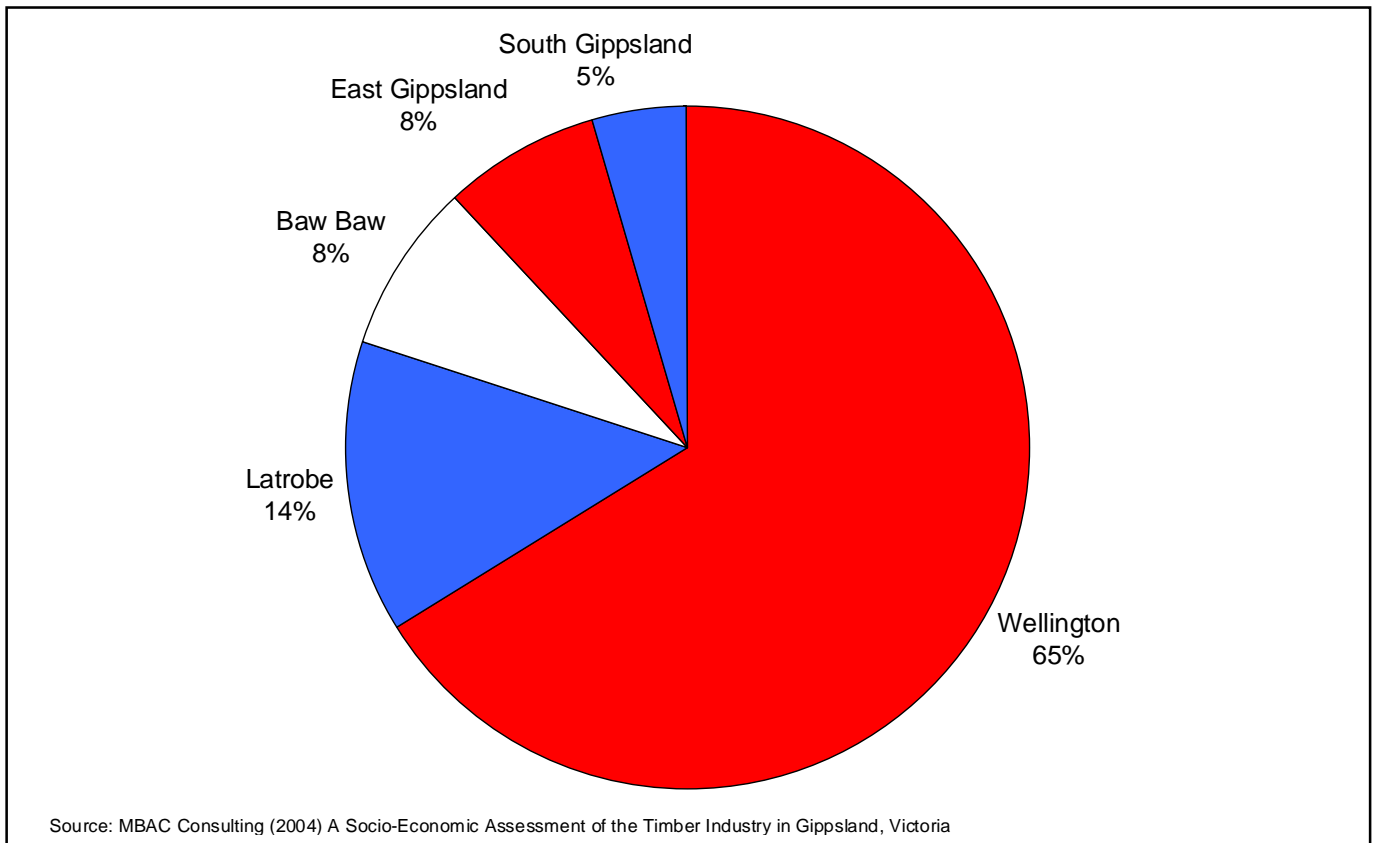
Industry-wide, the outlook is that expansion will occur in selected segments⁴. For instance, there has been an increase in paper and pulp production at Maryvale and prospects for expansion are strong.

⁴ Parts of the following industry information are from the *Gippsland Transport Strategy*, prepared by Meyrick and Associates for the Gippsland Local Government Network & South East Australian Transport Strategy Incorporated, Feb. 2005

b. Softwood Timber

Softwood timber resources are centred around Traralgon and the major softwood processing facilities are at Morwell, Maryvale and Yarram. Figure 7 below shows that Latrobe contains the second largest area of Gippsland’s 60,000 hectares of softwood plantations.

Figure 7: Distribution Of Gippsland Softwood Plantations By LGA

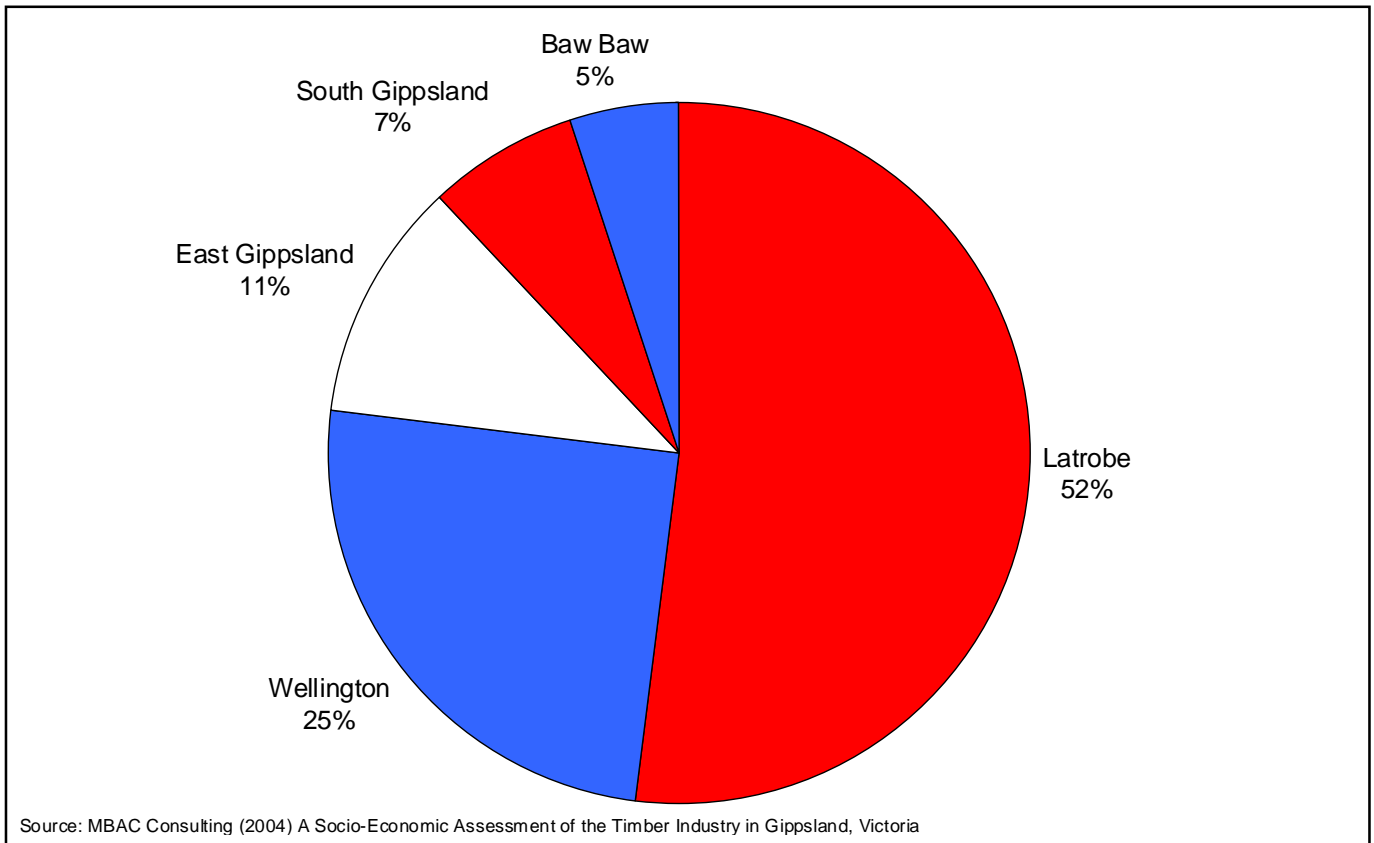


c. Hardwood Timer

There is also a concentration of hardwood plantations in the Latrobe and Wellington LGAs; this distribution is shown in the following figure. Hardwood plantations in these regions are owned by Grand Ridge Plantations, whilst South East Fibre Exports is the dominant owner in the East Gippsland.

Current Gippsland hardwood production is expected to rise at least in the short term. Local production activities include pallet manufacture, kraft pulp and white paper production, sawn timber and landscape products.

Figure 8: Gippsland Hardwood Plantations By LGA



d. Harvestable public native forest

Harvestable public native forest in Gippsland is predominantly contained in East Gippsland with approximately 300,000 ha. The remainder of Gippsland contains close to 100,000 ha. Managed by VicForests, a state-owned statutory company, the mainly hardwood product is predominantly moved to the mills at Heyfield, Bairnsdale and Orbost or sent to Eden for export.

The current harvest has been estimated at 1.34 million m³ per annum with 54% of this cut being sawlogs⁵. Approximately 10% of this harvest is exported through the Port of Geelong and 7.5% is sold to mills outside of the Gippsland area in Lara and Ballarat. Local processing of softwood includes the production of kraft pulp, packing paper, pallet manufacture and treated timber processing.

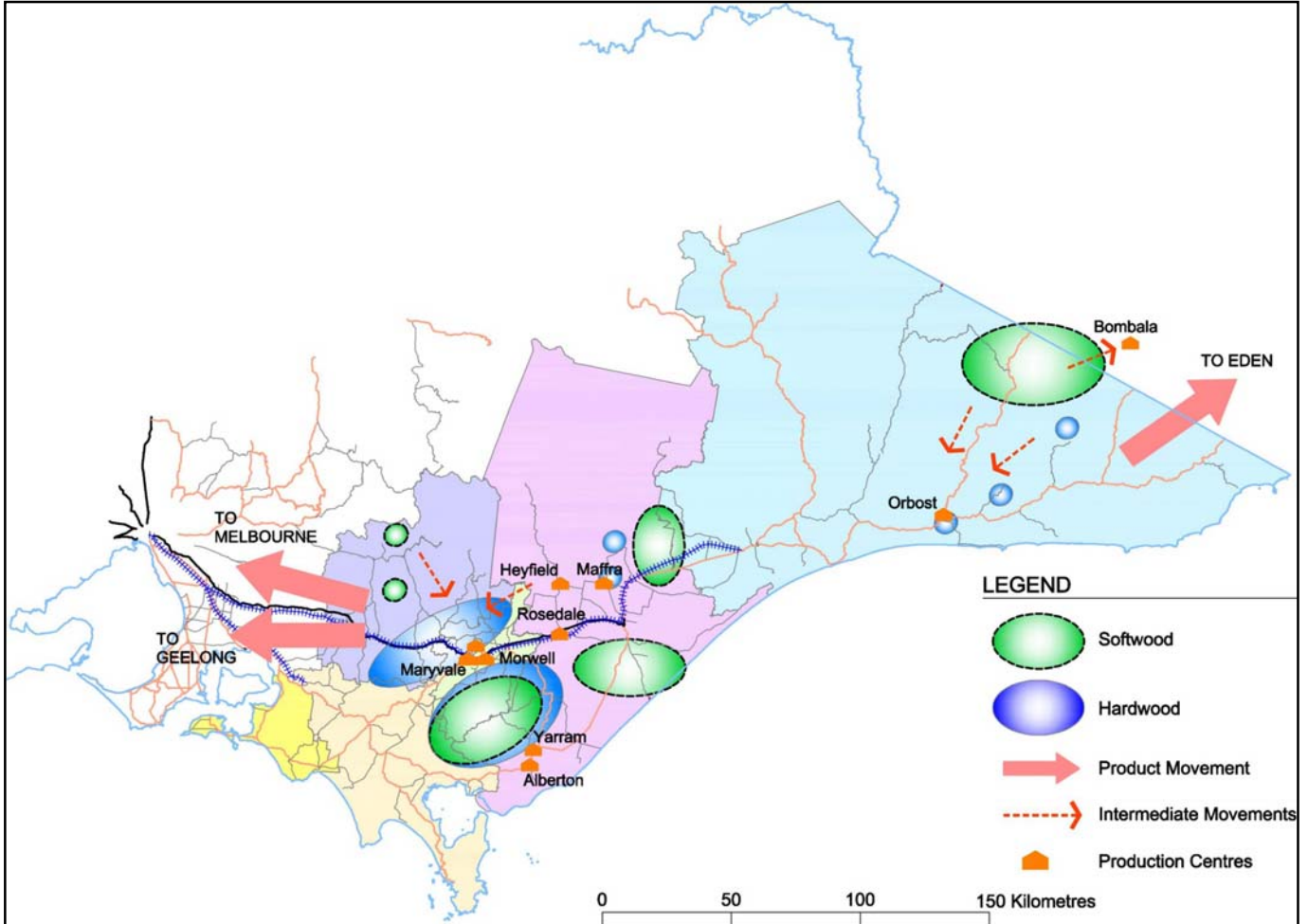
e. Logistics

Timber is carted from forest and plantations on B Doubles and mini B-Doubles in east Gippsland, and tri-axle semis and quad dogs in west Gippsland. The trip usually begins on private or semi-private roads before entering the Gippsland road network. There is no opportunity for backhaul.

⁵ MBAC Consulting (2004) A Socio-Economic Assessment of the Timber Industry in Gippsland, Victoria p. 21.

Figure 9 outlines the distribution of timber resources and activity centres of importance to the Gippsland region.

Figure 9: Gippsland timber industry movements



The main mills and production facilities are outlined in the table below.

Table 4: Gippsland timber industry production facilities

Location	Production Facility	Shire/City
Maryvale	Australian Pulp and Paper Mill	Latrobe
Eden	Export Facilities	Out of jurisdiction
Bombala	Processing Facility	Out of jurisdiction
Geelong	Export Facilities	Out of jurisdiction
Alberton	Alberton Timber and Treatment Plant	Wellington
Heyfield	Heyfield Timber	Wellington
Heyfield	Neville Smith Timber	Wellington
Maffra	Thompson Treated Timber	Wellington
Rosedale	Stone Timber	Wellington
Yarram	Radcon Radial Timber	Wellington
Yarram	N F McDonnell and Sons	Wellington
Morwell	Carter Holt Harvey	Latrobe
Morwell	Drouin West Timber	Latrobe

f. Future Outlook

Industry projections indicate that the timber and associated industries will maintain their importance to the Gippsland regional economy. For example, there are mooted plans for expansion of blue gum species in the region of southern Gippsland with two separate timber companies recently investigating opportunities.

There will continue to be a challenge to infrastructure arising from changing transport movements between native forests and plantations and production and distribution points as the region's forests mature at different times and places. Movement of timber from site to production centre will continue to be a significant issue for the region.

3.3.2 Dairying

Gippsland produces 19% of Australia's milk,⁶ valued at \$582 million in 2002-03⁷. The main production facilities are mapped in Figure 9 and detailed in Table 5: Gippsland Dairy Production Centres. While Morwell is the production centre for National Foods, most of the dairying activity centres around South Gippsland.

Figure 11 indicates that Gippsland also has greatest number of milk cattle of any dairying region in Victoria, or almost one third of the total Victorian herd.

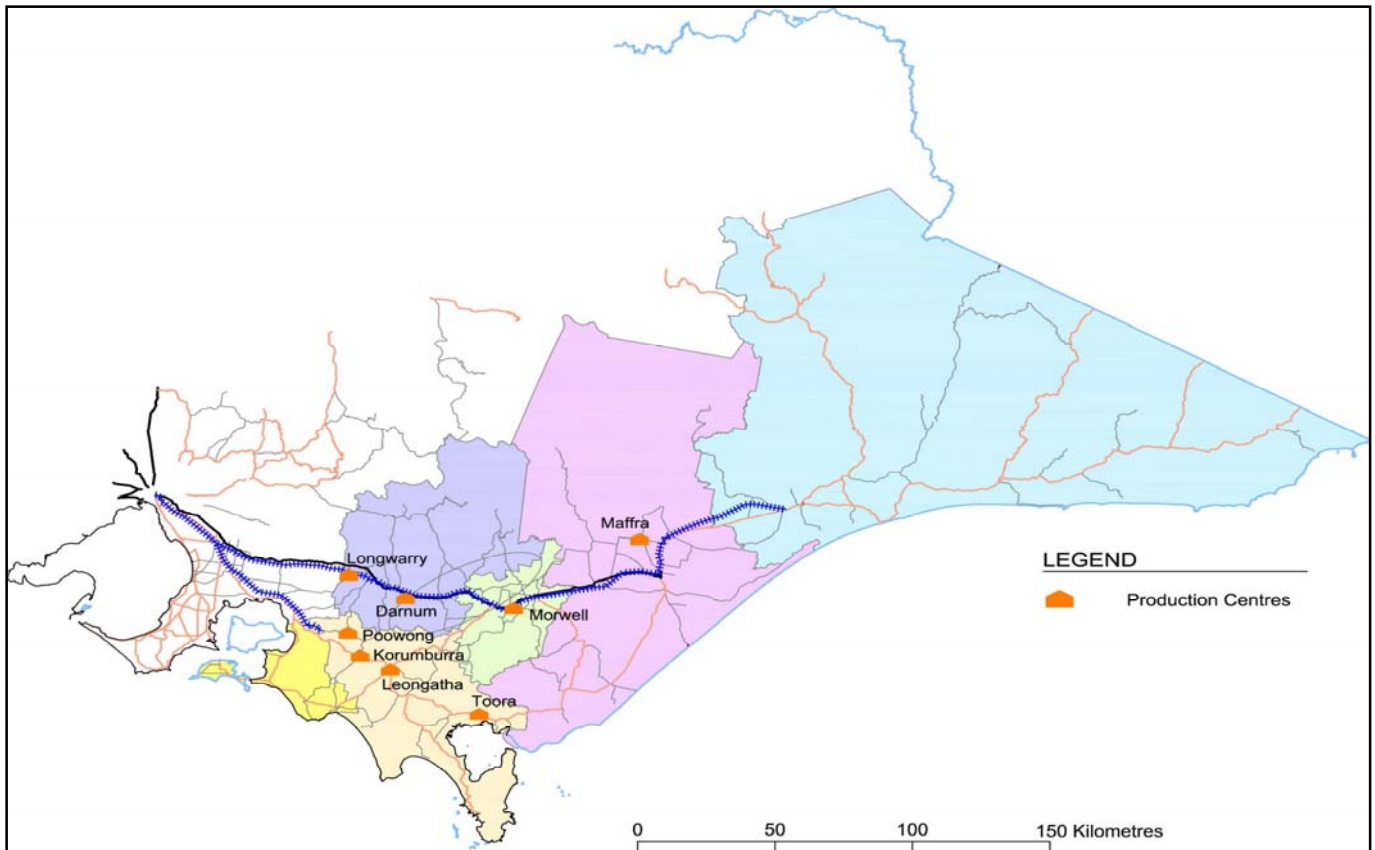
Table 5: Gippsland Dairy Production Centres

Location	Organisation	Shire/City
Morwell	National Foods*	Latrobe
Darnum	Bonlac*	Baw Baw
Toora	Bonlac	South Gippsland
Korumburra	Burra Foods	South Gippsland
Leongatha	Murray Goulburn Cooperative Ltd*	South Gippsland
Maffra	Murray Goulburn Cooperative Ltd*	Wellington
Poowong	United Dairy Power	South Gippsland
*Major Employer with greater than 200 employees		

⁶ DoTaRS (May 2003) *A Regional Profile: Gippsland Region Victoria*, p. 63

⁷ <http://gippsland.com/AboutUs/AboutGippsland.asp>

Figure 10: Gippsland's main dairy centres



a. Logistics

Milk is sourced from across Gippsland and transported to production facilities in milk tankers. Product is then transported on heavy vehicles such as B-Doubles either to other facilities outside the region or the Port of Melbourne for export.

b. Future Outlook

Australian Bureau of Agriculture and Resource Economics' short term outlook for the dairy industry – of which Gippsland dairy is a major contributor – is positive in value, volume and world price for exports. Milk yield per cow and total milk produced are also forecast to rise in the 2004-05 financial year from the previous years estimates by 2.7% and 3.3% respectively.

The long term growth of the dairy industry, particularly in Gippsland, is strongly dependent on expanding export markets. Current forecasts for the export markets, particularly Asia and the Middle East, are favourable.⁸

3.3.3 Beef and Lamb Production

In the Agricultural sector, beef and lamb production is also a major Gippsland industry. Within Latrobe there are 2 major export abattoirs with a throughput of 260,000 cattle annually. A major domestic abattoir has recently been re-opened in Moe with the facilities

⁸ <http://www.abare.gov.au/australiancommodities/commods/dairy.html>

to produce both lamb and beef, with an annual capacity of 73,500 heads per annum. There is also a major domestic abattoir based in Warragul with similar capacity. Another major abattoir, sited on the Gippsland boundary at Pakenham, has a capacity to kill over 130,000 animals annually.

a. Logistics

The freight movements of the Agricultural industry are varied in destinations, volumes and seasonality, with growth in the vegetable, fruit, and food processing sectors in the East. The most significant tasks in this area include movement of livestock from farms to the saleyards and abattoirs within the region.

