

Berwick Health & Education

Comprehensive Development Plan

April 2021



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1.0 INTRODUCTION

The Berwick Health and Education Precinct Comprehensive Development Plan (CDP) has been prepared by the Victorian Planning Authority (VPA) with the assistance of Casey City Council, Government agencies, service authorities and major landowners.

The CDP is a long-term plan for urban development. It describes how land is expected to be developed and how land uses may change over time to create an employment hub of intense activity. It also includes how and where community, utilities and transport infrastructure are planned to support future development.

The CDP implements the following State and Municipal planning policy as relevant:

- *Plan Melbourne, Metropolitan Planning Strategy, Victorian Government, 2017.*
- *State Planning Policy Framework* set out in the Casey Planning Scheme.
- *Local Planning Policy Framework* of the Casey Planning Scheme.
- *Berwick Village Structure Plan 2011*, adopted policy of Casey City Council.

The CDP reinforces the role of existing health and educational land uses and will consolidate Berwick's existing amenity with additional services and infrastructure. The CDP will also guide the delivery of a quality urban environment in accordance with Government guidelines, and sets a clear vision for development. It provides Government, Council, developers, investors and the local community certainty about the form of future development.

1.1 How to read this document

The CDP is incorporated into the Casey Planning Scheme. As such it should be read as part of the planning scheme.

The CDP comprises a number of components including a vision, objectives, plans, diagrams, tables, illustrations, requirements and guidelines. The planning scheme, including the Comprehensive Development Zone, directs when and how the CDP is to be taken into account in making a planning decision. When the planning scheme directs this, all of these components of the CDP should be considered as relevant to the decision at hand and in the manner that the scheme directs.

It is intended that the CDP vision, objectives and future urban structure, collectively the CDP's 'outcomes', are achieved by all applications and permits. Requirements in the CDP must be met as per the requirement in the controlling schedule to the Comprehensive Development Zone. The remainder of the content describes how the outcomes can be achieved; this content is not intended to exclude the possibility of a proposal achieving the outcomes of the CDP in a different way.

The CDP is not an exhaustive planning control; it does not address every aspect of land use and development. A responsible authority must manage development and issue permits as relevant with reference to the broad range of matters it is required to consider when making a decision under the *Planning and Environment Act 1987* and the planning scheme.

1.2 Land to which this plan applies

The Berwick Health and Education Precinct extends to include Monash University, Chisholm Institute of TAFE, St. John of God Private Hospitals (both campuses) and Casey Hospital (Monash Health). The Precinct has supported the establishment and growth of both the health and education industries in Berwick for the last 20 years, and these uses are now well defined in their occupancy and operation.

To support the Precincts growth and broader strategic planning policy for Berwick, surrounding areas are intended for more intensive residential and commercial development including multi-storey mixed use development and diverse housing. Consequently, other planning scheme controls apply to land outside the Precinct and the CDP.

This CDP applies to specific land within the Precinct that is shown as CDZ2 on the Casey Planning Scheme Maps including Monash University, Chisholm Institute of TAFE and St John of God Private Hospitals. It incorporates approximately 122 hectares of land adjoining Berwick Village as shown on Plan 2. The majority of the CDP is within a walkable catchment of Berwick Station which forms a premium station servicing Melbourne's South East.

1.3 Background information

The Berwick Health and Education Precinct represents a hub of knowledge, technology, health, employment, research and education for the South East Region.

The Berwick area is identified as a Health and Education Precinct in Plan Melbourne under Direction 1.1 – *Create a city structure that strengthens Melbourne's competitiveness for jobs and investment*, Policy 1.1.4 – Support the significant employment and servicing role of health and education precincts, which highlights the importance of health and education precincts to the local community and broader metropolitan region.