Figure 11: Gippsland agricultural production centres

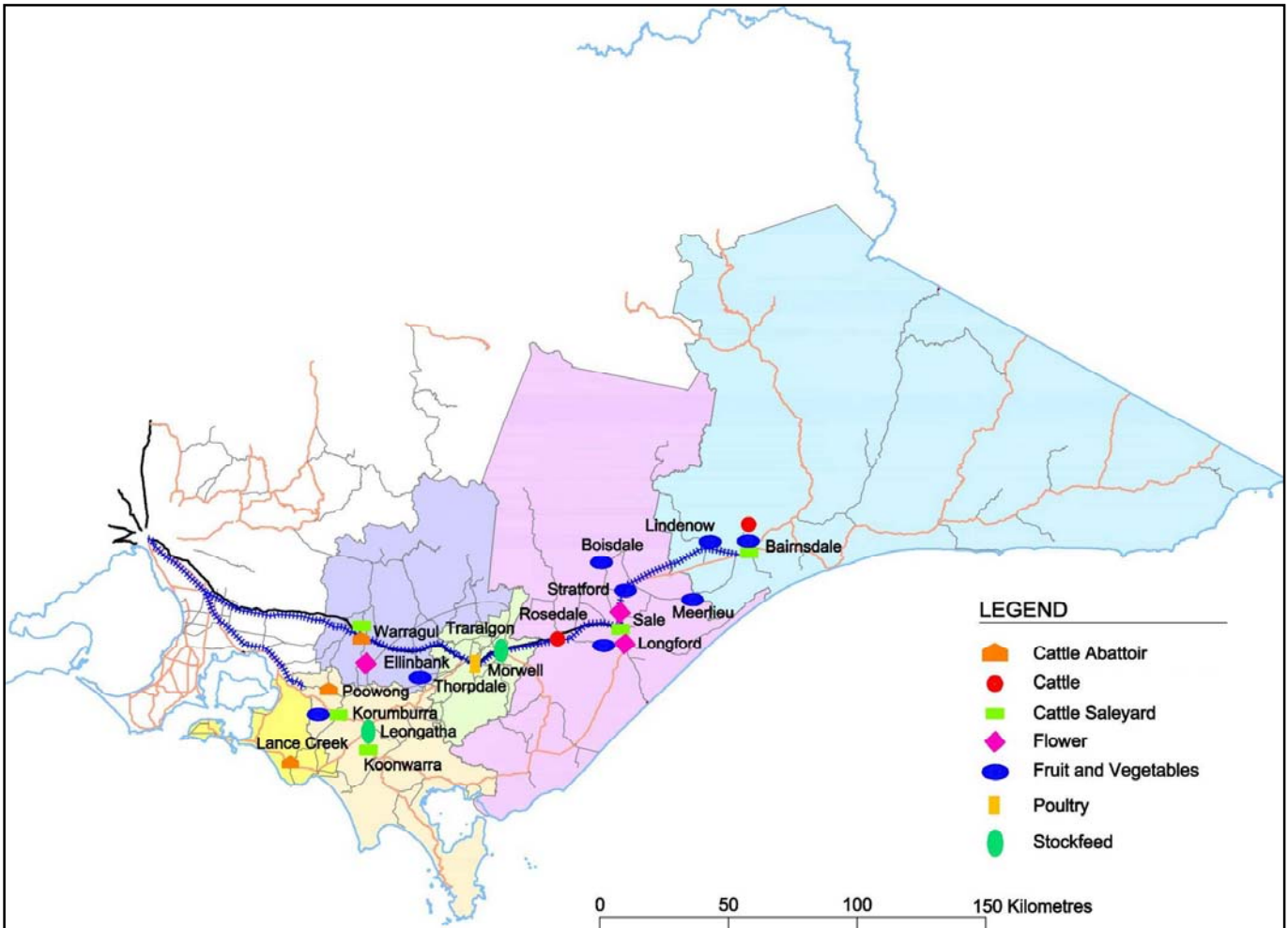


Table 6: Agricultural Production Centres, Saleyards and Abattoirs

Location	Description	Shire/City	Industry
Lance Creek	Export Abattoir	Bass Coast	Cattle - abattoir
Pakenham	Abattoir	out of jurisdiction	Cattle - abattoir
Poowong	Export Abattoir	South Gippsland	Cattle - abattoir
Warragul	Domestic Abattoir	Baw Baw	Cattle - abattoir
Bairnsdale	Patties Pies	East Gippsland	Food Manufacturer
Longwarry	Pure Harvest	Baw Baw	Food Manufacturer

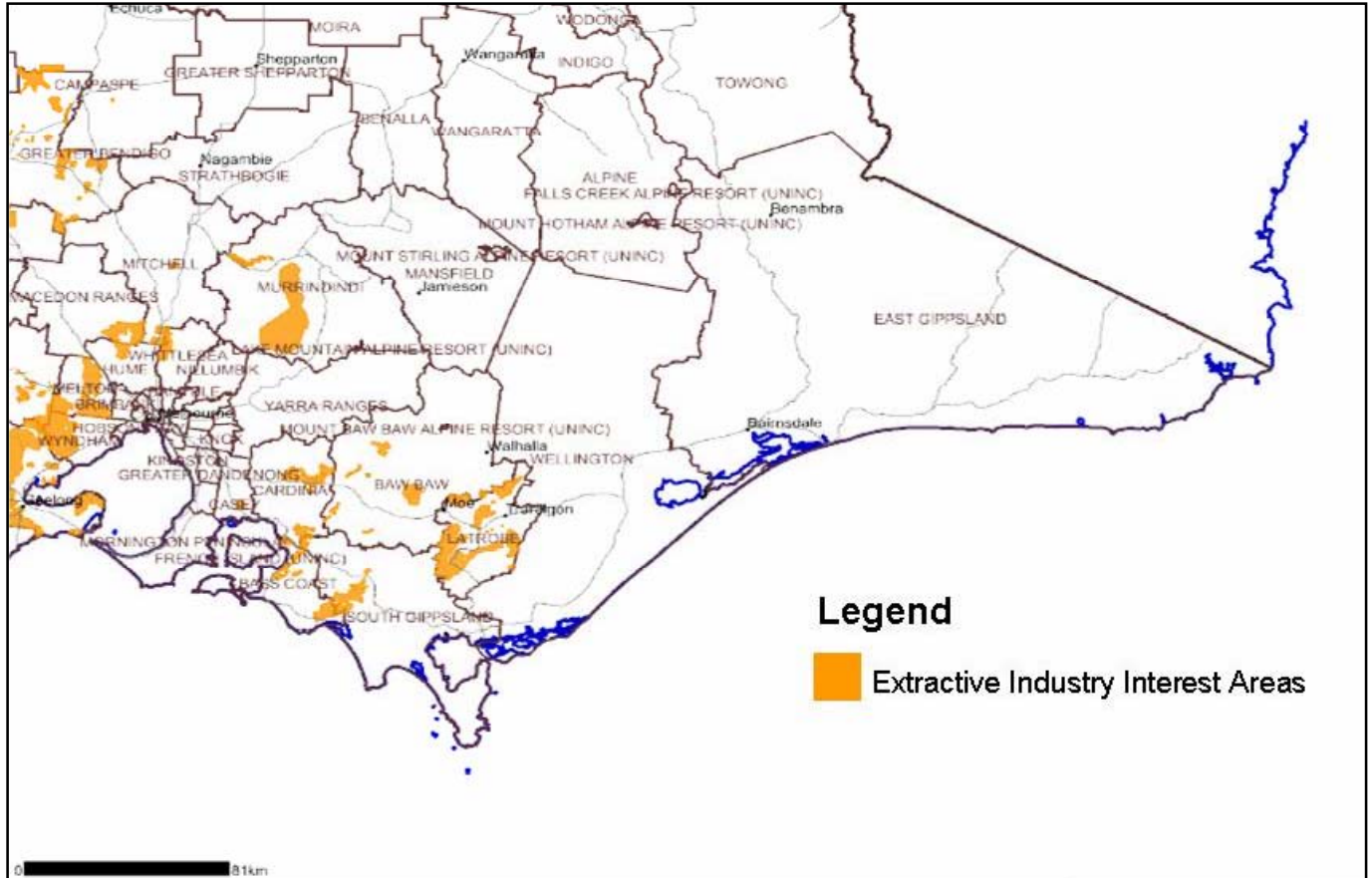
Location	Description	Shire/City	Industry
Rosedale	Rosedale Leather	Wellington	Tannery
Bairnsdale	East Gippsland Saleyards	East Gippsland	Cattle - Saleyard
Koonwarra	Saleyard	South Gippsland	Cattle - Saleyard
Korumburra	South Gippsland Regional Saleyards	South Gippsland	Cattle - Saleyard
Sale	Sale Livestock Exchange	Wellington	Cattle - Saleyard
Traralgon	Saleyard	Latrobe	Cattle-Saleyard
Warragul	Warragul Baw Baw Livestock Exchange	Baw Baw	Cattle - Saleyard
Ellinbank	Flower Farm	Baw Baw	Flower
Hazelwood	Hazelwood Flower Farm	Latrobe	Flower
Longford	Australian Wildflower Co.	Wellington	Flower
Longford	Longford Flowers	Wellington	Flower
Sale	Van Berkel Flowers	Wellington	Flower
Port Albert	Port Albert Wildflowers	Wellington	Flower
Bairnsdale	Vegco - Fresh Fruit and Vegetables	East Gippsland	Fruit and vegetables
Boisdale	Vegetable Farm - Cabbage and lettuce	Wellington	Fruit and vegetables
Koo Wee Rup	Momack Produce - Asparagus	Out of jurisdiction	Fruit and vegetables
Korumburra	Select Produce - Snowpeas	South Gippsland	Fruit and vegetables
Latrobe	Hydroponic Tomatoes	Latrobe	Fruit and vegetables
Lindenow	Growco - Sweetcorn, brocolli and asparagus	East Gippsland	Fruit and vegetables
Longford	Covino Farm Produce	Wellington	Fruit and vegetables
Meerlieu	Vegetable Farm	Wellington	Fruit and vegetables
Meerlieu	Vegetable Farm - Potato	Wellington	Fruit and vegetables
Stratford	Vegetable Farm - Asparagus	Wellington	Fruit and vegetables
Thorpdale	Vegetable Farm - Potato	Baw Baw	Fruit and vegetables
Warragul	Flavorite Tomatoes	Baw Baw	Fruit and vegetables
Morwell	Lyndale Poultry	Latrobe	Poultry
Clyde	Stockfeed	Out of jurisdiction	Stockfeed
Leongatha	South Gippsland Stockfeed	South Gippsland	Stockfeed
Traralgon	Stockfeed	Latrobe	Stockfeed

3.3.4 Extractive Industries

The demise of briquette production has resulted in reduced domestic traffics. On the other hand, the volumes of stone and gravel and other building materials are growing and will

continue to grow with the development of the Connect East Ringwood to Frankston toll way and the establishment by John Holland of the concrete products and pre-stressing facility for the project at Morwell. In addition the Pakenham By-Pass is scheduled to commence in the next 18 months and will draw materials and products from the Valley. These could create significant new traffics in and out of the facility.

Figure 12: Gippsland extractive industry interest areas



The development of major sand and stone deposits in east Gippsland will result in sizable demands for transport. It is likely that with the retirement of quarries closer to Melbourne and the movement of the population centroid of Melbourne eastwards, the deposits of building materials in the Morwell, Trafalgar and Leongatha areas will be increasingly developed. In the case of sand, it is expected that there will be around 500,000 tonnes of new product and stone mining East and south east of Churchill⁹.

⁹ Source and quantity of quarry products in Latrobe region are well described in: Olshina A and Jiricek F; Geological Survey of Victoria Technical Record 1999/4; Latrobe Supply Area. Extractive Industry Interest Areas. DNRE 1999

3.3.5 Potential Freight Opportunities for Morwell

The freight opportunities in the Latrobe Valley are related to the usual drivers of freight: production and consumption. Production has the double impact of raw materials in and production out. Consumption is largely uni-directional (although reverse cycle logistics such as waste and excess stock is a growing component of demand for freight).

The production opportunities centre around the traditional areas of energy, value adding to brown coal, agricultural production (fertiliser, dairy, meat, vegetables, flowers and olives), forestry (logs in the round, sawn timber, woodchips, and pulp),and construction materials (sand, gravels and stone). There is also a growing expansion of manufacturing and engineering in the Valley: from high value production of aircraft (Gippsland Aeronautical Services) to heat beads from brown coal (Auschar). The land, energy, labour and water availability in the region lends Gippsland as an attractive alternative. Road access is good and road transport is highly developed with more than 50 operators in Gippsland. The trend has been to have family freight businesses with town based fleet operations carrying for local industries.

The development of population centres will drive consumption and the gradual expansion of Melbourne's urban development towards the East has seen commuters from as far as Drouin and beyond. The regional fast rail operation due to commence in 2006 is expected to deliver growth to the Gippsland region.

It is not possible to predict freight flows on a commodity basis without significant research. Suffice it to note that the Bureau of Transport Economics and Regional Services¹⁰ has predicted growth of 60% in freight tonnages on the Melbourne Sydney corridor, 75% on the Adelaide corridor and more than 65% across the inter capital routes. It would be expected that such increases would manifest themselves on the Gippsland routes as well.

The VicRoads estimate of truck travel on the Princes Freeway is around 2400 trucks per day (see later) and a 65 % increase would see this figure around 4000 trucks per day by 2020 if rail does not increase its modal share. The essence of this estimate is that some 200,000 tonnes of additional general long distance freight may be anticipated passing this site over the next 15 years.

¹⁰ Gargett D and Sidebottom A: *Annual Tonnages for the Seven Principal Corridors*; Bureau of Transport and Regional economics September 2003

3.4 Freight Trends in Latrobe

The Latrobe City and regions have for the last decade seen huge changes as a result of changes in the economic and social structure of their communities. In part these changes were inevitable (rationalisation of dairy production, evolving environmental and planning issues) and, to a large extent, the policies of Governments accelerated restructuring in the name of economic reform. This was undertaken at a pace that resulted in a mixed set of good and bad outcomes at both a social and economic level. The region has and is taking massive steps to restructure, improve productivity, establish new resource and production industries and enhance accessibility to larger centres. The experiments in reforms during the 1990s were vital for reinvigoration of tired economic and commercial models but were undertaken in a manner that did little to accommodate structural adjustments in employment and broader public policy goals. The models were single policy mantras of economic reform based almost entirely on financial reforms.

Transport was a fundamental component of that process. We contend that rail freight services are critical to the long-term sustainable development of the region.

One of the key 'reforms' of the previous Victorian Government was the sale of the Government rail system. The sale, in advance of the development of a sensible access regime and as a separated business of passenger and freight rail, has sparked interface issues with regional passenger rail developments. The result is an access regime that does not work – we note that it is under review.

Gippsland's transport growth has been steady, with road traffic carrying the bulk of the freight into and out of the region. The region sees a period of significant growth in traffic with expansion of resource industries, timber, paper, quarry products and chemicals, all reporting growth opportunities.

The City has estimated that the likely scenario is a growth in bulk materials of over 8 million tonnes per annum and of containerised or breaks bulk there is a projected increase in traffics of one million tonnes or approximately 60,000 TEUs per annum.

These growths are within the context of the general estimates of a doubling of freight traffic within 15 years¹¹. The Gippsland region boasts some very healthy export industries. A large amount of this product is however low value bulk material (logs, woodchips and construction materials). These products demand efficient distribution to remain price competitive.

This means that efficient rail and road services supported by modern well-designed intermodal facilities are required. The City has recognised this in sponsoring this project.

There is a mixed picture in freight demand in and around Latrobe. A VicRoads' traffic count in 1997 revealed 19,000 vpd in the Latrobe valley. Of this number, 10% was truck traffic. VicRoads' projection of a 3% annual average growth rate provides us with a 2005 heavy vehicle figure of 2,407 vehicles per day.

¹¹ Bureau of Transport and Resource Economics "Freight between Australian Cities" 1972 to 2001 Information Sheet 22.

4 Development Issues

A previous report prepared for the project (Development Issues Report) identified a number of important issues to take into account in developing the site. Overall, the subject site does not present major impediments to the development and use of the land for a Logistics Precinct, however there are a number of factors that must be taken into consideration during the planning process for any future development. These issues should be considered as technical design limitations rather than outright constraints on the development potential of the precinct. These issues include:

- **Governance and rail access issues** - These issues relate to governance and rail access and are discussed separately in section 3.1.
- **Site Development Constraints**- Land use conflicts with adjoining uses, stormwater management,
- **Utilities** - the availability and development of suitable utilities to service the site, including consideration of the costs of providing services
- **Traffic and Road Access**

The eastern boundary of the site along Tramway Road is another area of approximately 8.5 hectares of land that cannot accommodate built structures due to the presence of a 124m wide SPI Powernet easement. This area of the site is highly restricted in the types of activities permitted under the transmission lines and towers and therefore likely to remain undeveloped for industrial purposes with the exception of access points off Tramway Road to the site. It is possible that this area could be retained for grazing purposes, used for stormwater treatment, used for limited and temporary truck and freight storage, or landscaped appropriately as a buffer between the development and Tramway Road.

There are no further crucial utility or service constraints identified that will prevent the development of the Logistics Precinct. Overall, a large area within the centre of the site remains available for appropriate industrial or retail uses, particularly with an associated dependence on the nearby rail infrastructure.

The aim of the concept plan is to illustrate in broad terms how the application of the development principles may lead to development of the site. Ultimately, there are a number of key issues or constraints to development on the site that need to be considered. These are outlined in the following sections.

4.1 Governance and Rail Access Issues

Section 2 of this report provided an overview of the various parties and organisations involved in the freight/rail/intermodal sector in Victoria/Australia. The purpose of this section is to further explore that context and identify the key issues for ownership, governance of the site in the future, and rail access arrangements.

4.1.1 Ownership and Governance Issues

The ownership and governance arrangements as they pertain to the railway siding are more difficult to be categorical about, as they broach issues of broader economic impacts that are rarely tackled. However, the City of Latrobe has created such an opportunity with this master planning study. The study itself, while primarily focussed on land owned by Council, also focuses on the GIFT site. It is therefore useful to provide some background on the issues surrounding rail and regional transport.

The existing GIFT siding is owned by the Victorian Government and leased by VicTrack to the railway company Pacific National. There exists a condition on the lease that requires the railway operator to demonstrate use and need for the siding for railway purposes in the event that the Government wishes to exercise its option to take the lease back. If this can not be done, the Government can with 12 months notice redeem the property. It is thus in a formal sense outside the primary infrastructure lease that comprises the principal land and operating arrangements for the Victorian Rail system under the sale arrangements with PacNat.

There are simply very few opportunities to construct efficient off line sidings and interchanges between Melbourne and the Latrobe Valley. Abutting development and other constraints effectively limit these to one or two sites. It is one reason why the Latrobe City has supported the development of the GIFT and the development of this site as a future storage and distribution hub for the region. There are very few if any sites with sufficient length and area adjacent to road and rail between Dandenong and Morwell. The City has in the past worked closely with shippers and developers to locate such sites and have for a variety of reasons failed.

The development of the GIFT has been a major commitment by the City and State Government, although in more recent times the latter has taken a more hands-off approach to the facility. Pacific National who operates the facility has a view that there is insufficient freight to warrant the operation of the terminal.¹² As we will discuss later in this paper, that view may be altered by a mixture of marketing strategies for the site and identifying alternative opportunities for investment returns in the rest of the network. The combination of scarce land and planning regulations makes the market for large efficient intermodal terminals accessing regulated track networks demonstrably imperfect. The demonstration of this is evidenced in practice by the recent phenomenon of regional and local governments' involvement in the establishment of freight hubs next to rail. A void in the level of efficient regional freight terminals has been left following a fair amount of neglect for general freight rail services in the past.

¹² Personal communication with the consultants and PacNat. This excludes Australian Paper whose rail freight is currently loaded at Maryvale.

In more recent times, initiatives at Wodonga, Warnambool, Shepparton, Morwell and Ballarat have been active in filling that void. It is not public sector replacement but rather facilitation that is needed. Without the coverage of a suitable access regime for these terminals, these initiatives are made more difficult. Indeed we note that a change of lease arrangements post the sale of V/Line Freight has been a key determinant in the level of activity of rail freight at the GIFT. Traffics that were on rail are now on road (these issues largely relate to the rail access arrangements, and are discussed below).

The costs of that transfer are met by the State and local government who in turn seek to recover these under separate road-charging mechanisms. In the case of local government these have next to vanished from their regulatory armoury. Thus freight that is lost from rail to local roads systems is usually not recovered by local authorities. This is evident in the areas of large log movements and grain line closures.

The large footprint that PacNat now has in Australia's rail system makes marginal traffics an unattractive position in the context of the firm's responsibilities to provide returns to shareholders. The ability to attract second and third tier operators is limited and certainly difficult if access is challenged by the leaseholder.

Options for the ownership of the subject site are explored later in this report, however in our opinion, these options should ensure that there is a high level of control over the 'outcomes' of the development by Council. There may be an opportunity for interim uses to be encouraged and sanctioned providing they do not negate the future rail siding development if need be.

Council should negotiate the in-principle rights to access the mainline with the Government prior to finalisation of the access regime agreement. Not to do so could lead to similar difficulties faced by others in attempting capital works at Geelong grain loop dual gauging; Wodonga logistics hub; and elsewhere where access to the track has been refused or significantly delayed.

4.1.2 Rail Access

With the background on ownership and governance issues in mind, it is noted that the key to the successful development of this site will be the ability to maximise the potential benefits of the proximity of the rail freight infrastructure through marketing the comparative advantages of the site. In the first instance, establishing an agreement with PacNat over the use and development of the site is perhaps the most fundamental aspect of the project.

The negotiations between the stakeholders involved in the operation of the Gippsland Intermodal Freight Terminal (GIFT) facility will be critical to the development of this site and continued dialogue is required to resolve some outstanding issues of contention such as access arrangements.

The GIFT facility is currently not at an acceptable standard required for its operation and will involve some investment in this infrastructure to reconcile this issue. The primary concerns are the insufficient length of the siding, and appropriate pavements and access to the rail siding for loading/unloading of freight. The Department of Infrastructure is currently preparing contract documentation that would provide for the extension of the

existing siding by some 500m, and this has been shown in an indicative way on the concept plans in this report.

In the case of newly constructed private sidings, the need to seek permission from the current rail operator as access provider, to connect, signal and use the facility, will require a robust and pragmatic access regime. In recent years, there have been cases where a few metres of rail connection has isolated major rail initiatives and threatened others. Freight owners and those contracted to move that freight, ought not be constrained from accessing a State owned and leased rail network because there is no mechanism for approving new facilities. The proposed extension of the access regime in Victoria is an important reform.

While an agreement with PacNat to maximise the use of the site would be preferable, there are alternatives that could allow Council to develop the site with a siding located to the west of the GIFT site. This option has not been developed further in this master plan, as Council's stated aim and wish has been to develop a cooperative relationship with PacNat. However, we consider it important to reserve a band of land connecting with the main east-west line just west of the existing take off for the GIFT siding, to run parallel and south of the GIFT site. This reservation would be designated as a future rail siding in case agreement for use of the GIFT site cannot be reached. Its purpose would be to cater for potential large users requiring additional or dedicated siding capacity and to unashamedly provide some contestable pressure on the existing leaseholder of GIFT should there be any monopolistic behaviour in the future.

We contend that this piece of rail land reservation should remain in the ownership of the City, with the proviso that interim uses should be encouraged and sanctioned providing they do not negate the future rail siding development if need be. The City should negotiate the in-principle rights to access the mainline with the Government prior to finalisation of the access regime agreement. Not to do so could lead to similar difficulties faced by others in attempting capital works; for instance at the Geelong grain loop dual gauging; the Wodonga logistics hub; and elsewhere where access to the track has been delayed.

It may also be possible to negotiate for a stub turnout to be built on the alignment of the reservation to the boundary of the VicTrack reservation. This would serve to avoid the risk cited above and provide some assurance of physical connectivity into the future if demand or necessity dictate this additional siding.

4.1.3 Rail Infrastructure

The Gippsland Intermodal Freight Terminal (the "GIFT") facility is located directly adjacent to the main Melbourne – Sale railway line on its southern side. At this point the main line comprises two broad gauge tracks. The southern track is newly constructed as part of the Regional Fast Rail upgrading and is rated at 25 tonne axle loading at 80 kph. The second track has a reduced rating. The full standard track is accessed by the Intermodal site via two turnouts currently around 850 metres apart. This provides a usable siding length in the facility of about 750 metres. There is an extension planned and funding agreed to extend the Eastern turnout a further approximately 700 metres and allow for a total siding length of approximately 1100 metres. An additional runout and dead end stop would be provided via points at the eastern end of the site. This is designed to accommodate the break up and rebuild of a train in the siding. We have not identified the

potential location or design of this in the project, as this is subject to further confirmation and is beyond the scope of Council's ownership.

The northern side of the main line in the same vicinity has the exchange siding comprising two parking roads and a turnout to the Maryvale siding which is a broad gauge branch running parallel to Andersons Road. This siding is in poor condition. It has a 10km per hour speed limit and a low axle rating of between 13 to 16 tonnes.

The Maryvale siding has two trains a day moving paper from the mill in containers on flats. The trains are built at the mill siding and hauled as Toll trains to the North Dynon facility of Amcor.

4.2 Site Development Constraints

4.2.1 Topography

The site is relatively flat, and the potential geotechnical conditions across the site are unknown. Future geotechnical and survey/contour investigations will be required to refine and confirm the costs of providing services and site development.

4.2.2 Stormwater Management

Through discussions with Council it is understood that the site is subject to inundation due to the flooding of the Waterhole Creek and Bennets Creek systems. Latrobe City Council has prepared a study brief for a Floodplain Management Plan for Waterhole Creek at Morwell. This study has not yet been completed, however the area of 'parkland' set aside within the site is likely to be greater than the requirements of the site itself, and therefore some additional capacity for attenuation of flood waters will likely be available should this be identified as being required through the broader flood study. Significant works are likely to be required to mitigate these problems. Where the costs for these mitigation works will lie is not part of the scope of this project, however the basis for development of this site has been to identify appropriate infrastructure to deal with management of on-site stormwater. Clearly if Council would be constructing additional treatment or detention devices in this location, there would be some sense in investigating the opportunity to combine facilities required for this site and the wider catchment.

At present, constraints to flood flow occur at the railway reserve and water attenuation occurs on the site as a result, rather than by design. It is unlikely that this will change as such a measure will only transfer risks downstream to residential properties, keeping in mind that industrial land can typically accommodate a flood risk of 1:20 years, as opposed to residential land which is generally subject to 1:100 year standard. In any case, specific floodplain mapping for the site should occur as part of the aforementioned study.

Given that a substantial portion of the western section of the site is subject to flooding, development in this area is unlikely.

The current flooding problem highlights the need to direct stormwater through the development using water sensitive urban design principles that have the following advantages over traditional design:

- Post development stormwater runoff from the site can be limited to near pre development levels for all storm events up to the 100 year ARI, which maintains the status quo and minimises downstream impact on the environment and existing infrastructure;
- Natural flow paths are retained where possible using channels and swales;
- Grass swale drainage channels filter and clean stormwater whilst being cost effective compared with underground pipework;
- Detention ponds contain peak flows, improve overall aesthetic values, reduce costly infrastructure downstream and store water for re-usage as landscape irrigation; and
- Wetland areas both filter and remove pollutants while attracting native wildlife through use of appropriate native flora.

4.2.3 Earthworks and Pavements

Transport and distribution centres require large areas of relatively flat surfaces for the construction of rail tracks, roads, freight handling areas and large floor area buildings. The nature of the Morwell site indicates that only a minimal level of earthworks should be required (in terms of excavation or filling) to achieve acceptable road grades and alignments. There is no information available on the geotechnical conditions of the site, and therefore no comment can be made about whether the ground conditions are generally likely to be suitable for the site earthworks and pavement subgrades. Confirmation will therefore be required from later geotechnical investigations.

Heavy duty pavements will be necessary to support the loads imposed by the various functional uses of the site. The most severe of these will be in the container handling areas where containers will be loaded and unloaded from trains and road vehicles and stored in container stacks.

In addition to the overall strength of pavement required to resist such loads, the surface of the pavement will need to withstand severe abrasion due to repetitive tight turning movements of the handling vehicles, forklifts and trucks. Container stacking also imposes severe concentrated loads on pavements and design criteria for these areas need to be developed in consultation with future users.

In the distribution centres, a number of pavement types will be developed to reflect the range of vehicles in use, including trucks operating at maximum highway loading to relatively light duty pavements for staff car parking and pedestrian areas. Again, design parameters will be developed for both strength and durability based upon the results of the geotechnical investigations and the most cost effective suitable base course and surface materials. These are discussed later in the report.

Design of the site entry road off Monash Way will need to give due consideration to the existing floodway in the area. Design of the road levels and alignment will need to ensure that the road does not become inundated during minor storm events whilst not restricting stormwater overland flow through the area. This may require the use of culverts. The road design will therefore need to be linked closely with the overall stormwater design of the site.

4.2.4 Site Contamination

No information is available on the potential for existing contamination of any part of the site. While the site has been used for pastoral/agricultural uses and contamination is unlikely, there may be historical 'hot spots' where potentially contaminated material has been disposed of inappropriately. Investigation of potential contamination issues on the GIFT site has similarly not been investigated, and it is noted that the incidence of contaminated soil in conjunction with working railways is reasonably high.

It is also noted that there are no sensitive uses planned for the site, which may reduce the requirements for remediation. In any case, it is envisaged that major ground works would be required to permit construction.

4.2.5 Ecological Issues

The site is characterised by flat and cleared pasture with an isolated distribution of trees and vegetation. The existing vegetation plantations on site appear to be generally native, although this would require confirmation. In principle, existing vegetation should be protected within the subdivision where possible, however there will be a significant opportunity for replacement planting within the 'parkland' areas proposed on the site, which will also fulfil a broader function of stormwater management.

The site having relatively flat topography further enhances the operation of a rail-based facility. There is a small wetland area located on the south west of the site that could form the basis for greater levels of ecological enhancement in conjunction with storm water management measures. This would need to be subject to more detailed investigation at a latter stage.

However, given that no survey has been carried out at this point, it is recommended that an assessment of native vegetation be undertaken prior to development of specific sites. This assessment would determine the degree to which, if any, the native vegetation management framework would apply.

4.2.6 Visual Issues

The existing electricity transmission lines and towers are an obvious constraint on the landscape and amenity of the site. The visual impact of the towers is significant and has a divisive implication by segregating the transmission line easement parcel of land, approximately 8.5 hectares, on the eastern boundary of the site parallel to Tramway Road.

With an extensive frontage to the Princes Highway, the site enjoys a high profile and is clearly visible from a number of vantage points. It therefore follows that the visual impact of the Logistics Precinct will be high, as a result, reinforcing the need to ensure a development that not only functions well for its users, but which also presents positively to the surrounding environs.

4.2.7 Impacts on Adjoining Properties

Typical planning or environmental issues arising from the operation of these facilities might include:

- Noise from trucks and plant (e.g. especially if a cold storage facility). These impacts can be managed through appropriate location of plant and traffic management/site design;
- Earthworks and sediment control arising from significant quantities of earth working to create large level sites suitable for warehousing;
- Traffic impacts, primarily from trucks including noise, safety, localised access issues;
- Visual and amenity issues associated with the construction of a large warehouse.
- The potential for reverse sensitivity issues arising from locating heavy manufacturing activities close to the retail (Midvalley Shopping Centre) and lighter industrial activities north of the main rail line;
- Light spill from any 24 hour operations.

The master plan will need to consider these issues, none of which are insurmountable.

4.2.8 Community Issues

The impact of the proposed development of the site on nearby residential communities, the TAFE and the shopping centre is an important consideration. Consultation has not been undertaken as part of this project to date. In our preliminary assessment, there are likely to be a number of potential impacts and issues of concern to the community:

- Noise from any increased rail operations at the site, including 'shunting' that may occur here (if any);
- Local traffic issues should significant volumes of truck traffic be directed onto local roads;
- Local traffic issues associated with increased traffic generally, including employees to and from work;
- Amenity impacts associated with the development of large industrial warehousing;
- Light spill impacts (if any) arising from 24 hour operation of any proposed facilities;
- Impacts arising from the development process, including impacts from earthworks;

Some targeted discussions with adjoining landowners could be initiated as part of the next stage of implementation to ensure that the development process can be managed as smoothly as possible. A strategy for consultation should be developed as an early task.

4.3 Utilities

Consideration of issues associated with utility services must include both the ability to service development on the site, and the constraints that the existence of those utilities on or near the may provide.

4.3.1 Power

One of the key constraints to use and development of the site is the presence of the SPI High Voltage Power Easement on the eastern side of the site. SPI PowerNet owns and operates the electricity transmission system in Victoria. They are responsible for maintaining the transmission system and their easements provide access to the

transmission lines for maintenance, repair and construction work to be performed. An easement includes the land surrounding the transmission line, including government and privately-owned land.

The main priorities of SPI PowerNet are to ensure that public safety is not compromised by inappropriate activities within easements and to ensure that the reliability of the line is maintained. To achieve this, they have established restrictions and conditions on the types of activities that can be undertaken on easements. These are shown in the following table:

Ownership of the easement remains with the landowner who has restricted use of the easement, and generally SPI PowerNet acquires the rights for use and the statutory authority to restrict the activities undertaken within the easement. Prior to commencing any development on the site easement, SPI PowerNet will need to provide written authorisation for the works, in addition to any Council permit that may be required.

While the construction of buildings under the power lines is not permitted, other activities may be permitted following discussion with SPI. The stacking of containers in this space may not cause a problem, except that the height of machinery and containers may need to be restricted. Discussions with SPI will be required to confirm whether any use can be made of this part of the site. The area cannot be used for environmental or conservation purposes where this involves the planting of trees. Design Guidelines established later in this report will be relevant.

Table 7: Restrictions of activities within SPI Power Easement

Generally Permitted	Prohibited
Some of the relevant <u>permitted</u> uses of SPI PowerNet transmission line easements to the Logistics Precinct site include:	Some of the relevant <u>prohibited</u> uses of transmission line easements include:
<ul style="list-style-type: none"> ■ Water storage dams, subject to achieving the appropriate clearances; 	<ul style="list-style-type: none"> ■ Buildings and structures;
<ul style="list-style-type: none"> ■ Trees and shrubs with a mature growth height not exceeding 3 metres; 	<ul style="list-style-type: none"> ■ Storage of materials, including waste bins and stockpiling of excavated materials;
<ul style="list-style-type: none"> ■ Landscaping and paving, subject to sufficient clearances; 	<ul style="list-style-type: none"> ■ Storage or handling of flammable liquids or gases;
<ul style="list-style-type: none"> ■ Fences up to 3 metres in height, suitably earthed and sectionalised if metallic and subject to SPI PowerNet's approval; and 	<ul style="list-style-type: none"> ■ Fuelling of and repairs to vehicles;
<ul style="list-style-type: none"> ■ Sewerage, drainage and water pipes constructed of an earthenware or plastic materials. 	<ul style="list-style-type: none"> ■ Use of vehicles and equipment exceeding 3 metres in operating height. A higher operating height is subject to sufficient clearances to the conductors to the approval of SPI PowerNet;
	<ul style="list-style-type: none"> ■ Parking of large trucks;
	<ul style="list-style-type: none"> ■ Loading, unloading and load adjustment of large trucks;
	<ul style="list-style-type: none"> ■ Metal pipes, power cables and other electrically conductive materials within 30 metres of any tower steelwork; and
	<ul style="list-style-type: none"> ■ Storage of explosives including fireworks.

TXU also have an easement containing high voltage 22kV overhead wires that runs east west across the site, dividing planned Lots 1 and 2. The overhead wires should be relocated underground.

TXU will supply the site with power from either the line described above or from an overhead line located on the east side of Tramway Road.

4.3.2 Water Supply and Wastewater

Gippsland Water is the relevant water supply and wastewater authority and has a Referral Authority role for any development. Although Gippsland Water has an easement that runs through the site, they have no active assets in it. The easement does however need to be retained for future use (*see Map 1*).

A 225 mm diameter asbestos cement water main in Tramway Road could be used to supply water, but is subject to Gippsland Water's review and approval given its age.

The sewer main most likely to be utilised is a 600mm diameter Latrobe Valley main gravity sewer located on the north side of the Princes Freeway. The depth of the sewer is not known, but it is likely that sewage and trade waste will need to be collected on site and pumped. Given the relatively flat topography of the site and the unknown configuration of the development, more than one sewer pump may be required. Each pump station would probably require an underground detention tank. The water supply and waste water system will revert to Gippsland Water ownership after construction and will require easements to be created in their favour if their existing easement is not used.

Any servicing of this development site will be required to be completed in accordance with the National Water and Sewerage Codes and Gippsland Water's Addendum. The property owner will be required to employ an approved consultant to provide details of capital costs, undertake responsibility for design, supply materials and arrange the construction works using accredited pipe-layers, to Gippsland Water's standards and specifications. The future developer is responsible for bearing all costs associated with the servicing of the site.

Gippsland Water will impose conditions on the planning permit for the site that will be specific to the logistics precinct development proposal. However, the following conditions are an indication of the requirements that may be relevant to development of the site:

- Payment of Headwork(s) and Outfall Disposal Charges. Contributions costs are payable where land is subdivided, or an existing property is redeveloped;
- Extension of water and or sewerage services;
- Payment of water and wastewater connection fees for new connections;
- Formal agreements reached between the owner(s) and Gippsland Water for the construction of works to provide water and wastewater to the individual lots where applicable;
- Install separate (metered) water services and wastewater disposal connections;
- Have easements created over existing and/or new services within the development;

- Provide a Body Corporate Schedule incorporating “Special Rules” for the maintenance of any common sewer drain and water service; and
- Lodgement of the Plan of Subdivision for certification.

Depending on the nature of development, it is also possible that the developer may be required to:

- Ensure no construction is over a water and sewer easement that may be located within the property. Easements are created to protect Gippsland Water assets;
- Trade Waste Agreement entered into where applicable (Commercial/Industrial). Waste other than domestic sewage generally requires pre-treatment. Any business discharging trade waste must have a Trade Waste Agreement; and
- Install a Back-flow Prevention Device where applicable to commercial / industrial developments.

Once all the conditions have been met by the developer, Gippsland Water will consent for a statement of compliance to be issued by Latrobe City Council.

The contributions payable for the provision of water supply and wastewater services are determined by the location, type and density of the development. Headworks and Outfall/Disposal contributions vary according to the geographic location of a development. An indicative cost to the developer for a site in Morwell is \$1200/ha for Headworks Water Supply and \$1500/ha for Outfall/Disposal Wastewater. However, contributions for the development of industrial sites are assessed on a case-by-case basis as industrial developments usually place a higher demand on the water and wastewater systems and can vary significantly depending on the type of industrial development. These costs have not been included at this point.

It is unlikely that logistics activities or associated warehouses will have a significant water/wastewater requirement.

In summary, the Logistics Precinct site is not heavily constrained by water supply and wastewater connection issues as these services will be technically capable of being provided to the site. The developer will, however, need to satisfy a number of conditions prior to commencing development and will incur significant costs for the provision of these services.

4.3.3 Telecommunications

Plans supplied by Telstra indicate that there are no assets within the study area. Local cabling is located immediately north of the study area that services the Gippsland Intermodal Freight Terminal and also on the east side of Tramway Road.

The strategic planning group of Telstra Country Wide, located in Gippsland, have advised that there are no impediments to supplying a basic telecommunications service to this site and at no cost to the future developer. Therefore, these costs have not been considered further. The supply to this area would be via optic fibre cabling with a mini exchange that would offer all the most up to date Telstra products including high speed internet and mobile phone coverage to the site. This allows for a range of telecommunications requirements which can be adapted to the specific site uses once this is established. The

provision of these services at this early stage of development also ensures that future growth in the area is sufficiently catered for.

4.3.4 Gas

There are no gas easements or assets located within the study area. Origin Energy has a 200mm diameter distribution gas main running along the west side of Tramway Road that currently terminates at Swan Road. After discussions with Origin Energy, it is understood that this distribution line will have sufficient capacity to service the site for the land uses under consideration if a gas service is required.

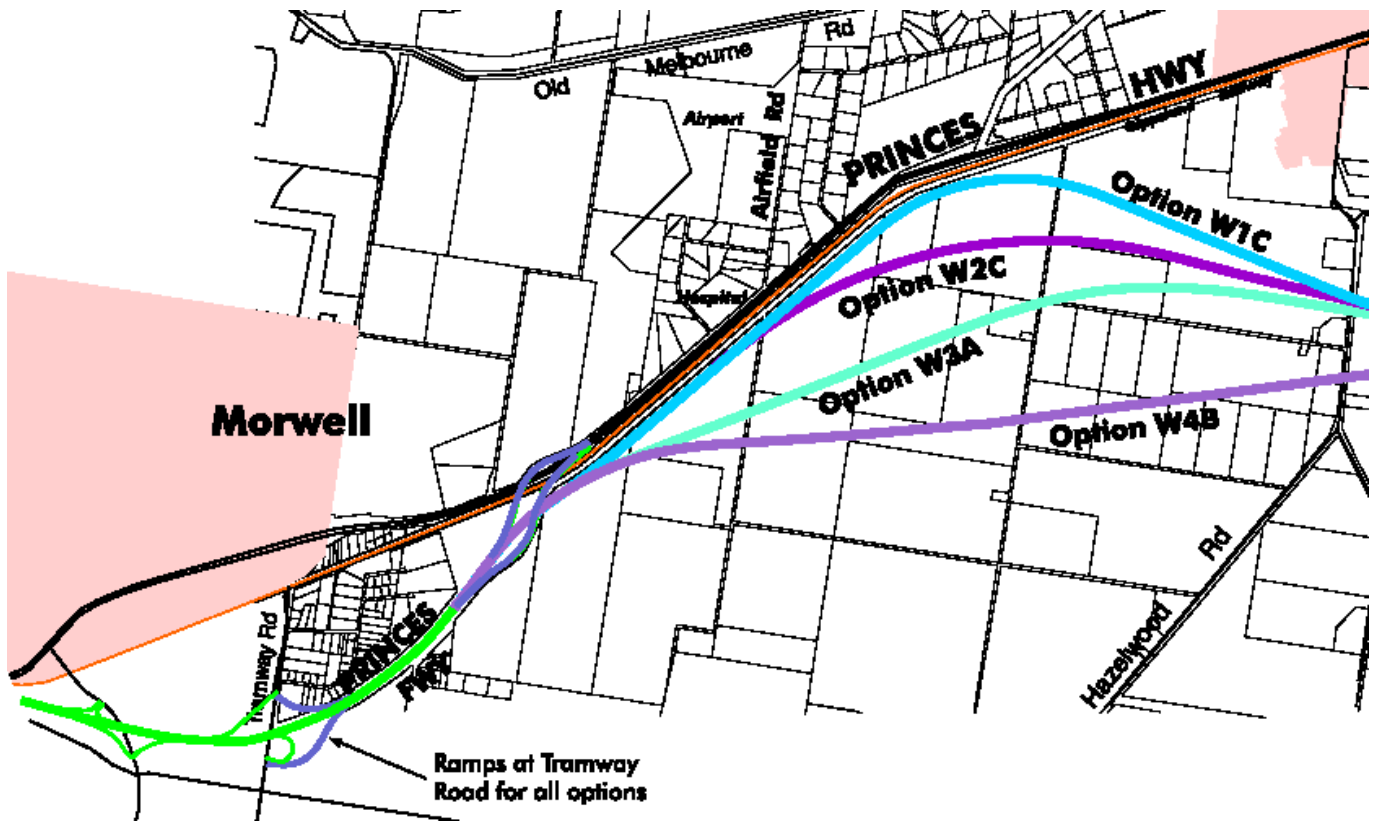
4.4 Traffic and Road Access

4.4.1 Regional Context

In relation to future road planning within the Latrobe region, discussions with VicRoads has revealed long term plans to construct a Traralgon Bypass on the Princes Highway. The purpose of this bypass will be to improve safety and access for through and local traffic, to facilitate more efficient movement of people and freight, and to provide cost-effective road improvements.

As part of its planning phase, VicRoads is currently in the process of selecting a route to secure the appropriate reservation of land to ensure its availability in the future. Eight different route options have been explored during the assessment phase. It is anticipated that the Bypass will not need to be constructed for possibly up to 20 years due to volumes of traffic currently travelling through Traralgon being insufficient to justify funding for the project at the present time. However, of particular relevance to the Morwell Logistics Precinct project is that all options involve the addition of east facing ramps at Tramway Road, thus creating a full interchange. Discussions with VicRoads indicate that the Tramway Road interchange may be considered for construction in advance of the main bypass project.

Figure 13: Traralgon Bypass options (Source: VicRoads)



4.4.2 The Logistics Precinct - Traffic Impacts

The Logistics Precinct is considered to be a “gateway site” in terms of access and transportation. The site is accessed from both Monash Way, which provides a single access point to the east of the site, but which is not well formed. The second major access to the site is via a sealed ‘full strength’¹³ pavement, Enterprise Drive, along its southern length from Tramway Road. These two key access points and the potential for access off Tramway Road are discussed in the following section:

a. Tramway Road

Tramway Road runs along the eastern site boundary. The road runs in a north-south direction between the towns of Morwell and Churchill. A half freeway interchange is provided on Tramway Road to the south of the site with ramps provided only in the Melbourne direction. The freeway interchange is unsignalised. There is an at-grade railway crossing controlled by flashing lights and booms to the north of the site.

Traffic Counts were undertaken along Tramway Road by Latrobe City Council in September 2004. The road currently operates with a daily traffic volume of 7,985 vehicles, an AM peak hour volume of 597 vehicles and a PM peak hour volume of 765 vehicles. Our

¹³ Testing has not been undertaken on the pavement strength, Personal communications with DOI officers indicate that Enterprise Drive was constructed to a high load bearing capacity.

observations indicate that a significant proportion of Tramway Road traffic consists of heavy vehicles. Tramway Road has a posted speed limit of 80km/h. There is minimal street lighting provided along Tramway Road adjacent to the site frontage.

Adjacent to the site the road is undivided and consists of one through traffic lane in each direction. The pavement is generally 10.5 metres wide, with a 3.0 metre lane provided in the northbound direction and a 5.5 metre lane provided in the southbound direction. A 2.0 metre sealed shoulder is provided on the west side of the road while a kerb is provided on the east side. A number of industrial businesses are located on the east side of the road opposite the site. Parking is permitted along the east side of the road, however our observations are that there is minimal parking currently occurring.

There is currently one sealed access provided to the site from Tramway Road. This access is located approximately 100 metres to the south of the railway level crossing. In the vicinity of this access the width of Tramway Road increases to provide two through traffic lanes in each direction.

There are three roads which lead into an industrial estate on the east side of Tramway Road opposite the site frontage. One of these roads (Minchington Road) is located opposite the existing site access, creating a cross intersection. The increased width of Tramway Road in the vicinity of this intersection allows through traffic in Tramway Road to drive to the left of vehicles waiting to turn right into both the site access and Minchington Road.

The other two roads leading into the industrial estate opposite the site intersect with Tramway Road at unsignalised T intersections. The southern road (Swan Road) is located 100 metres to the north of the freeway off-ramp. Tramway Road widens with a right turn deceleration lane provided at the Swan Road intersection. There is no road widening of Tramway Road provided in the vicinity of the remaining intersection giving access to the industrial estate to the east (Kirwin Road).

b. Monash Way

Monash Way runs along the western site boundary. The road runs in a north-south direction between the towns of Morwell and Churchill. A full freeway interchange is provided with the Princes Freeway to the south of the site, providing access towards both Melbourne and Traralgon. The freeway interchange is controlled by traffic signals. To the north of the site Monash Way runs underneath the Gippsland railway line, with the railway bridge providing a limited height clearance of only 4.5 metres.

Traffic Counts were undertaken along this road by VicRoads in 1999. These counts showed a daily traffic volume of 6,367 vehicles, an AM peak hour volume of 581 vehicles and a PM peak hour volume of 634 vehicles. The counts also show that approximately 5% of traffic travelling along Monash Way are heavy vehicles. Monash Way has a posted speed limit of 80km/h.

Adjacent to the site Monash Way is an undivided road with one through traffic lane provided in each direction. Street lighting is provided along the east side of Monash Way adjacent to the site frontage.

There is currently one access provided to the site from Monash Way. This access is located approximately 150 metres to the south of the railway bridge and 150 metres to the north of

the eastbound freeway interchange. Both right turn and left turn deceleration lanes are provided in Monash Way to assist vehicles turning into the site. The right turn lane is 56 metres long including the taper while the left turn lane is approximately 100 metres long including a lengthy taper. The length of the right turn lane is restricted by a traffic island and right turn lane associated with the freeway interchange to the south.

There is no development on the west side of Monash Way opposite the site. A sealed shoulder is located on the west side of the road, while there is some kerb and channel on the east side of the road to the south of the existing site access.

c. Traralgon Bypass Impact

As part of the proposed Traralgon Bypass project it is proposed to construct east facing ramps at the Tramway Road interchange. While this may not occur for up to 20 years, the construction of a full interchange at Tramway Road is likely to result in traffic signals being installed at the cross intersection formed 100 metres to the south of Swan Road.

Prior to the construction of the full interchange at Tramway Road, traffic wishing to travel between the subject site and Traralgon will require access to Monash Way in order to gain access to the Princes Freeway via the existing interchange. Accordingly, it is important that access to the subject site is provided to Monash Way.

4.4.3 Traffic Generation

The ultimate traffic generation from the proposed development has been estimated based on the subdivision concept, considering the projected site areas, proposed uses for each site and the projected site coverage.

Table 8: Traffic generation from the development

Site*	Use	Area	Building Proportion	Floor Area m ²	Peak Rate veh/m ²	Peak Traffic	Daily Rate veh/m ²	Daily Traffic
1	warehouse	114000	40%	45600	0.005	228	0.04	1824
2	warehouse	99560	40%	39824	0.005	199	0.04	1593
3	warehouse	5000	40%	2000	0.005	10	0.04	80
4	warehouse	5000	40%	2000	0.005	10	0.04	80
5	warehouse	5000	40%	2000	0.005	10	0.04	80
6	warehouse	5000	40%	2000	0.005	10	0.04	80
7	warehouse	5000	40%	2000	0.005	10	0.04	80
8	warehouse	5000	40%	2000	0.005	10	0.04	80
9	warehouse	5000	40%	2000	0.005	10	0.04	80
10	warehouse	5000	40%	2000	0.005	10	0.04	80
11	warehouse	5000	40%	2000	0.005	10	0.04	80
12	warehouse	5000	40%	2000	0.005	10	0.04	80
13	warehouse	5000	40%	2000	0.005	10	0.04	80
14	warehouse	5000	40%	2000	0.005	10	0.04	80
15	warehouse	5000	40%	2000	0.005	10	0.04	80
16	warehouse	5000	40%	2000	0.005	10	0.04	80
17	warehouse	5000	40%	2000	0.005	10	0.04	80

Site*	Use	Area	Building Proportion	Floor Area m ²	Peak Rate veh/m ²	Peak Traffic	Daily Rate veh/m ²	Daily Traffic
18	warehouse	5000	40%	2000	0.005	10	0.04	80
19	warehouse	5000	40%	2000	0.005	10	0.04	80
20	warehouse	5000	40%	2000	0.005	10	0.04	80
21	warehouse	5000	40%	2000	0.005	10	0.04	80
22	warehouse	5000	40%	2000	0.005	10	0.04	80
23	warehouse	5000	40%	2000	0.005	10	0.04	80
24	warehouse	5000	40%	2000	0.005	10	0.04	80
25	warehouse	5000	40%	2000	0.005	10	0.04	80
26	warehouse	5000	40%	2000	0.005	10	0.04	80
27	warehouse	5000	40%	2000	0.005	10	0.04	80
28	warehouse	5000	40%	2000	0.005	10	0.04	80
29	warehouse	24100	40%	9640	0.005	48	0.04	386
30	warehouse	5000	40%	2000	0.005	10	0.04	80
31	warehouse	5000	40%	2000	0.005	10	0.04	80
32	warehouse	5000	40%	2000	0.005	10	0.04	80
33	warehouse	5000	40%	2000	0.005	10	0.04	80
34	warehouse	17390	40%	6956	0.005	35	0.04	278
35	factory	20120	40%	8048	0.01	80	0.05	402
36	factory	23880	40%	9552	0.01	96	0.05	478
37	factory	24770	40%	9908	0.01	99	0.05	495
38	factory	23780	40%	9512	0.01	95	0.05	476
39	factory	20110	40%	8044	0.01	80	0.05	402
40	factory	17940	40%	7176	0.01	72	0.05	359
41	service centre	8760	40%	3504	0.01	35	0.05	175
42	service centre	6570	40%	2628	0.01	26	0.05	131
-	rail siding	N/A	-	N/A	-	5	-	50
TOTAL		550980	-	220392	-	1398	-	9449

*NB: there have been some minor changes to the development concept since traffic generation numbers were completed. This will be rectified in the final report.