The southern and western areas of the CDP, abutting Princes Freeway, contain the major remaining undeveloped land in the Precinct. This area, for most of the 20th Century, operated as Casey Airfield, established for Lord Richard Casey (first Australian born Governor General) and Lady Maie Casey to fly direct to Canberra. The site was transferred to Monash University who established Berwick Campus in 1994, following the establishment of Chisholm TAFE in 1992. More recently the land has been further developed for educational purposes with Nossal High School established in 2010 and the Insight Education Centre for the Blind and Vision Impaired in 2014.

The health sector also continues to grow in Berwick. St. John of God Private Hospital is close to completing its new landmark building on Kangan Drive providing an estimated 266 hospital beds. The Victorian Government's 160 bed expansion to Casey Hospital, due to commence in 2017, will provide new acute services for the local and regional community.

The Precinct also provides dedicated office space, commercial, retail and manufacturing uses. Together with these established health and educational uses, the development of vacant land for employment has the potential to support over 8,500 jobs in Berwick.

Detailed background information relating to the Precinct, including its history, landform, land contamination, integrated transport network, drainage, open space, transport infrastructure, and native vegetation can be found in the following consultants reports which have informed the preparation of the CDP:

- *Monash University Phase 1 Environmental Site Assessment. Berwick Campus Development, Monash University, Clyde Road Berwick, Victoria, Peter J Ramsay and Associates, August 2016.*
- *Berwick Health and Education Precinct, Vegetation Assessment, Biosis, December 2016 and the Berwick Health and Education Precinct, Southern Drain Vegetation Assessment, Biosis, May 2015.*
- *Drainage Review: Berwick Health and Education Precinct, Alluvium, April 2017.*
- *Historical Heritage Report: Former Casey Airfield Hangars, Berwick, Victoria, Ecology and Heritage Partners, April 2017.*
- *Berwick Health and Education Precinct Transport Assessment, Cardno Consultants, March 2018.*
- *Aboriginal Heritage Impact Assessment Berwick Health and Education Precinct Berwick, Victoria, Heritage Insight, May 2015.*
- *Monash University Berwick Campus Development Services Infrastructure Report, Irwin Consulting, February 2016.*



2.0 OUTCOMES

2.1 Vision

The Berwick Health and Education Precinct will be a vibrant and integrated employment centre, connected by a walkable street and open space network that facilitates innovation in business, health and education.

The ultimate development of the Precinct will provide over 8,452 jobs via multi-storey health, education, office and commercial developments that take advantage of the sites exposure to Princes Freeway and Clyde Road.

The Precinct will welcome 2,300 new residents in the form of students, key workers and professionals who will reside in high quality, multi storey mixed use developments focused around Sir Gustav Nossal Boulevard, Buchanan Park and Berwick Station.

2.2 Land use sub-precincts

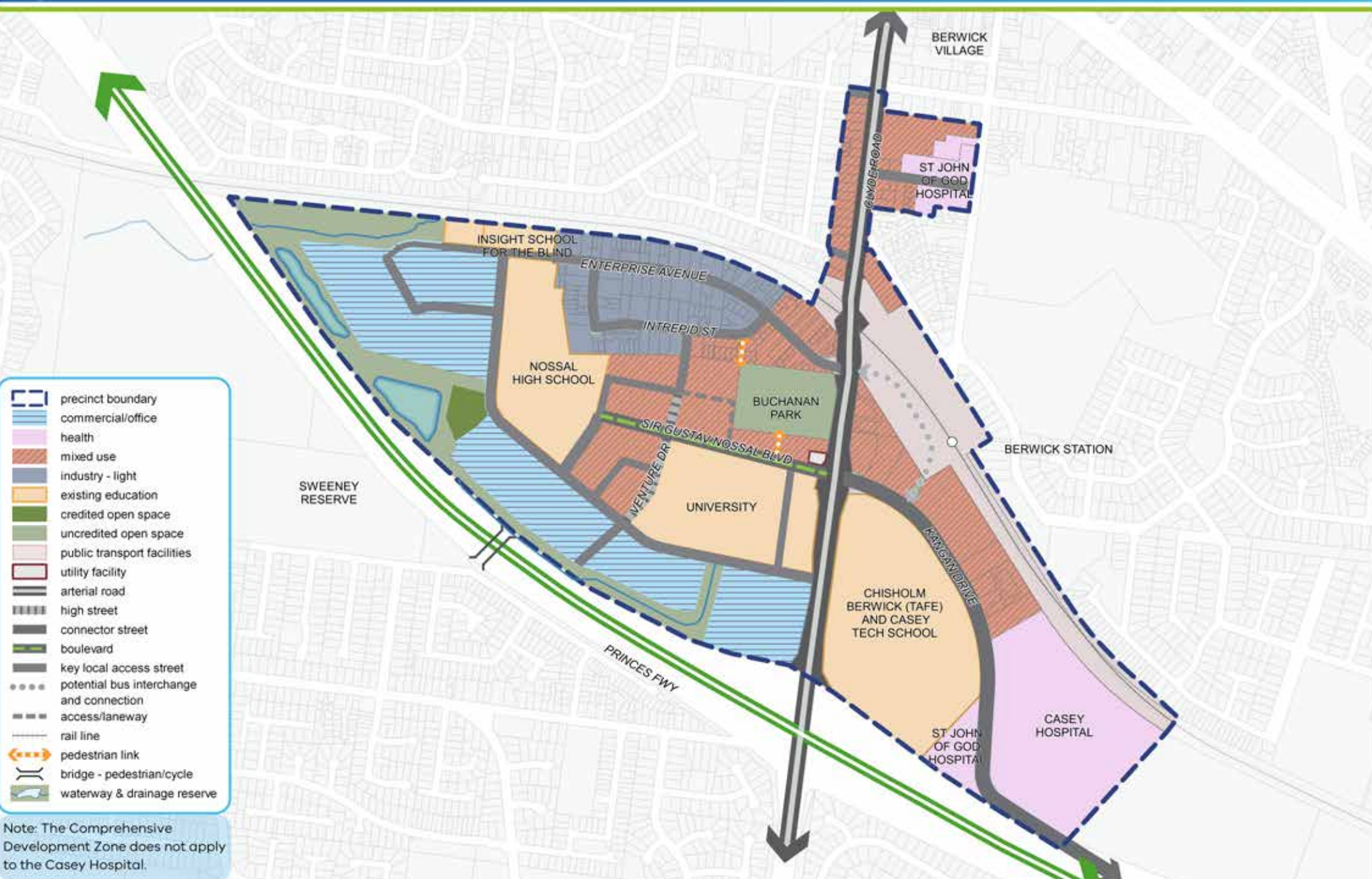
Lifestyle Retail will focus activity along Sir Gustav Nossal Boulevard (Nossal Boulevard) as a destination where people will meet, greet, socialise and do business. Supported by Health and Education, Nossal Boulevard and Venture Drive 'high street', will support fine grain retail development, student and short term accommodation, leisure and entertainment activities and high density housing to service the growing student, professional and resident population.

Health and Education will deliver ongoing support for established and emerging educational and health institutions that provide facilities across diverse stages of learning and medical fields. Integration between institutions and growth within the education, training and health sector in general is encouraged through new complementary land uses.

The **Corporate Centre** will maximise Princes Freeway exposure through the development of multi-storey offices and associated commercial enterprises along the Freeway and Clyde Road. Building on a quality retail experience along Nossal Boulevard, the established educational activities and broader improved transport connections from Berwick Station provides an attractive corporate offer.

Business and Enterprise will ensure ongoing provision of land for existing and future distribution, warehousing and local manufacturing within Berwick. This area will also allow opportunities for research and development and advanced manufacturing to support the diversity of the Berwick Health and Education Precinct.