The existing two access points to the site will have insufficient capacity to accommodate this traffic volume without the introduction of further access points.

4.4.4 The Logistics Precinct – Pavement Requirements

As outlined earlier, there will be several different pavement types for the various vehicle and container storage loading areas within the site. Careful planning and consultation with potential users will be required at the outset to ensure the most appropriate pavement types are adopted throughout the site. Possible changes in future use requirements must also be considered.

Throughout the service life of the facility, all tenants must be made aware of the loading constraints relevant to pavements in their area of the site. This will help to ensure that the pavements remain serviceable for the duration of their design life.

5 Concept Master Plan

In preparing a detailed concept plan for the site, the initial approach has been to define in broad terms the nature of uses that are to be promoted on the site, and establish principles for the development of those uses. This is termed the 'Concept Master Plan'. A more detailed development plan for the site is included in section 6 of this report, and provides a plan of subdivision and possible sites for future development of logistics and related manufacturing activities. The more detailed plan is termed the 'Development Plan'.

5.1 Development Principles

There are a number of important principles relating to the development of the site at a strategic level that need to be taken into account. The overall aim of the development is:

“To create a leading and best practice intermodal terminal and logistics precinct that actively promotes increased rail use while serving as a model for economic viability and sustainability.”

More detailed development principles are set out below relative to the freight focus of the site, the need to achieve economic success, environmental design and built outcomes, and land use approaches. These principles are equally relevant, and there is no relative priority in the order in which they are presented.

5.1.1 Freight Focus

- Development of the site will be focussed on those activities that will increase the efficiency and sustainability of freight moving to, from and within the Latrobe Valley and Gippsland region, and in particular through focussing on integrated land development and rail siding opportunities associated with the GIFT site;
- Activities located on the site that will utilise the rail freight opportunities afforded by the GIFT terminal will be given priority, and in moving progressively away from the rail siding, other activities that are complementary to the overall aim will be considered appropriate and given priority;
- Given the importance of road transport to the region, the integration of road/truck based transport into the precinct to facilitate rail freight movement at the Morwell site will be given a priority to ensure a viable logistics precinct.;
- In order to gain a critical mass and momentum of logistics related activities locating on the site, opportunities for road freight businesses to use land within the precinct will be promoted; and
- Retain an alternative rail access easement to the main site in the event that access to the GIFT site is not available in the future for any reason.

5.1.2 Economic Outcomes

- Maximise the potential for rail freight and logistics activity at the site by encouraging appropriate businesses to locate there, and through the provision of any incentives (either site specific or regional) to capture a proportion of the available freight traffic in the region;

- There will be a focus on creating uses and activities that will generate positive gains for the local economy and employment; and
- Achieve commercially acceptable revenue from development of the land in the context of the environmental and planning constraints of the site.

5.1.3 Environmental, Design and Built Outcomes

- Buildings developed on the site will adhere to strict design guidelines and development controls to ensure a high level of amenity is created on the site;
- Development of the site will utilise best practice for stormwater treatment and take a water sensitive approach to site design;
- Increase the relative proportion of the region's freight imports and exports moving on rail, and thereby manage the potential impact of road freight on the Princes Highway and local towns/roads;
- Develop the site in a manner that recognises the importance of the protection of in-stream values of the Waterhole Creek and floodplain; and
- Development will make a positive visual contribution to the Princes Highway;

5.1.4 Land Use Outcomes

- Land use activities to be developed on the site will be responsive to adjoining land uses and other established uses on the site to minimise the potential for adverse impacts;
- Develop the site to minimise the potential for impacts on adjoining residential areas;
- Provide a range of site sizes to cater for predicted demand, while also encouraging co-location of businesses that will utilise rail;
- Ensure that layout and subdivision proposals for the site enable good circulation of traffic within the site, and manage the impact of traffic onto the road network;
- Ensure that subdivision proposals for the site enable the best use and interaction between activities on the site and the rail siding/GIFT site; and
- Preserve the option for the GIFT site to become a customs bonded area or inland port at some latter stage if this is desirable, through road layout and circulation, building location and service provision.

5.2 Master plan outline

5.2.1 Basis for preparing master plan

The aim of the master plan is to respond to the key issues identified in section 3, provide an indicative model for land use and development that resolves those issues, and to provide an approach that optimises the ability to achieve the development principles set out above. The development principles above are critical in working through either this mater plan, creating a development plan (for example, an indicative plan is included in Section 5) or in developing iterations to the concept over time to respond to changes in the market. While the physical form of development may change, it is important these these development

principles (and the design guidelines presented in Section 5 that elaborate on these principles) are used as the basis to determine the appropriate nature of future development.

The master plan focuses first and foremost on ensuring that the development of the site meets the primary aim - that is, to increase the level of rail freight movement from the Latrobe Valley and Gippsland region.

5.2.2 Components of the master plan

The master plan is comprised of a number of components, some of which may overlap. It is anticipated that any future iteration of either the master plan or a specific development plan would need to include these elements as a minimum. These are:

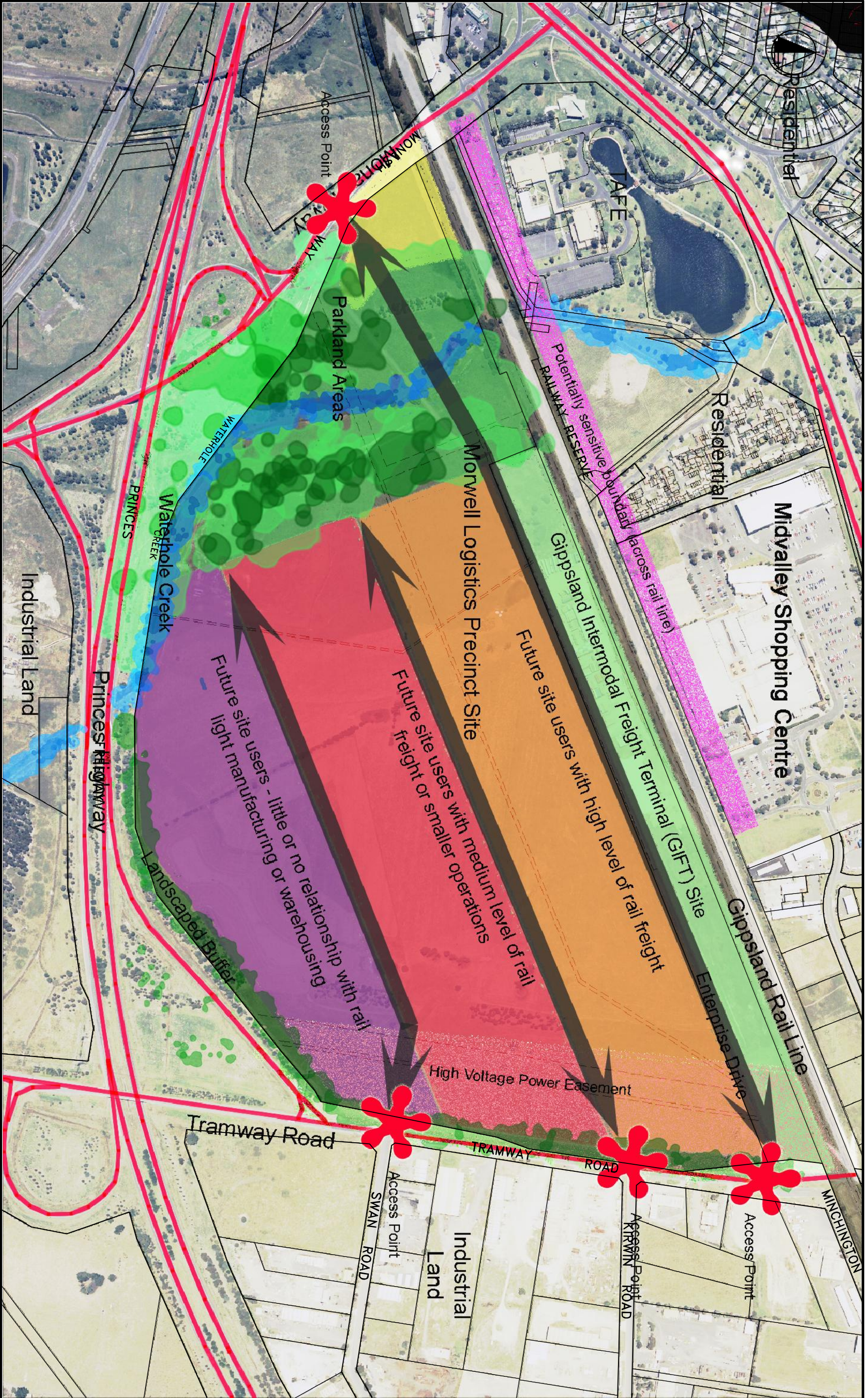
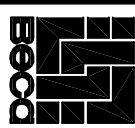
Table 9: Basic Elements of the Master Plan

Area	Activity
A	Main Rail Corridor
B	GIFT Site
C	Development Sites
D	Easements, including an easement to provide an alternative to the GIFT site for rail access
E	Internal Roads
F	Access Points
G	Parkland
H	Secure Area (overlaps with GIFT Site)
I	Stormwater treatment/attenuation (overlaps with parkland)
J	Landscape buffer (overlaps with both development sites and parkland)

5.2.3 The Master Plan Concept

The following diagram presents the master plan, including the above elements. The key features of the master plan include:

- The identification of the GIFT site as a dedicated rail siding serving the needs of the logistics precinct and broader region;
- A graded focus of land use from a high degree of relationship to lesser degree of relationship with the rail siding moving progressively south across the site;
- Key access points on Tramway Road and Monash Way providing for access to the site, the GIFT and cross site circulation and access;
- A landscape buffer around the site, and in particular the road frontages at Tramway Road, Princes Highway and Monash Way;
- An area of parkland set aside for amenity, which will most importantly enable stormwater management objectives to be achieved for both the site and the larger catchment;
- Preservation of the TXU HV power easement, and limited use of this area; and
- Controlled access to the GIFT site being possible in due course should this be required for any reason.



1:5000
0 50 100 150 200 250m

Figure 14
Concept Master Plan

6 Design Guidelines

Design guidelines set out the requirements for the future development of the site. The purpose of the guidelines is to enable some flexibility in the ultimate layout and development of the site, without compromising the primary objectives and development outcomes sought. The design guidelines will be applied to all development on the site.

In achieving the aim for the site, the design guidelines cover a number of topics, including:

- **Industrial Design Guidelines** – these guidelines provide planning and design input for site development, interface with the internal streets on the site, design and placement of services, access points and so forth;
- **Stormwater Management Guidelines** – these guidelines set out the principles for management of stormwater on the site, including taking an approach that reduces the impact of development on the water cycle;
- **Landscaping Guidelines** – set out criteria for the landscaping of key parts of the site, including buffer areas, power easements, stormwater management areas and road reserves, and appropriate species for planting; and
- **Traffic Management Guidelines** – provides guidance on how transport access will be provided to the site, design considerations in the event that alternative approaches to access are taken;
- **Road/Pavement Design Guidelines** – provides clear design and construction guidelines for different pavements and roads within the site based on the anticipated use and wheel axle loads of vehicles using the road network on the site.

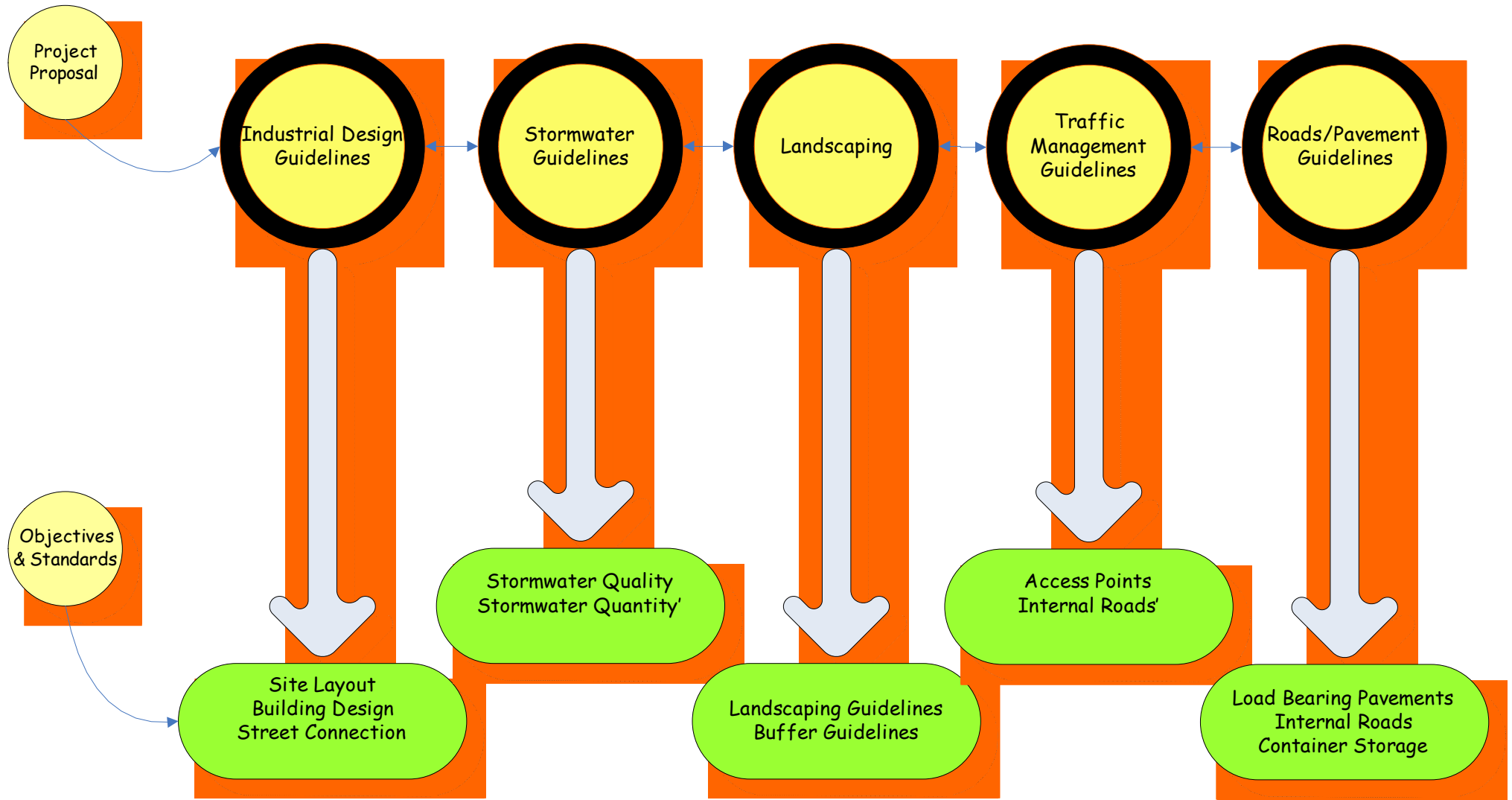
The design guidelines outlined in this section are intended to provide guidance on the nature and form of development, the way in which development is managed, landscaping requirements, road and infrastructure construction requirements.

The means of implementing these guidelines need to be confirmed, however, as Council currently owns and therefore controls the site, there are a number of opportunities that may include:

- Agreements with future developers of sites through the sale and purchase agreements;
- Covenants on any titles created that are sold;
- Implementation through the Planning Permit process, which would require an amendment to the planning scheme – this would be an option undertaken should Council relinquish control and ownership of the site without utilising one of the above options.

The key elements of the design guidelines are shown in the following figure:

Figure 15: Design Guidelines



6.1 Industrial Design Guidelines

The Industrial Design guidelines will apply to all new subdivided or leased sites created within the site. The aim of the Industrial Design Guideline is to “ensure a high quality built environment is created within the precinct”. This is achieved through providing guidance for site layout, building design and street connection.

Site Layout

Site layout applies to the layout and development of each individual site created within the precinct.

Obj. #	Objectives	Std. #	Standards
6.1.1	To ensure that new development responds positively to both the site and its surrounding characteristics.	a.	Buildings should be set back from the front boundary at least 10 metres, and the space between the building and the street shall be designed to create a positive streetscape.
		b.	Buildings should be oriented to the street, not internal parking areas.
		c.	The siting of new buildings should consider the existing built context of the precinct as it develops.
		d.	Building placement should consider solar access to public spaces, including pedestrian areas and walkways.
6.1.2	To ensure that new development provides an attractive and high quality environment that reinforces the precinct’s existing ‘garden city’ image.	a.	Buildings should respect the settings of existing properties in the immediate area through the use of similar setbacks, building arrangements and buffer areas so as to avoid overwhelming building scale and visual intrusion.
		b.	All aspects of development, including, but not limited to, grading, site planning, signage, fencing, landscaping, screening, lighting, color scheme, size, bulk, and height, must be integrated and relate to their surroundings in a complementary manner.
		c.	Buildings should be located to ensure that ‘leftover’ spaces between and around buildings can be practically designed and useable for people/pedestrians at all times of the year.

Building Design

Obj. #	Objectives	Std. #	Standards
6.1.3	To ensure that buildings make a positive contribution to the preferred character of the precinct and to improve its visual character.	a.	Entries to industrial structures should portray a quality office appearance while being architecturally tied into the overall mass and composition of the building.
		b.	Front setback areas must not be used for storage of goods or materials. Exterior storage should be confined to portions of the site least visible to public view.
		c.	New buildings should complement the materials, location and massing of adjacent established developments where appropriate.
		d.	Buildings should employ a variety of complementary colours, textures, forms, styles, structures, and/or materials to create visual interest.
		e.	Walls, or portions of walls facing streets that do not have windows, should include architectural treatment as a means of creating added visual interest.
		f.	Avoid long, "unarticulated" facades where these face the street, public viewing areas or the Princes Highway.
		g.	Facades with varied front setbacks are strongly encouraged.
		h.	Buildings should create varied architecture and avoid flat facades by using recessed or projected entryways, bays, canopies, awnings, and other architectural elements.
		i.	Building rooflines should present a distinct profile and appearance.
		j.	All mechanical equipment on top of buildings or on the ground shall be screened or located so that it cannot be seen from surrounding public streets.
		k.	Buildings should create variety in forms to achieve visual character and interest.

Street Connection

Obj. #	Objectives	Std. #	Standards
6.1.4	To ensure that new development contributes positively to the future high amenity streetscapes.	a.	Public entrances shall be easily identified and distinct from the remainder of the building either through architectural form or the use of colour, material, and texture of the facade.
		b.	Pedestrian access to the building should be visually and functionally clear.

Obj. #	Objectives	Std. #	Standards
		c.	Blank front and side wall elevations on street frontages should be avoided, and those building elevations visible from Princes Highway should be architecturally treated
		d.	All elevations facing the public realm should be architecturally treated.
		e.	Building entries should be protected from inclement weather through the inclusion of an awning and should afford a sense of entry to the building.
		f.	Primary entrances are encouraged to face the street with secondary entrances occurring from parking areas on the side or to the rear of the building.
		g.	Truck docks, loading bays, mechanical and utility areas should be either located at the rear or sides of buildings or screened from the street. Where docks and loading bays are at the front of the site, architectural treatment should focus on minimising the impact on the streetscape, in particular where viewed from the Princes Highway.

6.2 Stormwater Guidelines

This section outlines the stormwater management guidelines proposed for the Latrobe Logistics Precinct. The aim of this stormwater management is:

"To adopt a holistic and integrated approach to stormwater quality and quantity management at site specific and precinct level."

This translates to adopting a stormwater management plan that is:

- Consistent with LaTrobe Stormwater Management Plan objectives and environmental values;
- Recognises local conditions, opportunities and constraints;
- Incorporates physical stormwater infrastructure with other aspects of the development (eg roads and access, visual, and landscaping); and
- Aimed at establishing the Morwell Logistics Precinct as a leading development in Water Sensitive Urban Design (WSUD).

The strategy adopted to meet these objectives is to provide stormwater infrastructure that incorporates the principles of WSUD. To achieve the objectives of WSUD, the following controls are required:

- Natural System Controls (open space around drainage lines, incorporate stormwater management into road design, and on-site stormwater management wherever possible)
- Source controls (rainwater tanks, biofiltration pits, on-site detention);

- Conveyance controls (underground pipes, filtration drains, vegetated swales); and
- End of Line controls (small detention basins and constructed wetlands).

The above controls, when implemented, will manage the water quantity and quality being discharged from the site to ensure that there are no detrimental offsite impacts from the Morwell Logistics Precinct

6.2.1 Objectives

To implement WSUD principles, a set of objectives that all development projects in the precinct must achieve are required. WSUD manages both stormwater quality and quantity and the objectives for both are set below:

a. Stormwater Quality

When considering stormwater quality objectives there are three criteria for target setting.

- 1) Matching post development contaminant levels being discharged through stormwater to pre-developed levels; or
- 2) Applying target levels for introduced contaminant types that are based on best practices and are typically accepted to have no detrimental impact on the receiving environment;
- 3) Applying targets that are appropriate for the receiving environment in this instance Waterhole Creek, or EPA standards for groundwater and freshwater.

The second and third objectives are mandatory. However, the first objective will be considered at Councils discretion as an alternate to the second objective, in instances where land space is not available or other constraints that make the second objective difficult to achieve.

Table 10: Stormwater Quality Targets

Obj. #	Objectives	Std. #	Standards
6.2.2	To ensure that stormwater run-off does not have an adverse effect on the ecological values of the receiving environment.	a.	Litter shall have a reduction of 90% of the average annual load for litter greater than 50mm
		b.	Coarse sediment shall have a reduction of 80% of the average annual load for sediment coarser than 0.125mm
		c.	Total suspended solids shall have a reduction of 80% of the average annual load
		d.	Nutrient loads (indicated by TP, TN) shall have a reduction of 45% of the average annual load
		e.	Total petroleum hydrocarbons (IPH) shall not have any visible oils for flows up to the 3 month peak flow

Obj. #	Objectives	Std. #	Standards
		f.	Other pollutants shall be limited to the maximum extent practical and in accordance with EPA SEPP S-13 (Waters of Victoria)

b. Stormwater Quantity

As greenfield sites become developed, alterations to flow regimes occur which effect downstream habitats and watercourses. Typical alterations include an increase of volume runoff being discharged from site and increases in flowrates. Both of these alterations have the ability to cause erosion and therefore target settings for new developments are required to prevent this from occurring.

The following stormwater quantity target settings are to be applied:

Table 11: Stormwater Quantity Targets

Obj. #	Objectives	Std. #	Standards
6.2.3	To ensure that stormwater run-off does not have an adverse effect on stream flows, stream channel erosion, or people and property downstream and upstream.	a.	The volume of post-developed runoff from the site is to match the pre-developed volume.
		b.	Alterations to natural flow paths, discharge points and runoff volume from the site are to be minimised.
		c.	The post-developed flowrate discharged from the site are to match pre-developed flowrate for all storm events up to the 20 year ARI (including 2, and 5 year events).
		d.	Impervious coverage's for development sites shall not exceed 80%.

c. Stream Management

Table 12: Stream Management Targets

Obj. #	Objectives	Std. #	Standards
6.2.4	To ensure that works on or adjacent to surface waters are managed to minimise environmental risks posed to the aquatic ecosystem and to protect other beneficial uses.	a.	New in-situ structures do not pose a barrier to native fish movement.
		b.	Minimise unnatural erosion and sediment re-suspension.
		c.	Minimise transfer of noxious fauna.

6.2.2 WSUD Treatment Categories

WSUD treatment measures can be grouped into three main categories: primary, secondary, and tertiary. The definitions of these categories are provided in the Victorian Stormwater

Committee: *Urban Stormwater – Best Practice Environmental Management Guidelines*, (Victorian Stormwater Committee, 1999) and is summarised in the table below.