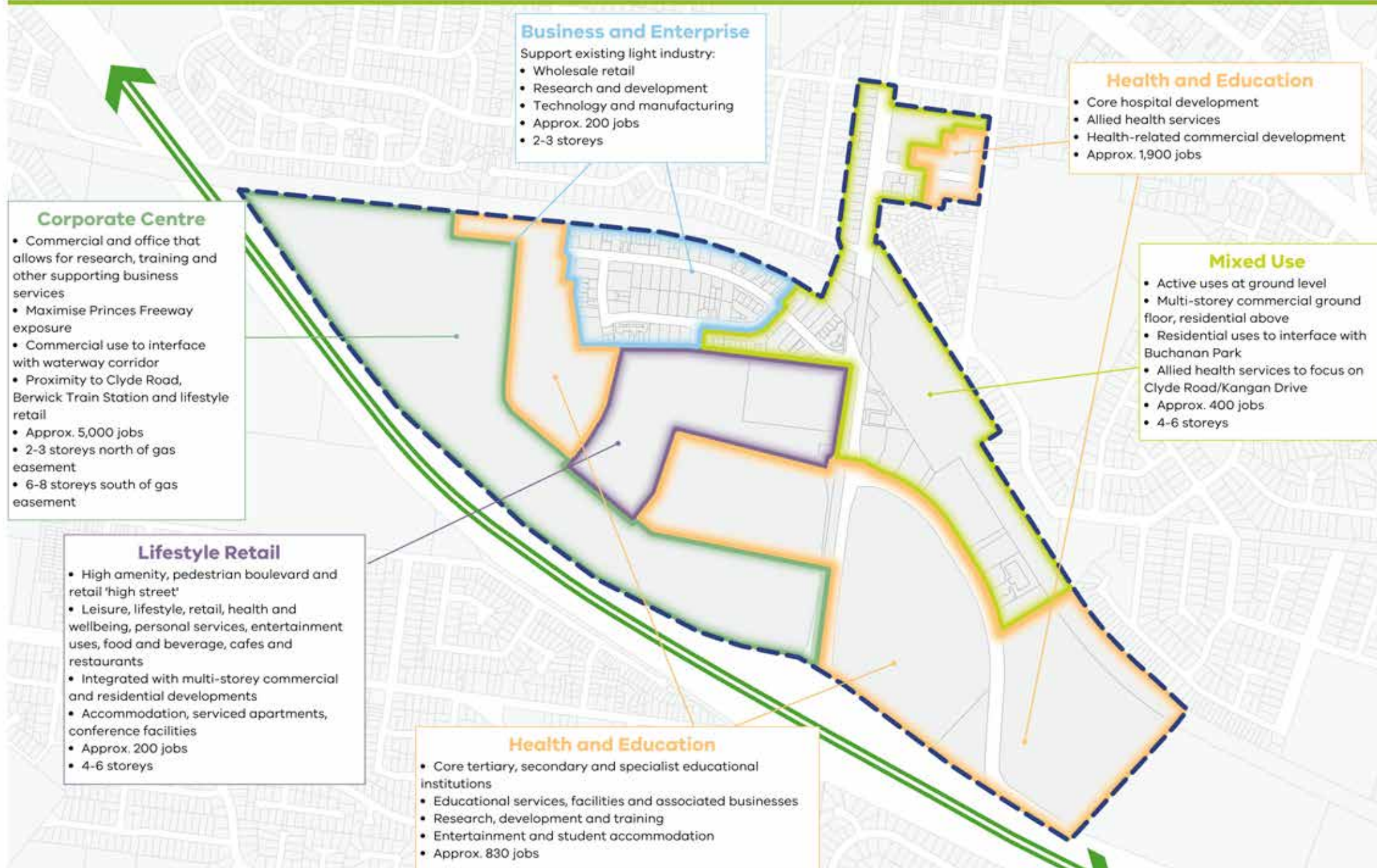
Mixed Use along Kangan Drive and Clyde Road provides opportunities for allied health services to develop in association with office, commercial and residential accommodation, in proximity to both hospital campuses and Berwick Station. The land along Enterprise Avenue and Intrepid Drive will transition from light industrial (over the longer term) to mixed use development adjacent Buchanan Park, providing a connection between residential development north of the precinct (Evans and Margaret Streets) and the Lifestyle Retail area.



2.3 Objectives

OBJECTIVES	
LAND USE	
O1	To significantly increase the precinct's working population.
O2	To encourage investment in health, education and employment related uses.
O3	To provide for the growth and expansion of health and educational institutions that service local and regional communities.
O4	To reinforce the specialist economic function of the Precinct by providing for ancillary health, education, retail and commercial uses, including accommodation.
O5	To deliver a minimum of 8,500 jobs within the precinct, discourage underdevelopment of land and increase opportunities for professional employment.
O6	To create high quality, high amenity mixed use areas that offer a range of commercial, retail, entertainment, lifestyle, recreation and leisure options.
O7	To encourage the consolidation of lots for higher density development in the Mixed Use sub-precinct along Clyde Road and surrounding Berwick Station.
O8	To facilitate the transition of existing industrial land to mixed use adjacent Clyde Road and in proximity to Buchanan Park in the long term
O9	To ensure the Corporate Centre is conducive to a range of commercial enterprises including local manufacturing and emerging businesses and international global entities.
IMAGE AND CHARACTER	
O10	To develop a high quality, public street-based, urban environment that is pedestrian-orientated and supports intensive development over time.
O11	To ensure Sir Gustav Nossal Boulevard and Kangan Drive present a distinct sense of place, destination and entry.
O12	To encourage safe and well managed evening and nighttime uses and upper level accommodation within the Lifestyle Retail and Mixed Use sub-precincts.
O13	To provide an environment conducive to the integration of accommodation with commercial, office, educational, health and retail land uses.
O14	To deliver a network of public spaces (including urban streets, urban plazas, and linear open spaces) that provide high quality landscape outcomes.
O15	To improve walking and cycling connections within the precinct and between, Berwick Village (Princes Highway), Berwick Station, Sweeney Reserve, Gloucester Avenue, Kangan Drive and Hallam Bypass Trail.

O16	To ensure high quality commercial development positively addresses the Princes Freeway and Clyde Road.
O17	To recognise indigenous and non-indigenous heritage.
OPEN SPACE	
O18	To provide climate-responsive open spaces within the urban environment and retain existing remnant vegetation.
O19	To ensure public parks and trails can be easily seen and accessed by users of adjacent public streets and development.
O20	To ensure adequate pedestrian and sunlight access is maintained to Buchanan Park.
TRANSPORT AND MOVEMENT	
O21	To establish an integrated transport network which promotes viable transport alternatives to the use of private vehicles, maximises access to public transport and encourages walking and cycling within the precinct, to Berwick Village and for local residents.
O22	To facilitate a useful, safe, direct and continuous network of pedestrian and cyclist paths to and through the Precinct.
O23	To facilitate accessible pedestrian and cycle links along and across the rail line, where practical, connecting to adjacent residential areas, paths, trails and desire lines.
INTEGRATED WATER MANAGEMENT AND UTILITIES	
O24	To promote built form and transport outcomes that reduce carbon emissions, increase the use of renewable energy technologies, and minimise greenhouse gas emissions.
O25	To deliver an integrated water management system that reduces reliance on reticulated potable water, increases the re-use of alternative water, minimises flood risk, ensures the environmental health of waterways and bays, protects public health, and contributes towards a sustainable and green urban environment.
O26	To ensure development appropriately responds to and avoids detrimental impact to the gas transmission pipeline.
STAGING	
O27	To ensure that development staging is co-ordinated with the delivery of key local and state infrastructure.