Table 13: Best Practice Environmental Management Guidelines, (Victorian Stormwater Committee, 1999)

Category	Definition	Typical Retained Pollutant	Typical WSUD Measures
Primary (Lot and Precinct Level)	Physical screening or rapid sedimentation technique	Gross pollutants and litter, coarse sediments, free oil / grease	Gross pollutant traps (GPT's), sediment traps, oil/ grit separators, rainwater tanks partially provide screening
Secondary (Lot and Precinct Level)	Finer particle sedimentation and filtration techniques	Fine particles and attached pollutants	Biofiltration trenches, buffer strips, vegetated swales
Tertiary (Precinct Level)	Enhanced sedimentation and filtration, biological uptake, absorption onto sediments	Nutrients and heavy metals	Constructed wetland

6.2.3 Site Specific (Lot Basis) Controls

This section outlines the site-specific controls, at a lot basis, that may be adopted to achieve the quality and quantity objectives. The controls identified for each site will vary depending on site specific constraints.

a. Source Controls

Source controls will be primarily applied at the lot level. The function of the source control adopted is primarily to collect and treat stormwater on individual lots, and retain a portion for reuse.

The general location / use of these is discussed below:

Table 14: Clean Stormwater Planning Framework, Association of Bayside Municipalities, 2004

Element	Potential Benefits	Suitable Site Conditions	Non-suitable Site Conditions	Suitable for Morwell
Rainwater Tanks	<ul style="list-style-type: none"> ■ Storage for reuse. ■ Sediment removal in tank. Flood retardation. 	<ul style="list-style-type: none"> ■ Proximity to roof. Suitable site for gravity feed. Incorporate to urban design. 	<ul style="list-style-type: none"> ■ High rainfall areas with limited reuse potential 	Yes
Gross Pollutant Traps	<ul style="list-style-type: none"> ■ Reduces litter and debris. ■ Can reduce sediment. Pre- 	<ul style="list-style-type: none"> ■ Conventional drainage system 	<ul style="list-style-type: none"> ■ Sites larger than 100ha Natural catchments 	No

Element	Potential Benefits	Suitable Site Conditions	Non-suitable Site Conditions	Suitable for Morwell
	treatment for other measures.			
Biofiltration Trenches	<ul style="list-style-type: none"> ■ Fine and soluble pollutants removal. ■ Streetscape / landscape amenity. ■ Attenuate flows 	<ul style="list-style-type: none"> ■ Flat Terrain ■ Permeable Soils 	<ul style="list-style-type: none"> ■ Steep Terrain. ■ High groundwater Table 	Yes
Buffer Strips	<ul style="list-style-type: none"> ■ Pre-treatment of runoff for sediment removal. ■ Streetscape / landscape amenity 	<ul style="list-style-type: none"> ■ Flat Terrain 	<ul style="list-style-type: none"> ■ Steep Terrain 	Yes

i. Rainwater Tank (Primary)

Runoff from roofed areas is to be directed into rainwater tank/s, where it is to be stored for use for irrigation, and toilet flushing purposes. The rainwater tanks are to be designed and sized so that 20 - 30% of potable water reduction can be achieved.

Overflows from the rainwater tank are to be diverted to either a biofiltration trench or buffer dam or strip (discussed below) for flow attenuation.

ii. Gross Pollutant Traps (Primary)

Gross pollutant traps (GPT) are traditionally a proprietary treatment device for the removal of gross solids within a conventional drainage system. GPT's come in many forms, but all are designed to retain litter and debris from stormwater yet not retard flows considerably. They can be installed in underground pipe systems and are usually installed on pipe outfalls.¹⁴

iii. Biofiltration Trenches (Secondary)

Biofiltration trenches can be located downstream of impervious areas to receive and treat stormwater runoff at source. Biofiltration trenches remove sediments and attached pollutants by filtration through vegetation and sand mediums.

Biofiltration trenches are to be designed so that treated stormwater does not heavily infiltrate to the groundwater table. Stormwater is treated through a bed of selected sand,

¹⁴ Clean Stormwater – A Planning Framework, ABM 2004).

and collected by perforated pipes running along the trench, which is then directed to an underground pit and pipe system.

The biofiltration trenches are to be designed to the criteria stipulated in the stormwater design guidelines in Section 5. Where full compliance with the objectives cannot be met, the residual treatment is to be provided by end of pipe system.

iv. Buffer Strips (Secondary)

Buffer strips are an alternate at source stormwater treatment device to the biofiltration trenches. Buffer strips are a wide grassed or vegetated filter capable of treating shallow overland flow before it enters a drainage network. Coarse pollutants are retained in the vegetation, while flows pass downstream (Clean Stormwater – A Planning Framework, ABM 2004).

v. On-Site Detention

On-site stormwater detention (OSD) is to be provided on the individual lots. OSD's mitigate for increased flowrates as a result of additional impervious areas being constructed.

OSD's are to be designed in accordance with the criteria outlined in Section 5. The storage of runoff can be located partially in rainwater tanks, extended detention in the on-lot biofiltration system, and the residual in a concrete or drainage cell prior to the discharge outlet of the lot.

b. Conveyance Controls

Conveyance controls are generally applied to the stormwater system that will transport treated stormwater runoff to the downstream discharge point for the individual lot. Whilst stormwater conveyance is the prime objective, the quality of runoff is improved in transit.

The conveyance control proposed for on-site applications comprise of vegetated grass swales and underground pipe system.

i. Vegetated/Grass Swales (Secondary)

Vegetated/grass swales are to be provided on the downhill side of access roads, carparks and other impervious areas where possible.

The swales act as water quality controls for flows up to and including the 3 months design flow, which is approximately 90% of the mean annual runoff. Pollutants are removed by biofiltration processes as discussed above.

For events larger than the 20 year ARI and up to the 100year ARI storm, flows are shared between the swale and underground pipe system (discussed below). Since pipes and pit inlets are designed to have a minimum capacity of the 20 year ARI flow. The swales are designed for a capacity equal to the 100 year ARI flow.

ii. Underground Pipe System

Underground pipes are to be located beneath the vegetated/grass swales, on the low side of access roads and impervious areas. These pipes will collect and convey treated runoff from the on-lot biofiltration trench to the off-site discharge point. A number of pits are located along the underground pipe to collect surface flows from swales.

The underground pipes and pits are to be designed to cater for the 20 year ARI storm event and are to be designed to be self cleaning. A hydraulic grade line analysis is to be undertaken to minimise surcharge and ensure an efficient hydraulic design.

6.2.4 Precinct Control

This section outlines the controls to be adopted at a precinct level.

a. Source Controls

Source control at a precinct level will be adopted for the treatment of roadways only.

i. Gross Pollutant Traps (Primary)

GPT's are to be located at the end of pipe and swale systems for the proposed road to capture and retain litter and debris.

ii. Biofiltration Trenches (Secondary)

Biofiltration trenches are to be located downstream of roads where possible to receive and treat stormwater runoff at source.

b. Conveyance Controls

Conveyance controls at a precinct level generally apply to the stormwater system that will transport treated stormwater runoff from all the lots and the roadways to the end of line control.

i. Vegetated/Grass Swales (Secondary)

The use of vegetated/grass swales to convey road runoff is to be maximised where possible and are to be provided on the downhill side of the roads.

For events larger than the 20 year ARI and up to the 100 year ARI storm, flows are shared between the swale and underground pipe system (discussed below). Since pipes and pit inlets are designed to have a minimum capacity of the 20-year ARI flow, the swales are designed for a capacity equal to the 100-year ARI flow.

ii. Underground Pipe System

Underground pipes are to be located beneath the vegetated/grass swales, on the low side of road ways. These pipes will collect and convey treated runoff from biofiltration trenches to the end of line control. Pits are to be located along the underground pipe to collect surface flows from swales.

The underground pipes are to be designed to cater for the 20 year ARI storm event and are to be designed to be self-cleaning. A hydraulic grade line analysis it to be undertaken to minimise surcharge and ensure an efficient hydraulic design.

c. End of Line Controls

End of line controls are included to provide the residual treatment and detention storage required for the precinct. Generally, the size of the end of line control should be minimised by implementation of upstream controls.

i. Constructed Wetlands and Extended Detentions (Tertiary)

Constructed wetlands are to be provided along drainage paths and in the downstream point prior to discharge from the precinct. The wetlands supplement the treatment of

stormwater provided at the lot level and roadways to ensure the mean annual pollutant loads meet the criteria stipulated in Section 5.

The wetlands are to be designed so they provide an additional on-site detention to supplement the storage that could not be achieved in the lot level.

The outlet of the wetland is to include a high-flow spillway that bypasses flows greater than the 100 year ARI flood. An energy dissipator is required to be located downstream of the outlet to reduce flow velocities and minimise the risk of erosion downstream of the outlet. Wetlands are to be designed to allow earthmoving equipment access to the internal base of the wetland for maintenance purposes on an as required basis.

6.3 Landscaping Guidelines

There are four key areas within the site that require different treatment from a landscape perspective. These include:

- Landscape buffer areas (or the Freeway interface)
- Power Easement
- Stormwater Management Areas
- Road/private property interface

Future designs undertaken for the site, including proposed plant species should reflect the different requirements of each of these areas.

Design Standards

Obj. #	Objectives	Std. #	Standards
6.3.1	To create a distinctive landscape theme and high quality amenity within the precinct.	a.	Landscaping should be provided within front and side setbacks to the street, to car parking areas and around outdoor goods storage areas.
		b.	Landscaping should be provided along rear and side boundaries, particularly those which are visible from a more sensitive use or are visually prominent (i.e. from an adjoining road or Princes Highway).
		c.	Landscaping should be used to reduce the visual impact of large parking areas or other areas of pavement (e.g. for hard standing/freight storage).
		d.	Landscaping around the base of new buildings should be undertaken to soften the edge between parking areas and the building with accentuation at building entries.

Obj. #	Objectives	Std. #	Standards
		e.	Landscaping should be protected from vehicular and pedestrian encroachment by raised planting surfaces, depressed walks, or the use of curbs. Where screening is required, a combination of elements should be used including solid masonry walls, berms, and landscaping. Chain link fencing with wood or metal slatting is an acceptable screening material only for areas of a lot not visible from a public street.
		f.	A minimum 1.5 metre wide landscaped area between car parking and buildings/side property boundaries should be provided to achieve a visual contrast and ensure safe vehicular movements.
		g.	Large areas set aside for car parking should include landscape islands to allow the planting of shade trees and shrubs.
		h.	Existing vegetation should be retained and located within landscaped areas wherever possible.
		i.	Use landscaping to maximise permeable surface areas.
6.3.2	To design landscaping and site to consider the total water cycle and minimise water usage.	a.	Landscape materials should consist of drought resistant plant varieties complementary to the area.
		b.	Rainfall run-off should be used to water landscaping where possible.
6.3.3	To ensure the potential negative impacts of replanted vegetation are minimised.	a.	Where adjoining properties may be impacted detrimentally by proposed landscaping, the aim shall be to minimise or avoid overshadowing or the creation of unacceptable ongoing maintenance problems.
		b.	Vegetation that could grow over 3m in height will not be permitted to be planted within the SPI easement.
		c.	Each landscaped area will require an active management plan to be in place for a minimum of 3 years to ensure establishment.
		d.	Those sites that include a 20 metre minimum landscaped buffer will include the landscape and management plan in any development permits for the site, and will ensure that the planting regime is consistent with this master plan and adjoining properties.

6.4 Pavements

There are various road and pavement related issues to be considered in the design process

- Road uses;
- Compliance with relevant standards and Council Design Guidelines;
- Coordination with stormwater concepts;
- Design to cater for both current and future needs.

The following objectives are adopted for the site, but should be closely reviewed through the design process to ensure pavement standards are suitable for the intended use (e.g. axel loads and container stacking practices). These are guidelines only at this stage.

Obj. #	Objectives	Std. #	Standards
6.4.1	To design road pavement compositions so they are suitable for the intended use.	a.	Separate pavement types according to loadings to ensure the most economical and appropriate pavement design is adopted.
		b.	Adopt VicRoads standard material types which also meet Council design guidelines.
		c.	Design pavements to accommodate the potential mix of future uses.
		d.	Compliance with industry and council specific design guidelines.
		e.	High use areas of Heavy Duty Pavements should accommodate axel loads up to 50 tonnes.
		f.	Access Road Pavement should be designed consistent with VicRoads limits.
		g.	Medium use areas of Heavy Duty Pavements should be designed consistent with VicRoads limits.

6.4.2 Council Design Guidelines

The Council design guidelines relevant to roads need to be observed for this development. Further discussion and agreement with VicRoads will be required where they differ, however at this point, Council standards have been used. Relevant Council Standards are summarised below:

a. Site Access Roads

- The minimum pavement width for roads servicing industrial subdivisions is 12.0m between kerbs;
- Design life is to be 50 years;
- Asphalt surface shall be size 14, Type H, with a minimum thickness of 40mm;

b. Pavement Design

- Flexible pavements to be designed in accordance with AustRoads guidelines;

6.5 Traffic Management

Obj. #	Objectives	Std. #	Standards
6.5.1	To ensure traffic can move into and around the site with ease'	a.	Internal roads should be constructed to a minimum pavement width of 12 metres sufficient to allow two way traffic flow by heavy vehicles in addition to parallel parking on both sides of the road or the provision of turning lanes.
		b.	At all intersections and 90° bends proposed on the internal road network within the site, an internal radius of 15 metres should be provided to allow heavy vehicles to undertake left turns without encroaching across the centre-line.
		c.	Where the internal cross intersection is proposed, give way signs and holding lines should be provided facing the north-south road, which will be the minor approach, to clearly indicated that north-south traffic is required to give way.
		d.	The internal road layout should be designed in a series of loops to ensure that heavy vehicles will not need to reverse at a dead end.

7 Development Plan

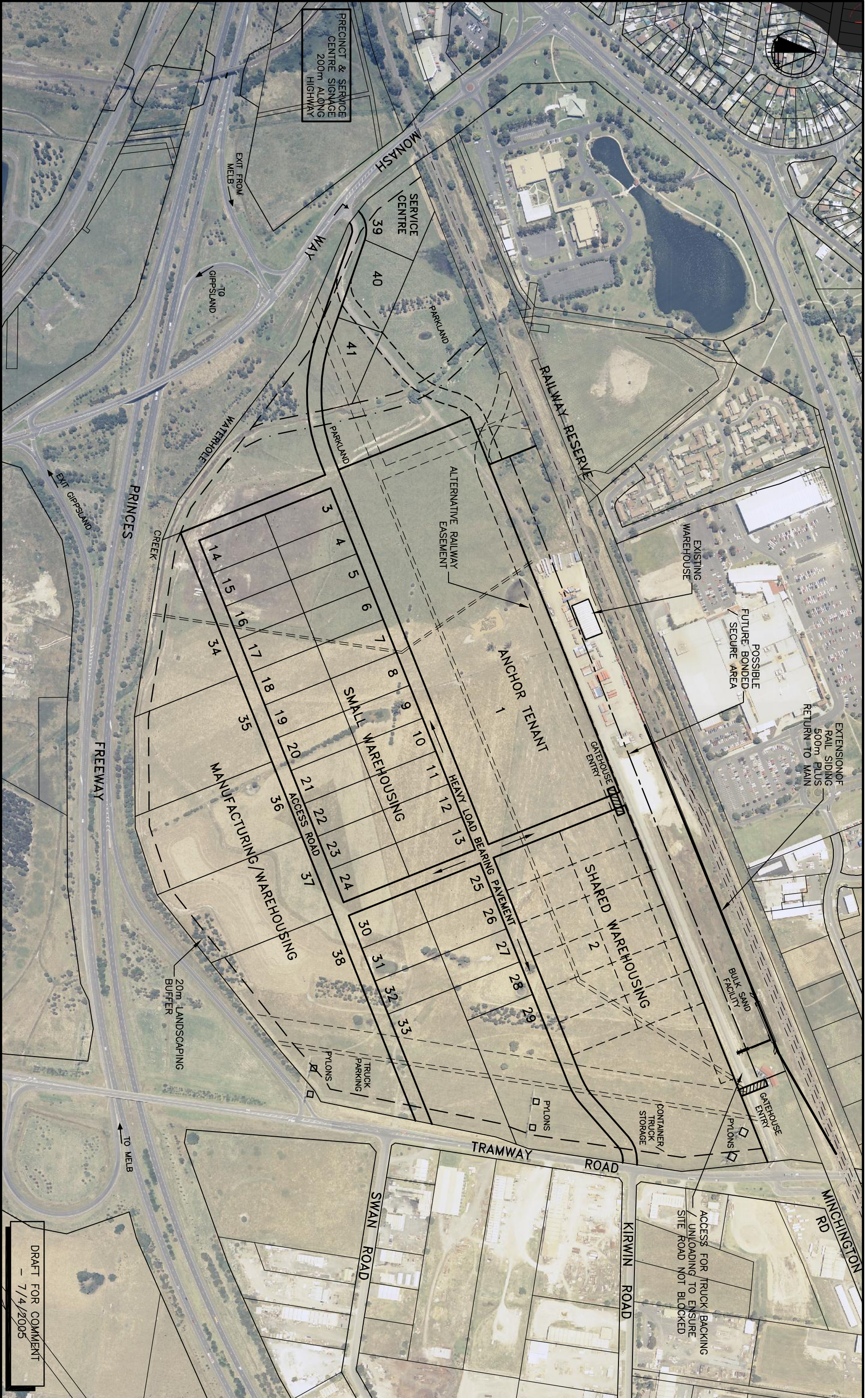
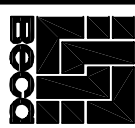
The development plan for the site (see Figure 21) has been prepared on the basis of the development principles set out in the master plan, and the design guidelines in the previous section. The Development plan includes a subdivision concept that is based on servicing the potential opportunities arising from projections for the freight task for the Latrobe/Gippsland region and anticipated opportunities arising from significant freight users. This information has been derived in part through preliminary discussions with some potential users. It should be stressed that the development plan offers **one** means of delivering the outcomes sought by Council, and that the development sites and approach to servicing may change as opportunities become definitive.

The development plan has a number of basic components. These are:

- GIFT site;
- Small warehousing / industrial sites;
- Large warehousing and logistics sites, including an 'anchor tenant' site and potential 'shared warehousing' site;
- Light manufacturing / Warehousing;
- A service centre at the western side of the site;
- Parkland, including stormwater treatment devices
- Roads

The development plan makes a number of assumptions on the basis that a number of key technical issues have not been investigated (as this needs to be as part of a detailed design stage), and form development prospects (i.e. tenancies) can not be identified as yet. The servicing of the site provides for power, gas, water, wastewater, and telecommunications.

The following diagram identifies an indicative subdivision layout:



1:5000

0 50 100 150 200 250m

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Figure 16
Development Plan

7.1 Development Sites

The Development Plan identifies a potential for some 41 development sites, ranging in size from 5000m² (or half a hectare) to 114,000m² (or 11 hectares). The total area of the site is approximately 70 hectares, of which approximately 56ha is proposed for development. An additional 5.8 hectares is set aside for roads, with the balance being parkland of 7.6 hectares. The GIFT site is included in the discussion of much of this report, however, the site is not available for development under the same conditions, as this land is not owned or controlled by Council. The GIFT site is approximately 6.5ha in area.

The following table provides a summary of the areas of each site:

Table 15: Development Sites

Site #	Area (m ²)	Proposed/Possible Use	Building Area	Site Coverage (%)
1	114,000	Anchor Tennant / Warehousing / Freight Handling and Storage		80
2	99,560	Shared warehousing (or alternative small 5000m ² lots). *		70
3 - 24	5,000	Warehousing		80
25 - 28	5,000	Warehousing		80
29	24,100	Warehousing / Trucking*		60
30 - 32	5,000	Warehousing		80
33	20,070	Warehousing / Trucking*		60
34	20,120	Light Industry Manufacturing / Warehousing*		80
35	23,880	Light Industry Manufacturing / Warehousing*		80
36	24,770	Light Industry Manufacturing / Warehousing*		80
37	23,780	Light Industry Manufacturing / Warehousing*		80
38	40,030	Light Industry Manufacturing / Warehousing *		80
39	8,760	Service Centre		80
40	8,010	Service Centre/Logistics		80
41	7,060	Service Centre/Logistics (expansion or complementary use e.g. truck washing/parking).		80
Parkland	76,230			5
Roads	58,921	(Note that this is the road reserve, not the area of pavement proposed. We have also		90
GIFT	65,155	This site includes the existing siding, proposed future siding extension, proposed bulk sand facility, general freight and freight storage and handling. Note that this site is not in Councils ownership.		90

* Property includes 20m-landscaped/buffer strips.

7.2 Activities Identified on the Site

7.2.1 Rail siding and Freight (GIFT Site)

The GIFT site is clearly critical to the development of the Morwell Logistics Precinct. As noted previously, decisions over the future management of the site are complex as a result of negotiations between PacNat and the Victorian State Government over the lease.

Key features of the design and management of this area include:

- The GIFT site includes the current rail siding plus a rail siding extension of some 500m;
- The GIFT area may be secured in future, and hence fencing, gatehouses and other related security provision will be required;
- The site may need to include space for a cripple line;
- Provision of flexibility to allow dual gauging at some future point;
- Options to enable the development of a bulky goods (e.g. sand, fertiliser) loading and unloading facility directly atop the rail siding;
- Potential for future inland port development, including meet AQIS requirements, which will need to be defined and agreed;
- Siding working area for loading and unloading alongside the rail siding which is at least 30m wide, to provide sufficient future flexibility for loading/unloading and container stacking;
- Small office / staff room / amenity block (to be identified)
- Direct loading (via SKEL/Forklift) or access from large adjoining distribution centres / warehouses operated by anchor tenants, if this is required by major or anchor tenants.
- Provision for limited warehousing and freight storage (including containers) within the GIFT site

7.2.2 Anchor Tenants

a. Large freight 'anchor' tenant

An anchor tenant will likely provide the catalyst for the development of the site. Without an anchor tenant, it is unlikely that a sufficient volume of freight would be achieved, and the risks associated with developing the first stage would be too significant. Sites 1 and 2 are large sites, and could both accommodate a warehouse in the order of 35,000m² in size. The exact nature of the activities on these sites would vary depending on who the tenant is, but clearly freight movement and storage must be a key component (either now or in the short term future).

b. Shared Warehousing

Shared Common Warehousing provides an opportunity for the development of an integrated logistics facility that utilises the opportunity afforded by proximity to the rail siding. The shared warehousing concept has been identified in reaction to the general perception in the market of a shortage of warehousing in the Latrobe Valley. While this

shortage may exist,¹⁵ it may not be cost effective for some companies to develop their own sophisticated warehousing or logistics solutions. In this instance, shared warehousing – operated by an independent third party or service provider, provides an opportunity in the Latrobe market. The benefits to customers may include:

- Full logistical infrastructure
- No capital investment
- Minimal administration
- Optimised costs against variable supply chain demands at all levels, allowing businesses to focus on their ‘core business’ such as sales and marketing.

7.2.3 Transport Companies

The future successful development of the logistics precinct is likely to create opportunities for trucking companies or others involved in transportation of freight. It is anticipated that some sites may be attractive to existing transportation companies in the Latrobe Valley. Those sites on the eastern side of the site that are affected by the SPI easement may be an appropriate location for such activities, in particular where truck parking might occur within the easement area, with agreement from the power company depending on the nature of that use.

7.2.4 Light Industry / Manufacturing

There are a number of sites at the south of the precinct that have little relationship with the rail siding, except that there may be some form of direct road access for SKELs to move freight in small volumes. It is anticipated therefore that these sites would provide for light industry and/or manufacturing, with businesses utilising the rail siding on a regular basis but with smaller freight volumes than anchor tenants.

7.2.5 Small Scale Warehousing

Small warehousing / industrial sites – there are a series of smaller 5000m² sites identified, which provide for a potential gap in the market – that is, warehousing. The sites have been demarcated to allow any future prospective tenant to amalgamate 2,3 or more titles to provide a site large enough to meet future tenant requirements. These sites are all fully serviced, with the exception of gas, which is only provided to some lots in the southern portion.

7.2.6 Service Centre

A Service Centre located at the site shown on the master plan has been canvassed with a potential service station operator/retailer. There is significant interest in the site, which if/when available would be a high priority for acquisition for a service centre operator who was interviewed during the course of this project.

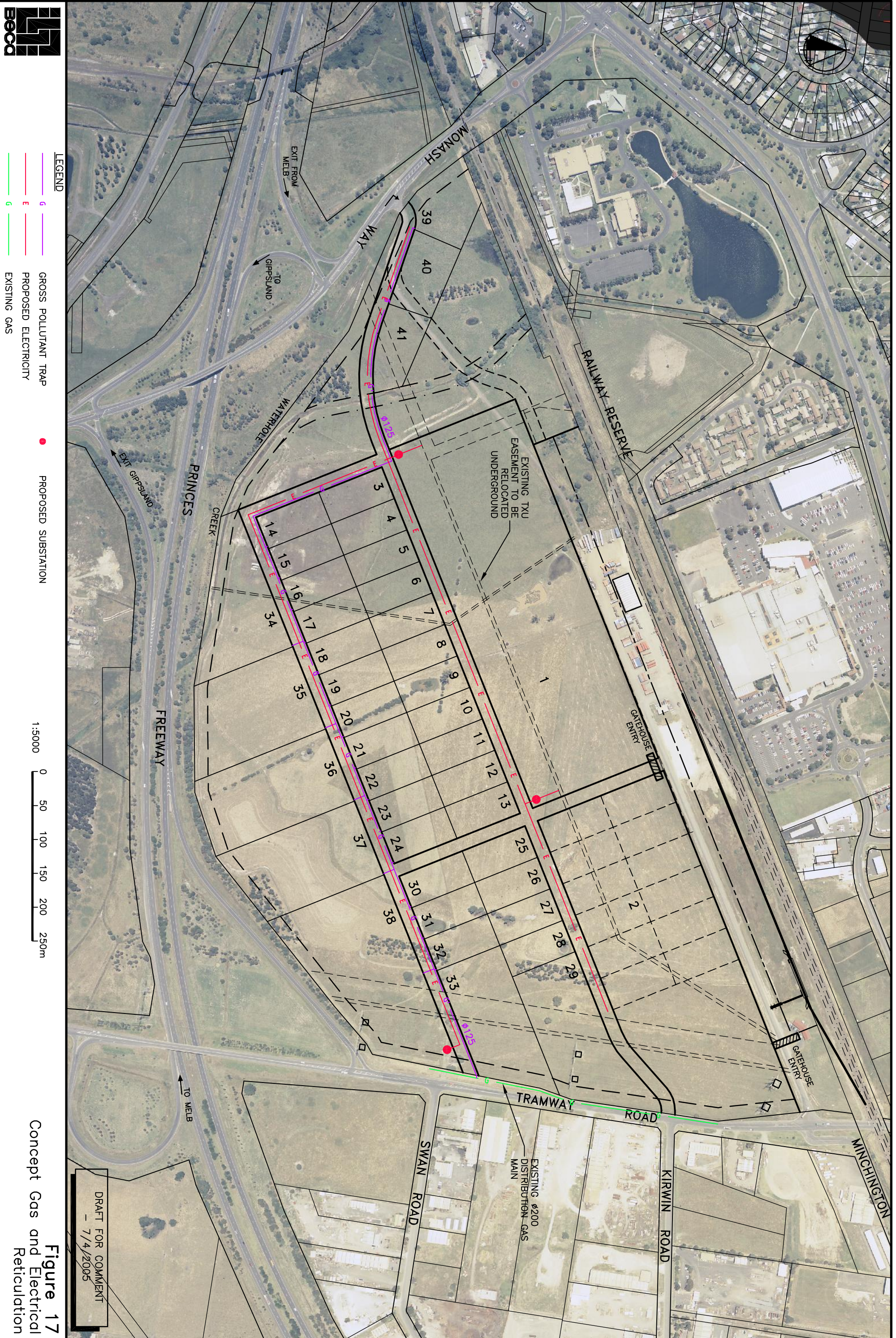
¹⁵ The project brief has not involved independent market testing or investigation of demand/shortfalls in supply.

There are a number of key issues or requirements for the development of the service centre, which need to be resolved:

- Determining whether the access point at Monash Way is a declared highway, and therefore the service centre would be considered a 'Freeway Service Centre' and require the approval of VicRoads.
- The timing for the development of a full set of services at the service centre site would be largely dependant on two key markets. Firstly, the retail market captured at Morwell and from the Princes Highway. Secondly, the truck market created through the successful establishment of the Morwell Logistics Precinct. Therefore, there may be some uncertainty on the range of services to be offered at the site.
- Adequate provision of signage at appropriate locations along the Princes Highway to enable the service centre to attract customers.

7.3 Works Requirements – Utility Services

The purpose of this section is to set out the works requirements for the development of the site with respect to utility services, that is, power, water supply, wastewater, telecommunications and gas. These cover the utility services provided to the boundary of each proposed site, and are shown in the following figure:

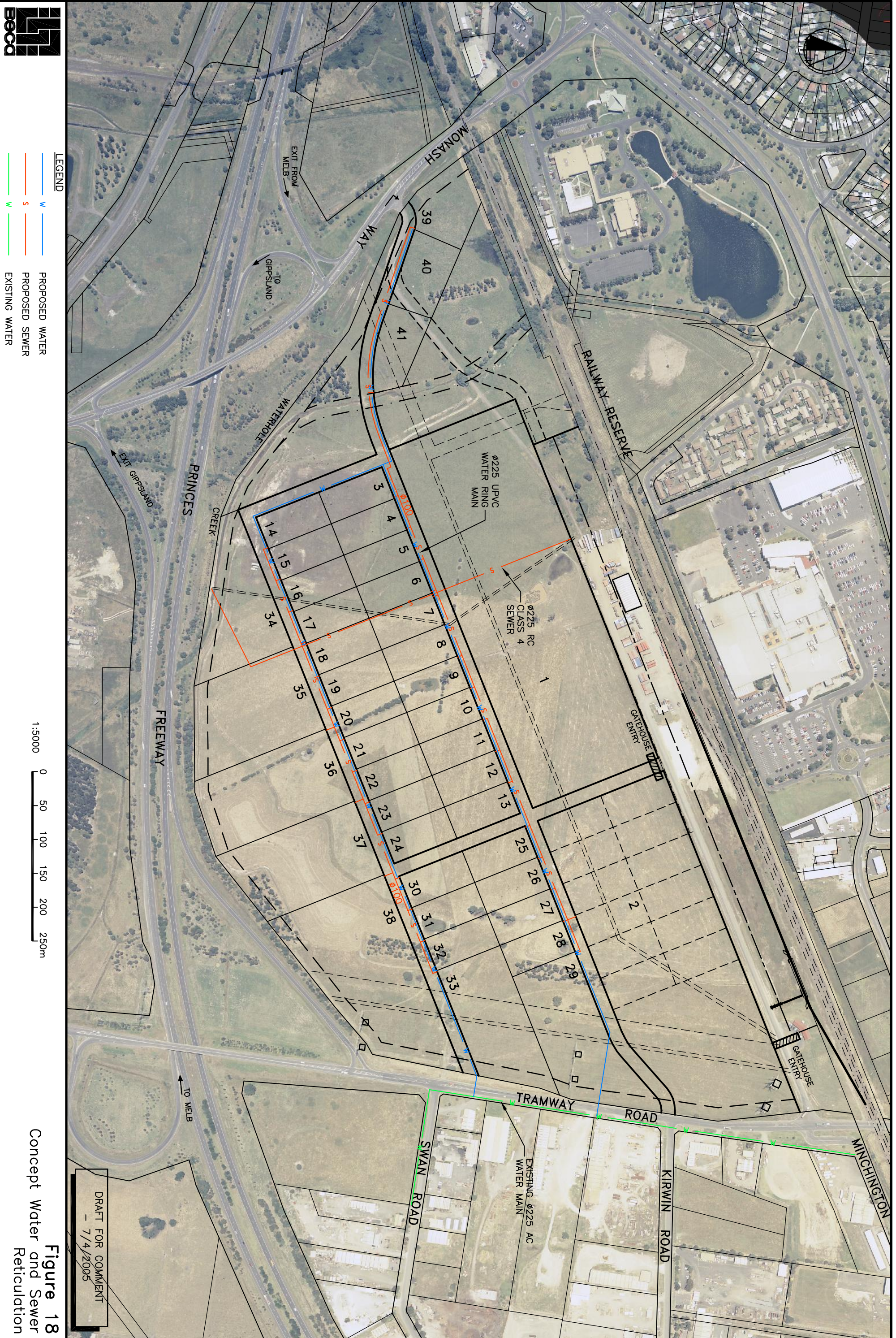


- LEGEND**
- GROSS POLLUTANT TRAP
 - PROPOSED ELECTRICITY
 - PROPOSED GAS
 - PROPOSED SUBSTATION
 - EXISTING ELECTRICITY
 - EXISTING GAS

1:5000
 0 50 100 150 200 250m

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Figure 17
 Concept Gas and Electrical Reticulation



LEGEND

— PROPOSED WATER
— PROPOSED SEWER
— EXISTING WATER

1:5000

0 50 100 150 200 250m

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Figure 18
 Concept Water and Sewer
 Reticulation

7.3.1 Power

a. Existing Services

TXU have an overhead 22kV high voltage line that crosses the site from east to west. This line needs to be relocated underground. Careful consideration needs to be given to moving the 22kV line south so it is adjacent to the east west road reserve, making Lot 2 more saleable.

The site also has high voltage lines running along the west side of Tramway Road.

b. Proposed Network and Design Requirements

The concept design is based on low use basis, with no mass refrigeration or conveyor systems within the development. The design needs to be to the satisfaction of TXU, the relevant authority.

c. Works/Construction

Three 200kW substations have been proposed to provide low voltage electrical reticulation across the site. They should be located evenly across the site. It is likely that road boring under Tramway Road will be required at least at one location.

Distribution pillars would be shared between two adjoining lots.

The existing overhead high voltage 22kV line will be moved underground, complete with cable head structures at either end.

- Undergrounding existing overhead 22kV - \$200,000
- Connection of substations to HV @\$50,000 x 3 - \$150,000
- Provision of 200kW substations @\$80,000 x 3 - \$240,000
- Add LV reticulation and pillar boxes

d. Assumptions

The following assumptions have been made:

- No survey information has been provided;
- The number of substations required has been based on a load of 20 watts per / m² and a site yield of 60%;
- Connection to the existing electricity network is subject to TXUs review and approval.
- Relocation of the existing TXU easement by relocating the existing overhead high voltage service has not been costed.
- Road lighting has been included in the roads section of this document.
- All services will be constructed prior to the construction of the internal roads.

7.3.2 Water Supply

a. Existing Services

Although plans provided by Gippsland Water show that there is no connection to the site, the existing warehouse is presumably connected.

b. Proposed Network and Design Requirements

The water supply requirements of the site are likely to be governed by the fire servicing to each lot, which will also provide mains water to each lot. A conservative approach to network design and pipe sizing has been taken as the specific details of the development on each lot is unknown at this stage.

Gippsland Water has verbally stated that the existing 225mm diameter water main located in Tramway Road needs to be fully reviewed prior to approving connection off it due to its age and current condition.

Development costs associated with upgrading this main may be required by the water authority.

The design of the service needs to comply with AS 3500: National Plumbing and Drainage – Water Supply – Performance Requirements and to the satisfaction of Gippsland Water.

c. Works / Construction

A 225mm diameter uPVC Class 16 underground ring main running along the south access road and the north access road, complete with backflow prevention valves and isolation valves will service all lots. Lot connections have been assumed to be 150mm diameter but this is dependent on the final lot development size and type.

Raw water supply will also be connected to this ring main and be separately metered.

d. Assumptions

The following assumptions have been made:

- No survey information has been provided
- Water supply has been designed at the concept stage on the basis of dry industry only, average lot densities and low rise buildings.
- Connection to the existing water supply network is subject to Gippsland water's review and approval.
- No development costs associated with upgrading the water network to the site has been allowed for.
- All services will be constructed prior to the construction of the internal roads.

7.3.3 Waste Water

a. Existing Services

Although plans provided by Gippsland Water show that there is no connection to the site, the existing warehouse is presumably connected. Gippsland water have an easement running north – south through the site but is currently disused.

b. Proposed Network and Design Requirements

The design of the wastewater system needs to comply with WSA Sewerage Code of Australia and to the satisfaction of Gippsland Water.

c. Works / Construction

A network of 100mm diameter reinforced concrete pipes connected to a spine of 225mm diameter Type 1 Class 4 pipes has been designed, together with three interconnecting

sewer pits. The existing easement should be re-routed to align with the orientation of the lots.

A package pump station has been allowed for.

d. Assumptions

- No survey information has been provided
- One pump station has been allowed for as the site appears to have minimal fall on it.
- Wastewater services have been designed at the concept stage on the basis of dry industry only.
- The wastewater loads have been calculated based on WSA Sewerage Code of Australia..
- Connection to the existing wastewater network is subject to Gippsland Water's approval.
- No special provisions for the treatment of trade waste has been allowed for.
- A connection point to the surrounding wastewater network has not been able to be confirmed with Gippsland Water. It has been assumed that the connection point is at the site boundary within the existing easement. No cost allowance beyond the site boundary has been allowed for at this stage.
- All services will be constructed prior to the construction of the internal roads.

7.3.4 Telecommunications

No comment has been received as yet from Telstra to confirm the Telecommunications requirements for the site. It is noted that telecommunications are critical for all likely future logistics tenants. However, we note that servicing the site is unlikely to be problematic, and advice earlier in the project indicated that Telstra may provide services to the site at no cost in recognition of future potential clients. We note that servicing the site with fibre optic capability is unlikely to be problematic.

7.3.5 Gas

a. Existing Services

There is currently no service to the site.

b. Proposed Network and Design Requirements

Warehousing type developments do not typically use a gas service and as such one has only been provided along the south access road. This access road will potentially service manufacturing uses and some small warehousing lots.

The design and construction of the service needs to comply with Australian Standard 5601 – 2004: Gas Installations and be to the satisfaction of Origin Energy.

c. Works/Construction

Origin Energy have suggested a 125mm tapping to their 200mm line with 50mm connections to each lot, complete with isolation valves. The serviced lots have been assumed to be 14 through 24, 30 through 33 and 35 through 39, 20 in total.

d. Assumptions

The following assumptions have been made:

- No survey information has been provided
- Gas reticulation has been designed at the concept stage on the basis that it is provided to low use lots on both sides of the southern access road only
- Gas reticulation has been capped at the property boundary.
- All services will be constructed prior to the construction of the internal roads.

7.4 Works Requirements – Stormwater Management and Drainage

a. Existing Services

To the west of the site, Waterhole Creek traverses through the site. Whilst there is no contour survey of the site, it is assumed that a large portion of the site would currently discharge to the creek by way of overland flow. The extent of floodplain that potentially affects the site is also unknown at this stage, and is subject to an alternative Council study for Waterhole Creek. The results of that study may affect this master plan. To the east of the site there is an existing stormwater drainage network along Tramway Road. This stormwater system may currently cater for a small portion of the site.

b. Proposed Works

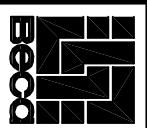
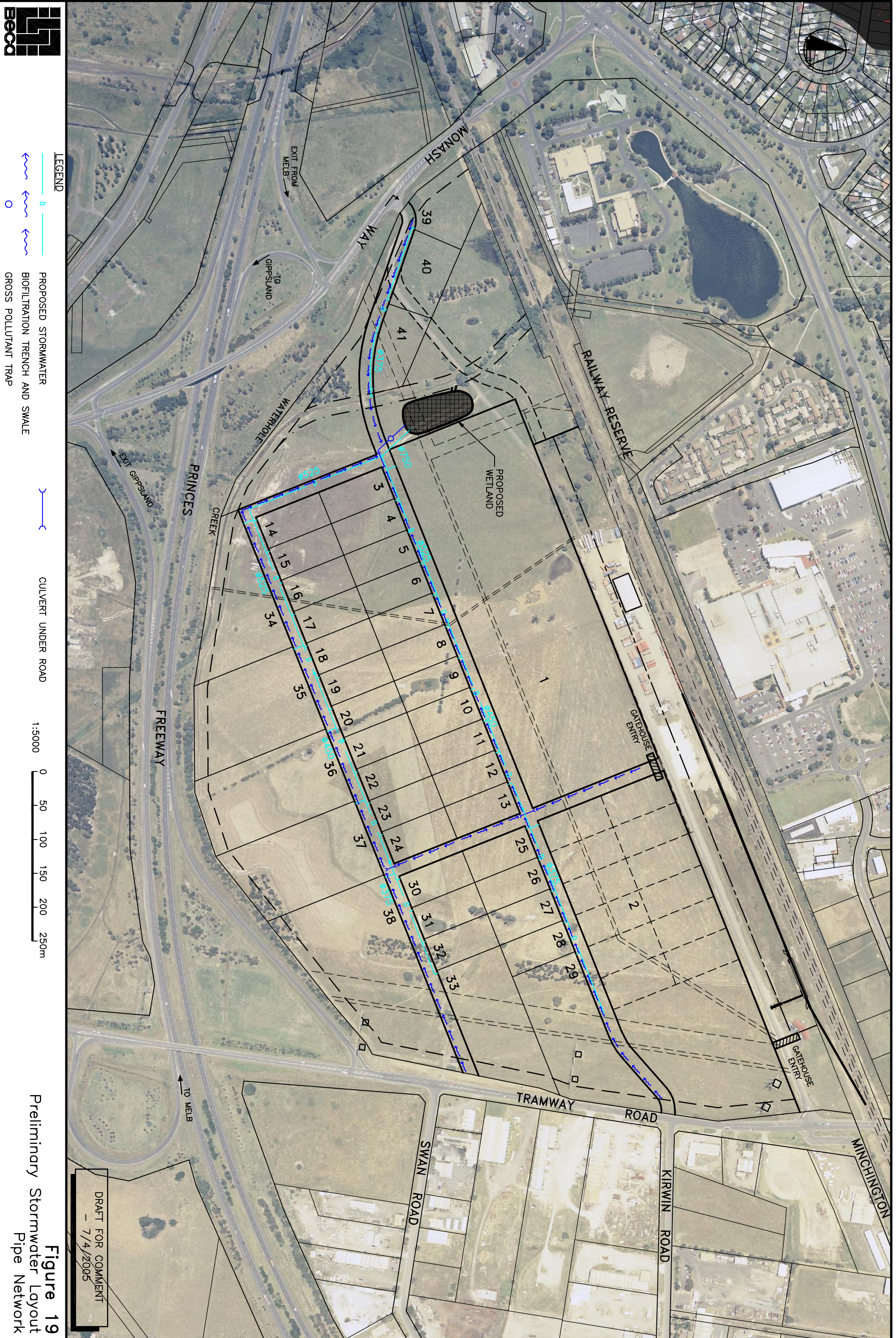
Stormwater modelling was undertaken using MUSIC. Developed by the CRC, MUSIC provides the ability to simulate both quantity and quality of stormwater runoff from various catchment types. In the modelling, the site coverage's were inserted as those presented in Table 13. Various stormwater treatment devices and sizes were modelled until the stormwater targets set in Section 5.3 were achieved. The following discusses the stormwater treatment Council will need to implement in order to achieve the stormwater targets.

The development will require the construction of biofiltration trenches / swales along the road reserves to collect and treat runoff from roadways. A gross pollutant trap will be required to capture litter from surface flows that do not infiltrate through to the biofiltration trench and are transported by the swale. Stormwater pipes under the road reserves are to be provided to collect treated runoff from individual lots and roadways, and convey to the downstream wetland. It is to be noted that each lot will have their own individual stormwater treatment system. A wetland is to be constructed in the designated parkland area on the eastern side of the site. The wetland is to be approximately 4,500 m² and 2 metres in depth.

c. Assumptions

- No survey information has been provided;
- It is assumed the entire site drains towards Waterhole Creek;
- Connection to Waterhole Creek will be subjected to Councils approval;
- As there were no geotechnical data for the site, it was assumed the soils had some capacity for infiltration;

- All pipe work and wetland will be constructed prior to the construction of the internal roads. The wetland can be utilised as a sediment basin during construction.

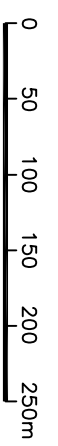


LEGEND

- PROPOSED STORMWATER
- ~ BIOFILTRATION TRENCH AND SWALE
- GROSS POLLUTANT TRAP

- CULVERT UNDER ROAD

1:5000



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- 7/4/2005

Figure 19
Preliminary Stormwater Layout
Pipe Network

7.5 Works Requirements – Roads and Access

7.5.1 External Road Improvements and Access Points

To accommodate the additional traffic volume, it is proposed to construct two additional access points to Tramway Road, with the existing access points to remain. It is anticipated that most heavy vehicle traffic generated by the proposed development is likely to access the site via Tramway Road as this is closer to where most existing industrial areas within Morwell are currently located. However the Monash Way access will still be necessary for heavy vehicles travelling to and from Traralgon prior to the east facing interchange at Tramway Road being constructed.

It is proposed that the two new access points to Tramway Road should be located opposite the existing Kirwin Road intersection (forming a cross intersection) and at a point approximately 50 metres to the north of the existing intersection at Swan Road.

The existing access to Monash Way which currently leads to the rail siding area should be redirected towards the main part of the site to provide a more direct access. There will be two controlled entrances to the rail siding area; one via the existing Tramway Road access and the other via an internal connection to the main part of the site. The latter connection will also provide access through to Monash Way.

a. Traffic Signals

Our analysis indicates that traffic signals will ultimately be required at one of the access points to Monash Way to accommodate the expected traffic volumes generated by the site. We suggest the signals should be located at the cross intersection with Kirwin Road, which will also provide a benefit to the existing industrial estate to the east of Tramway Road.

Although the traffic generation from the development is unlikely to require the traffic signals in the initial stages, given the high proportion of heavy vehicles expected to use the access, it is suggested that the traffic signals be installed from the outset to provide a high standard of access and attract business to the site.

With signalised access provided to Tramway Road, we expect it would attract most traffic generated by the site, with less traffic using the remaining two access points to Tramway Road and the access to Monash Way. We are satisfied that the remaining access points can remain unsignalised following the full development of the site.

The existing and proposed unsignalised access points to Tramway Road will benefit from the proposed signals at Kirwin Road and also at the future full freeway interchange which will create gaps in the traffic flow. The Monash Way access will benefit from gaps created by the existing traffic signals located at the Princes Freeway interchange.

b. Monash Way

The Monash Way access to the site will require upgrading in order to accommodate the expected traffic generation from the development.

Although traffic signals are unlikely to be required, the existing length of the right turn lane into the site is considered to be insufficient to provide adequate deceleration distance in an 80km/h speed environment.

For an 80km/h speed environment the recommended length of a deceleration lane is 112 metres. This will require the existing 56 metre lane to be doubled in length. In order to provide the increased lane length and also retain a traffic island and right turn lane for traffic turning onto the freeway similar to what is currently provided, it is proposed to widen Monash Way on the east side.

As part of the road widening works new pavement will need to be laid, existing street lighting will require minor relocation, existing kerbing will need to be removed and reinstated and the existing traffic island will need to be removed and constructed in a new position. Once completed, the works will provide a straighter alignment for Monash Way which will benefit through traffic in addition to traffic accessing the site.

c. Tramway Road

To cater for vehicles accessing the site via Tramway Road, it is considered that the existing pavement width will be insufficient. In particular, where the traffic signals are proposed at Kirwin Road, it will be necessary to provide two through traffic lanes in each direction to provide balanced capacity through the intersection. Given that two through lanes are currently provided adjacent to the existing site access to the north, it is suggested that this alignment should be continued through to the Kirwin Road intersection.

Further road widening is suggested at the Kirwin Road intersection to provide a 5 lane treatment on each of the Tramway Road approaches, incorporating right turn lanes both into the site and into Kirwin Road. This will result in a Pavement width for Tramway Road of 17.5 metres

Between the Kirwin Road intersection and the interchange with the eastbound carriageway of the freeway it is suggested that the 17.5 metre pavement width should be continued to provide for two through traffic lanes in each direction and right turn lanes into Swan Road and the southern site access. The intersection spacing will allow sufficient distance for right turn lanes of adequate deceleration length to be provided.

The proposed arrangement will allow vehicles intending to turn left to decelerate in the left through lane without delaying through vehicles that can overtake in the right through lane.

It is suggested that the widening of Tramway Road should occur on the west side adjacent to the site where there is currently no kerbing provided. In order for this to occur the reservation for Tramway Road will need to be increased to incorporate part of the site area. Upgraded street lighting would also be desirable along Tramway Road.

Left turn slip lanes should be provided to and from the site at the proposed intersection at Kirwins Road to minimise delays to heavy vehicles accessing the site.