2.4 Summary land budget

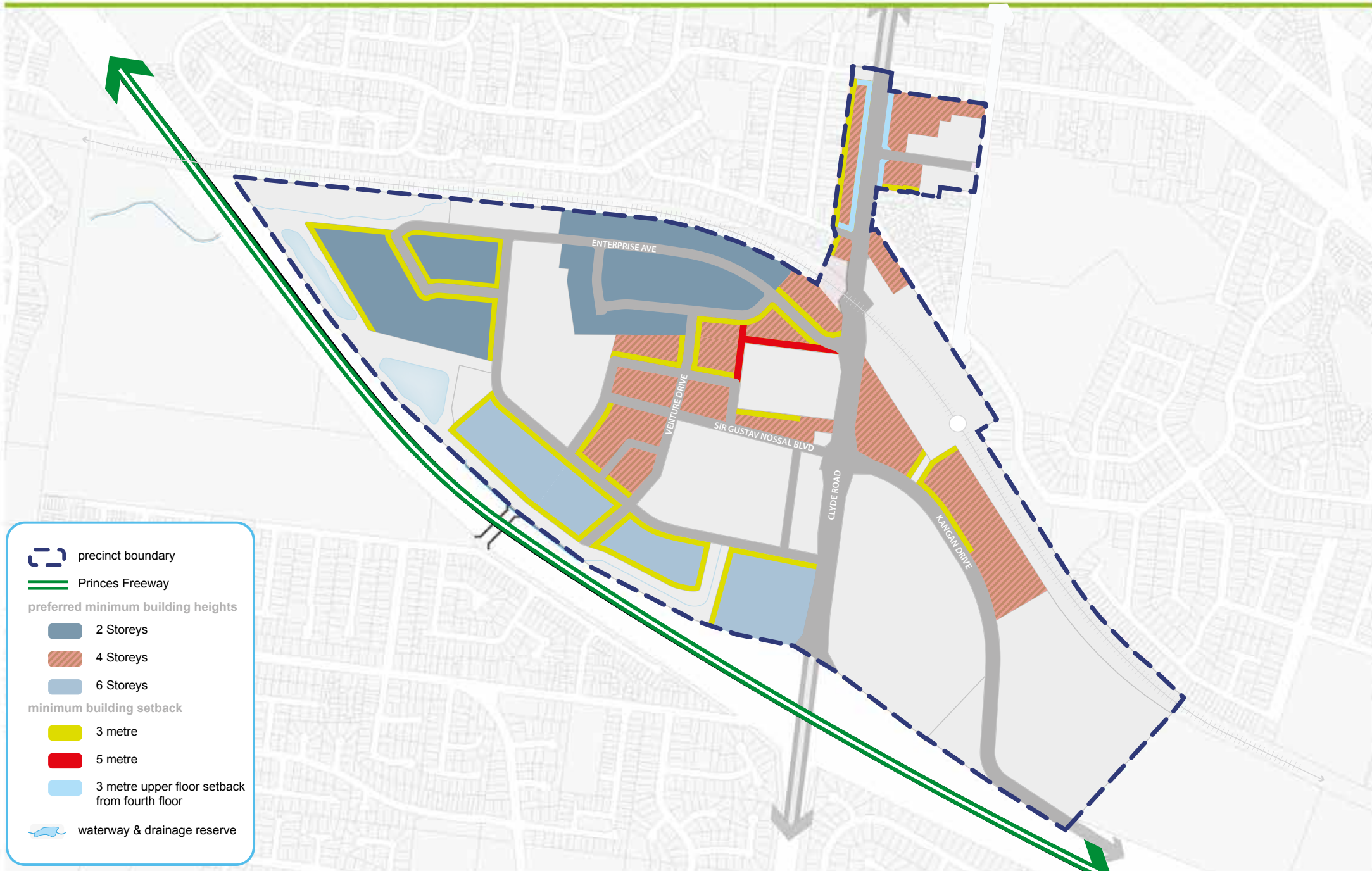
The Precinct is estimated to yield approximately 8,500 jobs across the education, health, office, commercial, retail, entertainment, leisure services and manufacturing sectors.

The Precinct is expected to deliver over 1,030 dwellings with a mixture of high density developments, equating to a long term average density of approximately 54 dwellings/NDAR. Based on an average household size of 2.2 persons for high density dwellings, the future population of the CDP is estimated at approximately 2,300 residents.