7.5.2 Pavement Standards

With the current knowledge of potential site usage it is anticipated that pavement types may be groups as follows;

a. Heavy Duty Pavements Type 1: Hardstand areas adjacent to the rail siding

Pavements in the vicinity of the rail siding will be primarily subjected to loads resulting from container handling by forklifts, container stacking and heavy truck traffic. In addition

to the handling of incoming and outgoing goods of the major tenants of sites 1 and 2, rail transported goods of the small warehousing sites 3 to 34 will also traverse this area.

The design of these pavements will need to consider the predicted traffic volumes, consideration of geotechnical information and calculation of axle loads from forklifts and point loads from container stacking.

Forklift axle loads may be as high as 50 tonnes, whilst truck axle loads should be restricted to legal VicRoads limits. Point Loads from container stacking will vary depending on the height and form of stacking. The worst case would be if these were block stacked, in which case a point load also in the order of 50t could result containers stacked 2 high.

b. Heavy Duty Pavement Type 2: Roads Separating Tenants 1 & 2 & Small Warehouse Sites 3-29

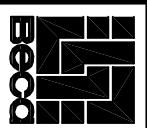
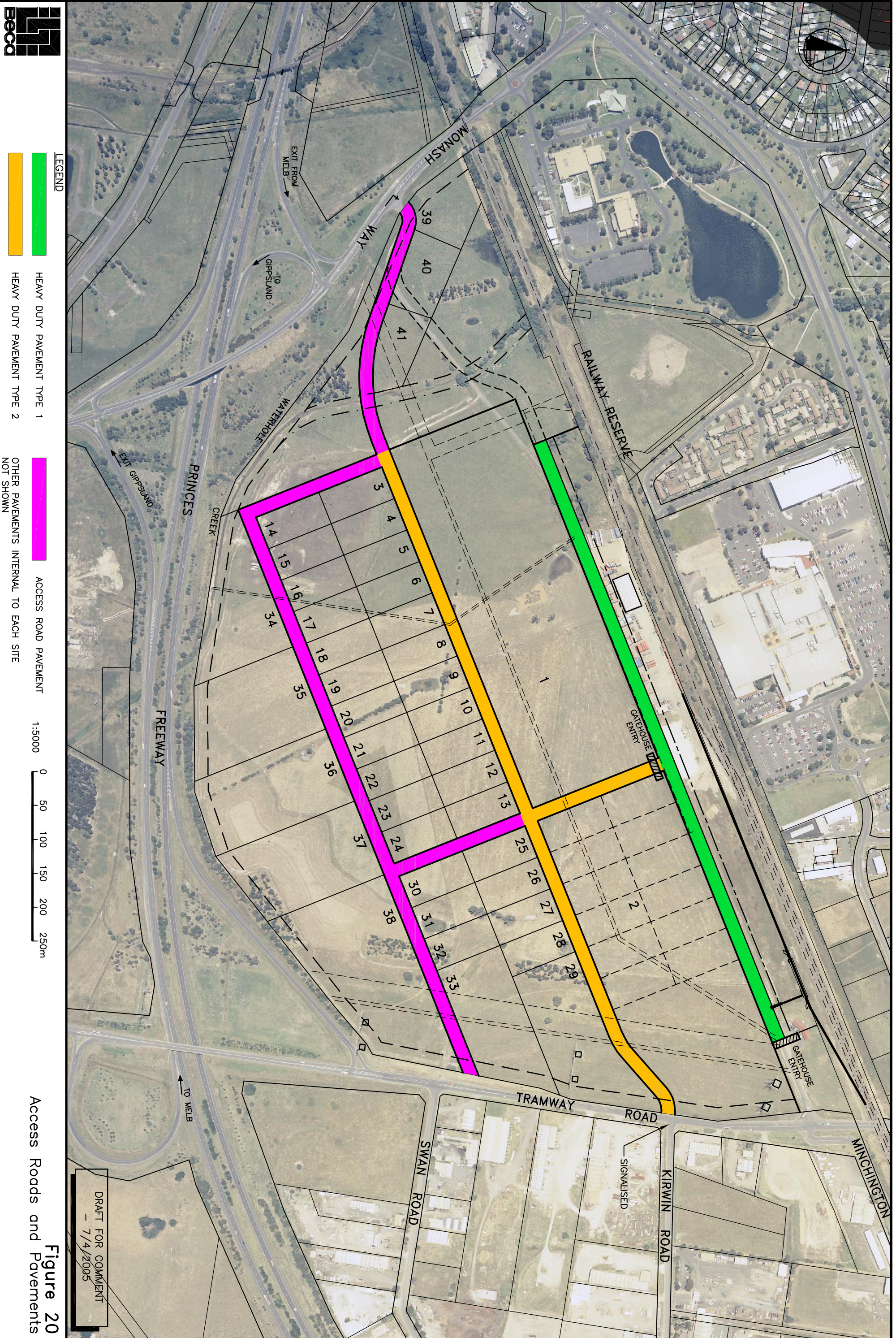
The heavy load bearing pavement separating tenants 1 & 2 will be subjected to similar loads as those of Heavy Duty Pavement Type 1, except in lesser volumes and without container stacking on the actual pavement. Goods from the rail siding will be transported to and from small warehouses (sites 3-29) via these roads. Areas subjected to heavy forklift loading and truck turning will need to be heavy-duty concrete type. Straight runs subjected primarily to truck traffic may comprise a heavy-duty asphalt pavement.

c. Access Road Pavements: Heavy Duty Truck Access

These are pavement areas which provide links to Tramway Road and Monash Way adjacent to the site, and sites 14-40 which are furthest from the rail siding and do not require rail access. These will be subjected only to Legal VicRoads axle limits and will generally consist of a heavy-duty asphalt type pavement.

d. Other Pavements:

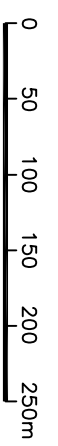
Pavement areas internal to each tenant area will provide pavements ranging from heavy duty truck loading/unloading areas through to light duty asphalt staff parking areas.



LEGEND

- HEAVY DUTY PAVEMENT TYPE 1
- HEAVY DUTY PAVEMENT TYPE 2
- OTHER PAVEMENTS INTERNAL TO EACH SITE NOT SHOWN

1:5000



DRAFT FOR COMMENT
- 7/4/2005

Figure 20
Access Roads and Pavements

7.6 Development Staging

Given the level of uncertainty in respect of the potential tenants for the site, an important consideration will be the extent to which development of the site, and associated servicing costs, can be staged. The approach of staging of development of the is determined by:

- The anticipated costs of providing infrastructure and services to enable development;
- The need to provide a mix of opportunities that will enable provide greater flexibility for marketing the site;
- A logical progression of development from the rail siding.

More detailed design and cost estimates will be required to confirm specific details of the suggested stated approach. However, in principle, it would appear that a first stage of development including the GIFT, Sites 1, 2 and 39 would be feasible without significant investment in infrastructure required, and in particular, without significant investment in on-site roads, which represent a significant proportion of the potential costs. Resolution of other issues and stormwater/flooding issues would however, be required to ensure any first stage of development is feasible without compromising subsequent stages.

7.7 Development Costs

7.7.1 Approach to preparing cost estimates

The general approach in preparing the cost estimates for the development of the site is to enable Council to understand the order of costs that may be associated with the site to get it to a fully developed state. This may also assist Council in identifying:

- The value of significant items of infrastructure or works that it may wish to provide funding for in order to provide a catalyst for the sites successful development;
- Determining an appropriate market value of the site, taking account of the development controls and constraints that will be placed on any future landowners to work towards the master plan for the site;
- Future risks for itself as landowner;
- Works that may be undertaken as part of its broader capital works budget;
- Opportunities for funding grants from State or Federal Government to support the project.

The estimates of probable costs contained in this report are based on broad conceptual information and are indicative only to be considered as part of the decision making process. They are likely to fall within an accuracy range of +/- 25-30% and should not be considered budgets for the work contained therein. Particular attention should be paid to the list of exclusions and assumptions at the end of the estimate included in Appendix C.

Table 16: Indicative cost estimates

Item	Cost (\$)
a. Work within site boundary	
Power	950,000
Water	700,000
Waste water	350,000
Telecommunication	
Gas	200,000
Stormwater Management and Drainage	1,600,000
Road and Access	11,100,000
b. Work outside Site Boundary	
Power	30,000
Water	10,000
Wastewater (none)	
Telecommunication	
Gas	10,000
Stormwater Management and Drainage (none)	
Road and Access	1,050,000
c. Total	16,000,000

These costs indicate that the rough order cost for fully serviced industrial land is approximately \$30/m² (this does not take account of the exclusions identified in Appendix C).

8 Precinct Governance

There are a number of governance and site ownership/management models available to the City and each has its drawbacks and advantages.

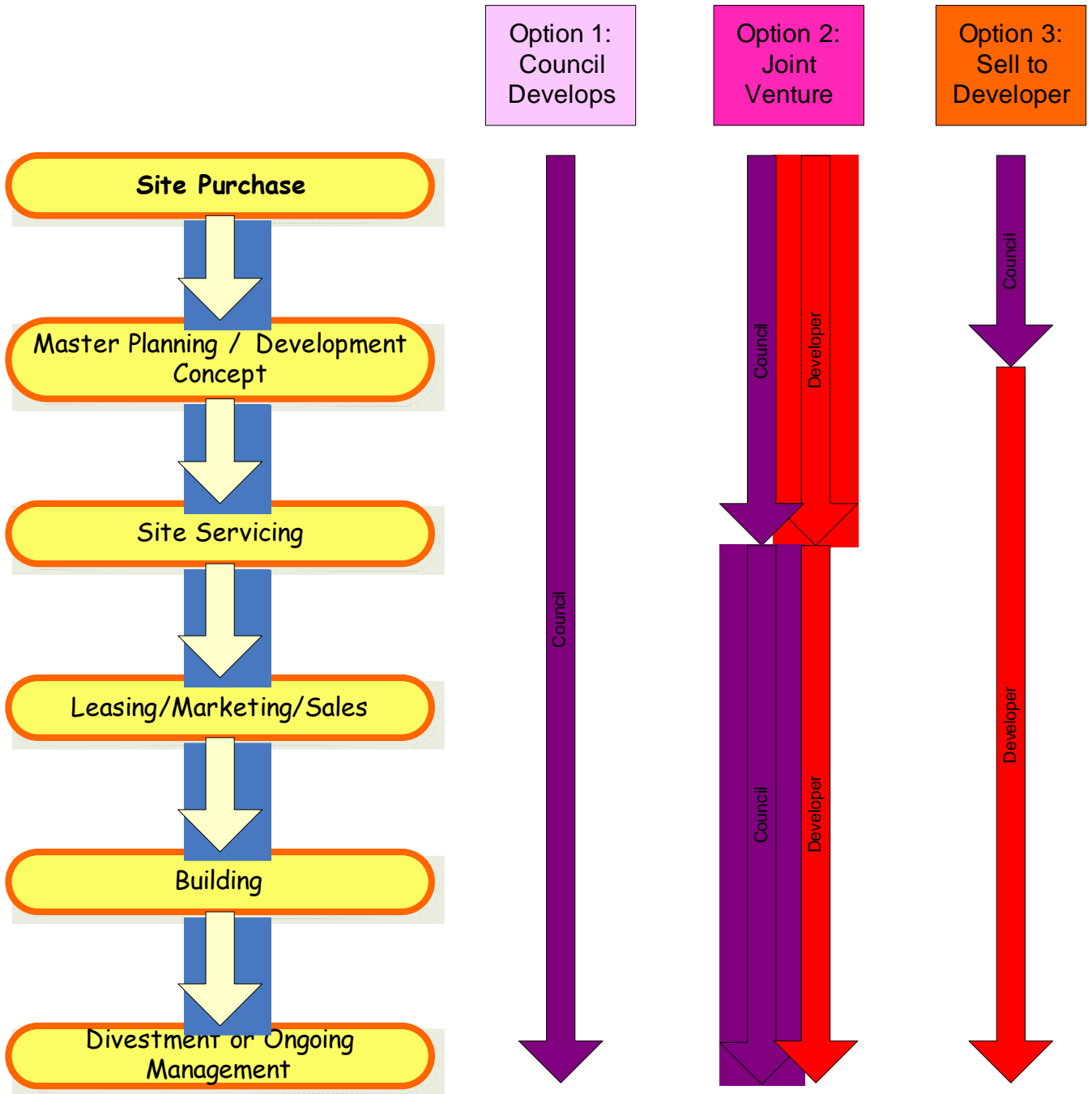
The City has noted at the early stages of the project that a range of options may be considered, provided these deal with Councils overall aims for the site and the project.

The governance of the facility is critical to its success. One of the key issues is the role of the Council in taking the project forward, and its long term role, if any, in the development process. Council has ambitions for this site to be the core of its freight and logistics distribution activities for the Latrobe Valley. It is strategically adjacent to the major transport networks of the region and the City is concerned to ensure the land use is consistent with this strategy.

The purchase and current ownership of the land by the City was justified on these grounds and it is considered important that the Master Plan examine options that are consistent with this outcome.

Governance arrangements for the land development are components of that consideration and in the following section a number of options are considered. It is worth considering the development process in this equation also, and in particular, at what point it is appropriate for Council to withdraw from this process. The following diagram provides an illustration of the development process relative to the role of Council and a developer;

Figure 21: Development Process and Options



8.1 Site Ownership

As noted above, there are three broad options for the future ownership and development of the site: Council owns and develops, a joint venture of some description, and Council sells to a developer. These are explored below:

8.1.1 Ownership Options

a. The City continues to own the Land, and releases it in tranches or *in toto* for private development and ongoing lease to tenants.

This model sees the City and the developer forming an agreement for the sharing or apportionment of costs, risks and returns. Tenants would be asked to enter into leases of say 20 to 50 years depending on their investment and risk profiles.

The advantage to the City is that it maintains continuity in the land ownership in perpetuity. It has the rights and obligations of a landlord and as such, some influence other than the planning authority over the commercial and community issues surrounding the land.

The disadvantages are that it is required to meet all or a large proportion of the capital works costs and marketing expenses and risks with the developer. It will need to meet its share of losses on the development if any and the City could well find itself in conflict with other developers and planning matters.

The reality is that most developers would be wary of dealing with a local government authority on such a commercial basis.

Such a project would require approval from the Treasurer under the enterprise provisions of Part 9 of the Local Government Act 1989 (sections 189-193). It would be difficult to obtain permission for such a venture, but by partnering with a *bona fide* private developer and with appropriate treatment of risk there is a chance.

b. The City undertakes the development itself;

There are few if any comparative advantages over the partnership approach in Option 1 above. The City is responsible for all the development, marketing and commercial risks for limited if any benefits. The likelihood of Treasurer approval is low. Under this model, the City owns the facility and operates it under a Board of Management arrangement with the tenants as key stakeholders. We have not taken this model any further, as the import of such an arrangement would be that the City would effectively enter into an enterprise arrangement and thereby require approval from the State to the point of preparing a draft deed. The establishment of a mechanism under the provisions of the LG Act would need to be explored with appropriate legal advice. The model used by the Rural City of Wodonga in the development of their freight and logistics centre at Barnawatha south of Wodonga could be used as an example. That site is being developed and marketed by the City.¹⁶

c. Retained Land (Parkland)

¹⁶ For more details of this project the reader is referred to the web site www.wodongallogic.com.au

It should also be noted that a portion of the land (7.6 ha) is identified in the subdivision plan as 'parkland'. This area also has a significant stormwater management role to play, as well as contributing to the general amenity of the land.

While it is acknowledged that retaining this land in Council ownership will have a maintenance cost associated with it, it is not possible at this point to recommend that Council dispose of this land along with the balance of the site. The reason for this is that there is insufficient information related to the need for this land to be held for stormwater management/attenuation purposes. Once more detailed information is available on the potential need for the site to provide for greater areas of flood storage from a catchment perspective, a firmer decision could be made. In due course, the balance of this land could be included in any agreement with a developer to purchase the land, however the incentive and likelihood of carrying out good maintenance is questionable. Council may also wish to retain ownership to enable easy access should the site include significant stormwater management devices.

8.1.2 Sale Options

a. The City sells the land to a developer

This is done under the clear understanding of certain master planning and statutory planning objectives. The developer develops the site to the boundaries of subdivision land and sells (or leases) these to businesses wishing to develop properties consistent with the broad framework of the master planning provisions.

The advantage for the City is that it minimises risk for a known commercial return and the development has certain caveats consistent with the broad goals of the facility. The 'return' will be minimal given all the development costs/risks are with the developer, and therefore the developer would receive the maximum uplift in value - although as noted previously this is also to be balanced against the risk taken by the developer. Council will still achieve some uplift in value from its original purchase, and with the additional planning that has been undertaken, the site could effectively be sold with development permits in place - potentially a significant attractor to a developer. The key risk to the developer in this instance is the availability and timing of tenants (i.e. is there demand, and when) and the costs of servicing the site.

The attractiveness for developers and purchasers is the freehold nature of the land. The developer would pass back public roads within the estate as part of the local road network although it is feasible to construct a model whereby part of the estate is secure and the development has private rights of way within the estate.

b. The City develops the subdivision in partnership or alone and then sells the properties to the developer

In this model the City negotiates the development of head works (roads, sewerage and drainage and power) with a private contractor and then seeks a developer to market the lots. The more likely combination might be the agreement to undertake responsibility for certain works and for the developer to take the risk on the balance. In either case the planning caveats relating to use for principal purposes would remain.

8.1.3 Staged Approach

There is the prospect of Council undertaking a staged approach to the sale or development of the site. Such an approach might see Council selling the first stage of the development, adjacent to the GIFT site, and retaining the balance of land to monitor the market. Alternatively, the balance of land may be retained to ensure the development of the first stage occurs in line with the master plan and/or agreed standards before any right to purchase the balance of the land is exercised by the developer.

8.2 Commercial Issues

Whether Council considers sale of the site or some alternative arrangement with a developer, or taking on the development itself, there are a number of commercial issues that would require legal advice. No advice in this document should be acted on without proper and independent legal advice, and on the basis that a number of opportunities identified through this process will remain uncertain until further discussions with prospective tenants, no clear recommendation can or should be formed at this point. Council will likely however formulate its own view on what an appropriate role is in the development process in moving forward following adoption of this master plan.

There are however a number of commercial issues that can be seen within the usual commercial framework where the developer sets out contractual arrangements with purchasers and others wishing to use the site. There are a number of means by which these arrangements could be progressed, including in the form of a body corporate type model or by agreement and contribution.

The commercial development of the land and its day-to-day operations would be a matter for the developer within the guidelines established in the master plan. There would be a strong alliance between the developer and Council on progress and milestone reporting and mutual celebration of achievements.

The project ought be a mutual initiative, irrespective of ownership or sale arrangements finally determined to be appropriate by Council as per the discussion in the previous section. The initial development of the headworks will require close association. The City could contemplate the establishment of a one-stop-shop for all approvals to streamline the design and build phases.

8.3 Site Management

The **second** form of site management relates to the siding. The GIFT is likely to be operated by or for Pacific National and it is sensible to have an amalgam of developer, landowners and the City agreeing the frameworks for the site and its abutting development. This would seem best initiated by the City to form a consultative mechanism for the integration of the two sites and consequent issues. The City may well act as the honest broker in any negotiation or at least facilitate outcomes of mutual interest.

Any rail siding developed within the site is a different matter. The operation of such a siding might take several forms. If the second siding was for a major single use user the site is in effect no different than a private site and would be managed by the owner or the owner's choice of manager. Indeed it might well be Pacific National if that operator was

chosen. This option cannot be ruled out, but it is likely with Council ownership that such an arrangement would probably mean that Council had chosen a long-term lease or sale of the land.

A more likely scenario is that the facility of a second siding will be developed as an additional or alternative capacity siding for a number of users. The facility would then be a common user facility and the City would be able to nominate a terminal operator. This could be a general terminal operator like FCL, CRT or Toll, or it may be a rail operator who wishes to provide alternative rail services to the site. This could be Queensland Rail, Australian Rail Group or Toll for instance. In either case the City as landlord would be in effect a mini VicTrack and could look to that entity and the ARTC for models of siding management. In most cases these are contracted to lessees or their nominee siding managers. In any event as owner of the land the City may chose to have a requirement for reporting milestones and institute commercial incentives for the meeting of agreed key performance indicators. These reports on indicators may be trade based, reliability, ease of access to third parties, handling prices.

9 Recommendations

9.1 Conclusion

The development of the Morwell Logistics Precinct aims *“To create a leading and best practice intermodal terminal and logistics precinct that actively promotes increased rail use while serving as a model for economic viability and sustainability.”*

The investigations carried out through this project indicate that there is a firm prospect to deliver the development based on a robust design concept. There are a number of actions to follow the finalisation of this master plan, which including determining Council’s role in the development process (if any), entering the marketing/leasing stage of the development process, developing design detail for servicing works and reviewing some detailed planning matters with key agencies (in particular the need for any rezoning associated with the service centre site based on discussions with VicRoads).

Overall, there do not appear to be any significant constraints to progressing the development from a technical perspective. Clearly there is some interest in the site from the local and regional market. The extent to which this interest may translate into investment is yet to be determined. Before this can be progressed, we would suggest that the role Council wishes to take in this process must be clarified. No recommendation is made on this issue, and nor is one appropriate from the consulting team.

If suitable tenants and freight volumes can be secured for the site, it will provide Morwell, Latrobe Valley and Gippsland with an excellent logistics hub, and will assist Council in meeting the broader strategic goals set out earlier in this report.

There are a number of further recommendations that will need to be considered for action, either by Council or a developer of the site. These recommendations are outlined below in draft form for consideration as part of this draft report stage:

9.2 Technical Investigations

9.2.1 General technical issues

There are a number of additional more detailed technical investigations that will need to be undertaken to confirm the approach to development of the site at an appropriate time. We would suggest that the point at which this occur be the subdivision stage, and that this occur in order to facilitate the entry of the first anchor tenant onto the site. These technical and professional work packages include:

- Full survey of the site, including contours and proposed site boundaries;
- Geotechnical investigations, including confirmation that the site is suitable for creating of building platforms, roads and pavements. A site contamination check should also occur at this stage, as no allowance has been made to date for dealing with any contaminated land issues;
- Ecological survey to determine whether native vegetation rules may apply, in particular in relation to any potential native pasture/grasslands;

- Integration of the results of a catchment flood study (to be conducted) to confirm the potential extent of floodplain that affects the site and identifying the area of parkland that may be required for additional attenuation/flood storage devices;
- Detailed design and subsequent confirmation from utility servicing authorities on the preferred approach to servicing to enable firm costs and confirmation;
- That target negotiations or discussions with adjoining property owners occur.

9.2.2 Stormwater Maintenance and Education

A common issue experienced with a water sensitive urban design approach to stormwater management is the long term operational / maintenance of the treatment device and conveyance controls. The maintenance regime required for water sensitive urban design stormwater components vary significantly to those required for a traditional stormwater pit and pipe system. Council will need to undertake an educational program with site operators on understanding water sensitive urban design and how to maintain it.

Other issues experienced with maintenance is that in many cases, Council puts the onus on developers for the maintenance of these stormwater components. Generally, developers will then setup a body corporate type arrangement. The risk with this arrangement is that Council have no control on how the treatment devices are being maintained and therefore the stormwater targets may not be met.

It is recommended that Council decide on the approach to maintenance. A possible solution is that Council maintain all roadway related stormwater treatment devices and those in public open spaces. Individual lot owners are to ensure their stormwater components are maintained. Council may also audit sites on a yearly basis to ensure maintenance is occurring, or require some form of regular certification.

9.3 Access Arrangements

A priority for implementation of the master plan is progressing a detailed agreement that enables access to the rail siding. It is recommended that:

- Council confirm its position with respect to the development of the site with relevant State Government agencies to enable support for access to the GIFT siding to support the site;
- Council begin negotiation with Pacific National to ensure an integrated development with the GIFT and Council sites occurs.
- Council formalise some form of appropriate alternative rail easement across the site to ensure rail access can be provided as an alternative to the siding on the GIFT site, and confirm that access arrangements to the main line would enable this approach to be effective;

9.4 Governance Approach

This report identifies a range of options for developing the site, including whether Council should develop the site, enter a joint venture with a developer, or sell the site to a developer. It is recommended that:

- Council consider and adopt the final master plan report;
- Council consider its position in respect of the future governance arrangements for the site.

- Appendix A

Certificate of Title

Location of Land

Parish: MARYVALE
Township: _____
Section: _____
Crown Allotment: 8E
Crown Portion: _____
Title Reference: VOL 10347 FOL 912

Last Plan Reference: TP4870K
Postal Address: TRAMWAY ROAD
(at time of subdivision) MORWELL 3840

AMG Co-ordinates E 450 100 ZONE: 55
(of approx. centre of land in plan) N 5 767 000

Council Certification and Endorsement

Council Name: LATROBE CITY COUNCIL Ref: _____

1. This plan is certified under section 6 of the Subdivision Act 1988.
2. This plan is certified under section 11(7) of the Subdivision Act 1988.
Date of original certification under section 6 / /
3. This is a statement of compliance issued under section 21 of the Subdivision Act 1988.

OPEN SPACE
(i) A requirement for public open space under section 18 of the Subdivision Act 1988 has/has not been made.
(ii) The requirement has been satisfied.
(iii) The requirement is to be satisfied in Stage.....

Council Delegate
Council Seal
Date / /

Re-certified under section 11(7) of the Subdivision Act 1988.

Council Delegate
Council Seal
Date / /

Vesting of Roads and / or Reserves

Identifier	Council/Body/Person
ROAD R1	LATROBE CITY COUNCIL

Notations

Staging This ~~is~~ is not a staged subdivision
Planning Permit No. _____

Depth Limitation 300 METRES BELOW THE SURFACE
APPLIES TO ALL OF THE LAND IN THIS PLAN

The land being subdivided is enclosed within thick continuous lines.

Survey This plan is/is not based on survey.

This survey has been connected to permanent marks no(s).
in Proclaimed Survey Area No. _____

Easement Information

Legend: E - Encumbering Easement or Condition in Crown Grant in the Nature of an Easement
A - Appurtenant Easement R - Encumbering Easement (Road)

Subject Land	Purpose	Width (Metres)	Origin	Land Benefited/In Favour Of
E-1, E-3, E-5, E-9, E-10	RAILWAY	20	THIS PLAN	LOTS ON THIS PLAN
E-2, E-3, E-6	PIPELINE OR ANCILLARY PURPOSES	3	THIS PLAN - SEC 136 OF WATER ACT 1989	CENTRAL GIPPSLAND REGION WATER AUTHORITY
E-4, E-5, E-6	POWER LINE	SEE DIAGRAM	THIS PLAN - SEC 144 ELECTRICITY INDUSTRY ACT 1993	TXU ELECTRICITY
E-7, E-8, E-9, E-10	TRANSMISSION OF ELECTRICITY	SEE DIAGRAM	THIS PLAN - SEC 144 ELECTRICITY INDUSTRY ACT 1993	SPIPOWERNET PTY LTD
E-8, E-10	PIPELINE	5	THIS PLAN	LOY YANG POWER

LTO use only

Statement of Compliance/Exemption Statement

Received

Date / /

LTO use only

PLAN REGISTERED

Time

Date / /

Assistant Registrar of Titles

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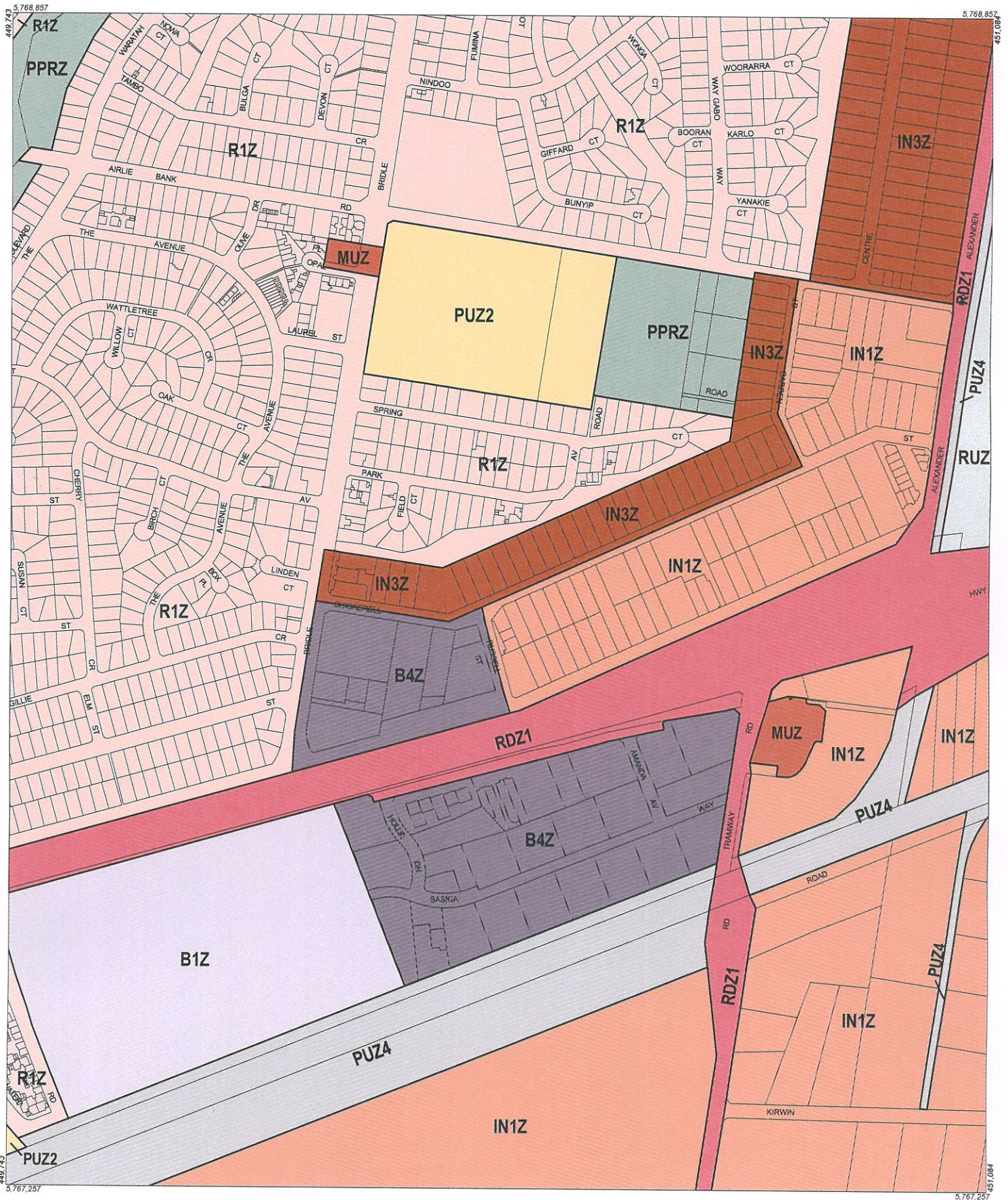
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- Appendix B

Planning Scheme Zoning Maps

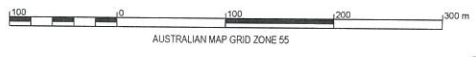
LATROBE PLANNING SCHEME - LOCAL PROVISION



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Business		Residential	
	Business 1 Zone		Mixed Use Zone
	Business 2 Zone		Residential 1 Zone
	Business 4 Zone		Rural Zone
	Industrial 1 Zone		
	Industrial 3 Zone		
	Public Land		
	Public Park And Recreation Zone		
	Public Use Zone Education		
	Public Use Zone Transport		
	Road Zone Category 1		



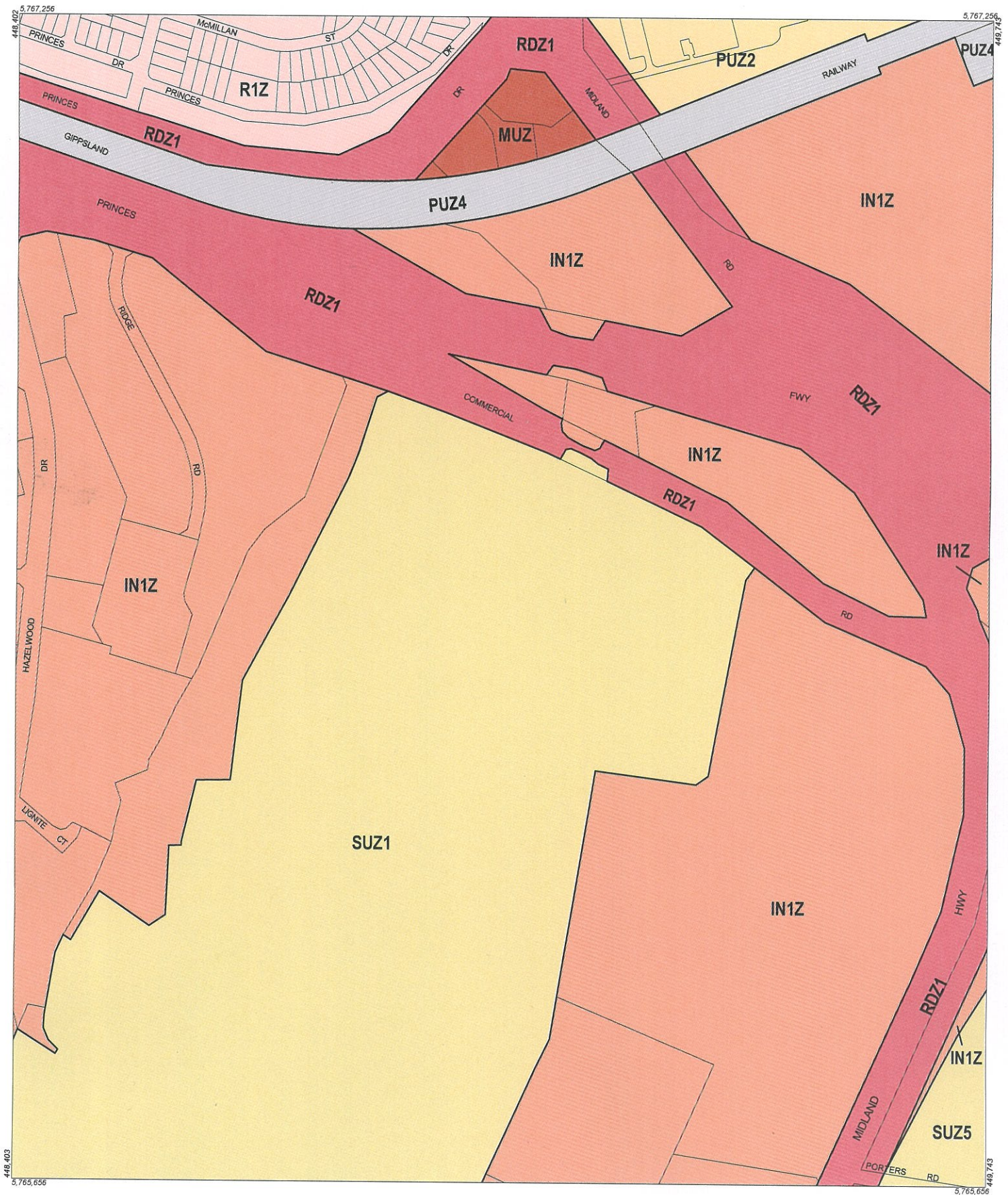
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LATROBE PLANNING SCHEME - LOCAL PROVISION

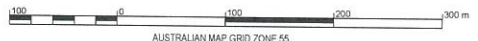


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Industrial	Industrial 1 Zone	Special Use Zone 5
Public Land	Public Use Zone Education	
	Public Use Zone Transport	
	Road Zone Category 1	
Residential	Mixed Use Zone	
	Residential 1 Zone	
Special Purpose	Special Use Zone 1	

ZONES



AUSTRALIAN MAP GRID ZONE 55

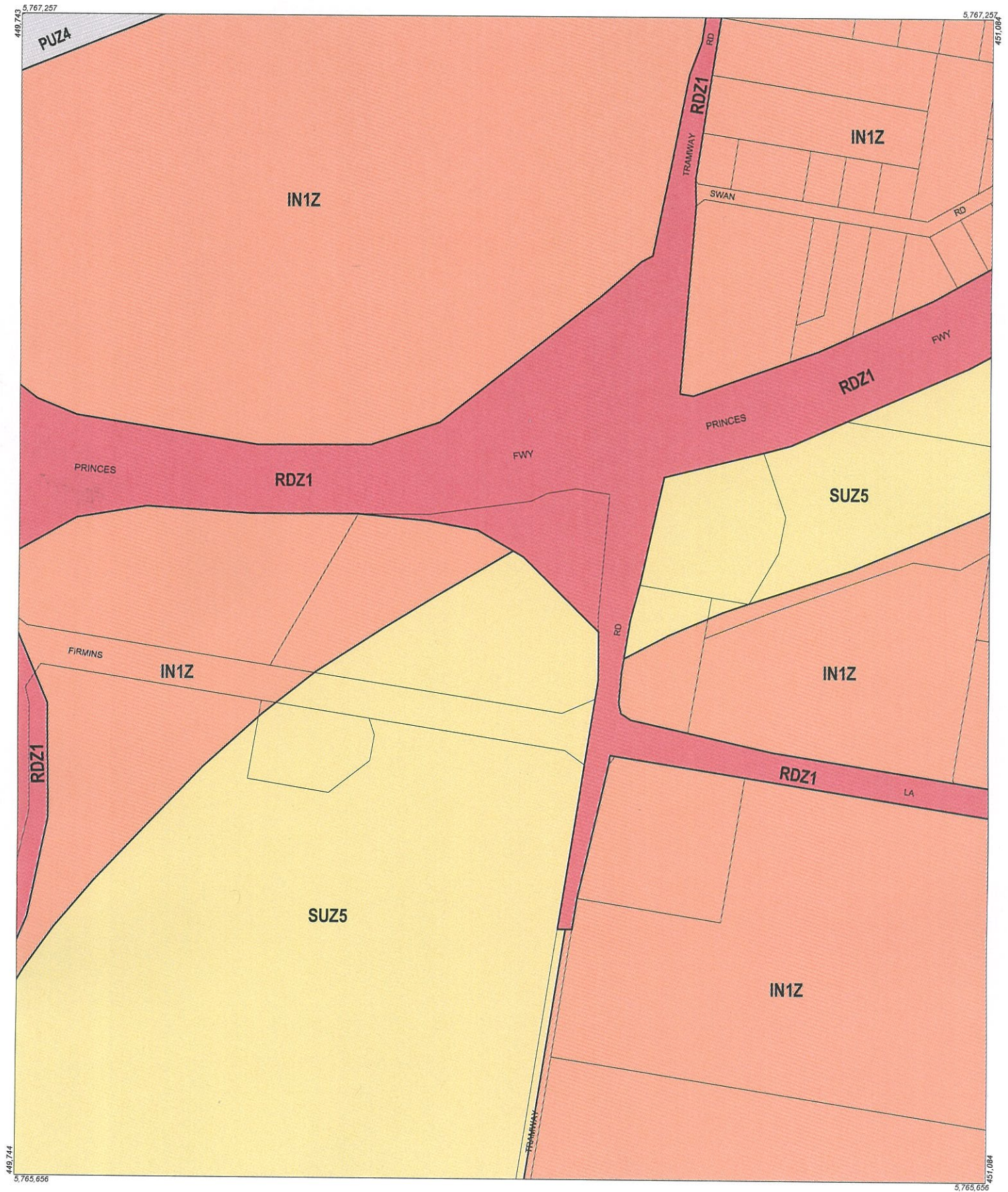
Amendment C4
Printed: 14/12/2004



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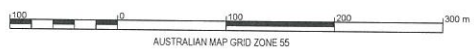
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LATROBE PLANNING SCHEME - LOCAL PROVISION



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Industrial	Industrial 1 Zone
Public Land	Public Use Zone Transport
	Road Zone Category 1
Special Purpose	Special Use Zone 5



Amendment C31
 Printed 3/9/2004



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- Appendix C
Cost Estimates

GENERAL SUMMARY

COMPANY : Beca

PROJECT : Latrobe Logistics Precinct

DATE : Thu 07 Apr 2005 01:21pm

SubTitle :

Bid Currency : Australian Dollars

CO	SECTION NAME	UNIT	QTY	RATE	COST
	Work Within Site Boundary				
01	Power				950,000
02	Water				700,000
03	Waste Water				350,000
04	Telecommunication				
05	Gas				200,000
06	Stormwater Management & Drainage				1,600,000
07	Roads & Access				11,100,000
	Work Outside Site Boundary				
08	Power				30,000
09	Water				10,000
10	Waste Water (None)				
11	Telecommunication				
12	Gas				10,000
13	Stormwater Management & Drainage (None)				
14	Roads & Access				1,050,000
	EXCLUSIONS				
	TOTALS OF SELECTED SECTIONS				16,000,000

Section '01'-'Power'

COMPANY : Beca

PROJECT : Latrobe Logistics Precinct

DATE : Thu 07 Apr 2005 01:21pm

SubTitle :

Bid Currency : Australian Dollars

BQREF	DESCRIPTION	COST
	WORK WITHIN SITE BOUNDARY	
	Power	
	Underground existing overhead 22kV	200,000
	Connections of substations to HV	150,000
	200kW substations	240,000
	LV reticulation & pillar boxes	90,000
	Electrical supply to gatehouses	25,000
	P & G	70,500
	Contingency	155,100
	Rounding	19,400
	Totals for Section '01'-'Power'	950,000

BQREF	DESCRIPTION	COST
	WORK WITHIN SITE BOUNDARY	
	Water	
	225 uPVC ring main	440,750
	100 uPVC branches	59,850
	225 x 100 tees	9,500
	Blanked ends	3,800
	P & G	51,390
	Contingency	113,058
	Rounding	21,652
	Totals for Section '02'-'Water'	700,000

BQREF	DESCRIPTION	COST
	WORK WITHIN SITE BOUNDARY	
	Waste Water	
	100 RC Class 4 sewer pipe	116,000
	225 RC Class 4 sewer pipe	74,750
	Manholes	12,000
	Packaged fibreglass pump station including pump	55,000
	P & G	25,775
	Contingency	56,705
	Rounding	9,770
	Totals for Section '03'-'Waste Water'	350,000

BQREF	DESCRIPTION	COST
	WORK WITHIN SITE BOUNDARY	
	Gas	
	125 HDPE ring main	108,000
	50 HDPE branches	22,000
	125 x 50 tees	15,000
	P & G	14,500
	Contingency	31,900
	Rounding	8,600
	Totals for Section '05'-'Gas'	200,000

BQREF	DESCRIPTION	COST
	WORK WITHIN SITE BOUNDARY	
	Stormwater Management & Drainage	
	150 RC stormwater pipe	62,700
	Blanked ends to ditto	5,700
	375 RC stormwater pipe	127,500
	450 RC stormwater pipe	129,000
	525 RC stormwater pipe	191,250
	750 RC stormwater pipe	21,000
	Manholes	48,000
	150 x 375 tees	9,750
	150 x 450 tees	16,000
	150 x 525 tees	11,250
	Outfall	5,000
	Water Sensitive Urban Design Components	
	Biofiltration trench & swale	236,000
	Gross polutant trap	35,000
	Road culvert	20,000
	Headwalls	4,000
	Excavate & CA for wetland	110,250
	Cut & fill for wetland	20,250
	HDPE liner	22,500
	Wetland planting to perimeter	6,750
	Overflow connection from wetland to creek	5,000
	Road Drainage	
	Catchpits	50,000
	150 RC stormwater pipe	27,500
	150 x 525/450/375 tees	50,000
	P & G	121,440
	Contingency	267,170
	Rounding	-3,010
	Totals for Section '06'-'Stormwater Management & Drainage'	1,600,000

BQREF	DESCRIPTION	COST
	WORK WITHIN SITE BOUNDARY	
	Roads & Access	
A	Heavy duty pavement Type 1 comprising 400mm 32MPa concrete with F82 mesh on 150mm thick 4% cement treated crushed rock	1,665,000
	Heavy duty pavement Type 2 comprising 300mm 32 MPa concrete with F82 mesh on 150mm class 3 crushed rock	1,650,600
	Access road pavement comprising 50mm size 14 type H asphalt on 7mm emulsion primer on 250mm of 20mm class 2 crushed rock on 350mm of 20mm class 3 crushed rock	1,938,000
B	Footpaths	1,030,000
B	Semi-mountable road kerb & channel	412,000
B	Kerb to footpath	206,000
	Stream crossing	100,000
	Junctions to existing roads	150,000
	Heavy duty reinforced concrete cross overs	218,500
B	Light poles including luminaire & cable	618,000
B	Lighting cable & trenching	296,640
B	Signage	25,000
A	Fencing to secure area	40,250
A	Train access gates	10,000
A	Gatehouses	20,000
A	Security barriers	10,000
B	P & G	838,999
B	Contingency	1,845,798
	Rounding	25,213
	A - Cost wholly relevant to development of GIFT site.	
	B - Cost partially relevant to development of GIFT site.	
	Totals for Section '07'-'Roads & Access'	11,100,000

Section '08'-'Power'

COMPANY : Beca

PROJECT : Latrobe Logistics Precinct

DATE : Thu 07 Apr 2005 01:21pm

SubTitle :

Bid Currency : Australian Dollars

BQREF	DESCRIPTION	COST
	WORK OUTSIDE SITE BOUNDARY	
	Power	
	Connection to existing main in Tramway Road	20,000
	P & G	2,000
	Contingency	4,000
	Rounding	4,000
	Totals for Section '08'-'Power'	30,000

BQREF	DESCRIPTION	COST
	WORK OUTSIDE SITE BOUNDARY	
	Water	
	Connection to existing water main in Tramway Road	5,000
	P & G	500
	Contingency	1,000
	Rounding	3,500
	Totals for Section '09'-'Water'	10,000

BQREF	DESCRIPTION	COST
	<p>WORK OUTSIDE SITE BOUNDARY</p> <p>Waste Water</p> <p>It has been assumed that the connection point is at the site boundary within the existing easement. No cost allowance has been made for work beyond the site boundary.</p> <p>Totals for Section '10'-'Waste Water (None)'</p>	

BQREF	DESCRIPTION	COST
	WORK OUTSIDE SITE BOUNDARY	
	Gas	
	Connection to existing gas main in Tramway Road	5,000
	P & G	500
	Contingency	1,000
	Rounding	3,500
	Totals for Section '12'-'Gas'	10,000

BQREF	DESCRIPTION	COST
	WORK OUTSIDE SITE BOUNDARY	
	Roads & Access	
	<i>Monash Way</i>	
	Remove & relocate kerb to south of access	10,000
	Remove & relocate drains to south of access	10,000
	Remove & relocate traffic island to south of access	25,000
	Remove & relocate light poles to south of access	10,000
	Remove & relocate kerb to north side of access	10,000
	Remove & relocate drains to north of access	10,000
	Remove & relocate light poles to north of access	8,000
	Road widening to south of access	93,750
	Road widening to north of access	62,500
	Line marking	2,000
	Signage	2,000
	Traffic management	10,000
	<i>Kirwin Road</i>	
	Remove & relocate kerb to south of access	10,000
	Remove & relocate drains to south of access	10,000
	Remove & relocate traffic island to south of access	25,000
	Remove & relocate light poles to south of access	8,000
	Remove & relocate kerb to north side of access	10,000
	Remove & relocate drains to north of access	10,000
	Remove & relocate light poles to north of access	8,000
	Road widening to south of access	75,000
	Road widening to north of access	75,000
	Line marking	2,000
	Traffic signals	150,000
	Additional work to site acces creating slip roads	20,000
	Alterations to Kirwin Road exit	20,000

BQREF	DESCRIPTION	COST
	Signage	2,000
	Traffic management	10,000
	<i>Swan Road</i>	
	Remove & relocate kerb to north side of access	10,000
	Remove & relocate drains to north of access	10,000
	Remove & relocate light poles to north of access	8,000
	Road widening to north of access	62,500
	Line marking	2,000
	Signage	2,000
	Traffic management	5,000
	P & G	78,775
	Contingency	173,305
	Rounding	10,170
	Totals for Section '14'-'Roads & Access'	1,050,000

BQREF	DESCRIPTION	COST
	<p>EXCLUSIONS</p> <p>Telecommunication</p> <p>Earthworks/site preparation for new sites, except as required for construction of roads/services</p> <p>Rail siding extensions</p> <p>Contributions to infrastructure or utilities</p> <p>Upgrades to existing utilities</p> <p>Utilities connection fees</p> <p>Land purchase</p> <p>Demolition of existing structures</p> <p>Clearance of trees, vegetation</p> <p>Removal of contaminated material (if any)</p> <p>Abnormal site conditions</p> <p>Topographical survey fees</p> <p>Geotechnical investigation fees</p> <p>Planning permit, VCAT or other related planning costs</p> <p>Public interface and communication</p> <p>Design & construction management fees</p> <p>Finance charges</p> <p>Miscellaneous client costs</p> <p>Legal costs</p> <p>Financing costs</p> <p>Client supervision costs</p> <p>GST</p> <p>Totals for Section "-EXCLUSIONS"</p>	