The Summary Land Use Budget sets out the land area for various uses in the CDP (see Table 1).

Table 1 Summary Land Use Budget

	HECTARES	% OF TOTAL
TOTAL PRECINCT AREA (HA)	122.43	100.00%
SERVICES AND PUBLIC LAND	34.85	28.47%
Arterial Road	5.48	4.48%
Non-Arterial Road	5.81	4.74%
Public Transport Facilities / Reserve	9.73	7.95%
Waterway & drainage reserve	9.47	7.74%
Gas Easements	0.79	0.65%
Council-owned Land	2.87	2.34%
Local Network Park	0.70	0.6%
EXISTING DEVELOPMENT (May be available for redevelopment)	48.48	39.60%
Health	12.82	10.47%
Education	26.85	21.93%
Industrial / Mixed Use	8.73	7.13%
Utilities	0.08	0.07%
NEW NET DEVELOPABLE AREA (precinct area less services and public land & existing development)	39.09	31.93%
Mixed Use including residential	19.12	15.62%
Employment	19.98	16.32%



3.0 IMPLEMENTATION

3.1 Image and character

REQUIREMENTS

	Street trees must be planted on both sides of all new roads and streets (excluding laneways) at regular intervals appropriate to tree size at maturity, as described below, unless otherwise agreed by the responsible authority or specified by the CDP:								
R1	<table><tr><th>Average interval</th><th>Tree size (in height)</th></tr><tr><td>8–10 metres</td><td>Small trees (less than 10 metres)</td></tr><tr><td>10–12 metres</td><td>Medium trees (10–15 metres)</td></tr><tr><td>10–15 metres</td><td>Large trees (15 metres or greater)</td></tr></table>	Average interval	Tree size (in height)	8–10 metres	Small trees (less than 10 metres)	10–12 metres	Medium trees (10–15 metres)	10–15 metres	Large trees (15 metres or greater)
Average interval	Tree size (in height)								
8–10 metres	Small trees (less than 10 metres)								
10–12 metres	Medium trees (10–15 metres)								
10–15 metres	Large trees (15 metres or greater)								
R2	<p>Trees (native, indigenous and exotic) in public spaces, parks and streets must be:</p> <ul style="list-style-type: none">• Larger species wherever space allows (to facilitate continuous canopy cover);• Planted in modified and improved soil to support tree establishment;• Appropriate in size to nature strips, nearby utilities and built form; and• Suitable for local conditions.								
R3	Consistent public lighting, furniture, informational and way-finding signage must be employed across the Precinct as approved by the responsible authority.								
R4	Along Sir Gustav Nossal Boulevard tree planting must have regard to the high pressure gas pipeline and where trees are to be planted within 3m of the gas pipeline take the form of removable tub bases located within planter boxes, in accordance with the cross-section at Appendix 4.1.								
R5	Commercial use within the Health and Education sub-precinct must be ancillary to the existing education and health institutions.								
R6	Ground level façades along Sir Gustav Nossal Boulevard and Venture Drive ‘high street’ must be broken into sections no greater than 8 metres wide to create a vertical rhythm and establish a fine grain built form.								
R7	<p>Buildings along Sir Gustav Nossal Boulevard and Venture Drive ‘high street’ must:</p> <ul style="list-style-type: none">• Provide primary pedestrian access to tenancies from this street;• Be built to the property boundary adjoining the street frontage;• Provide active street frontages; and• Provide canopies, verandahs, awnings along its entire length								

R8	All ground level shop fronts facing a street or public space must use clear glazing to allow views into the shop from the street, with a minimum of 60% of the shop front unobstructed by advertising, obtrusive internal shelving, false walls offset from the glazing, and whitewashed glazing or the like.
R9	Buildings within the Corporate Centre must address the street to ensure a clear and defined street address, maintain a high degree of visual and physical access at street level and facilitate pedestrian connections through the Corporate Centre (see Built Form Concept Plan Appendix 4.1). Pedestrian access to each building must be clearly articulated within the façade of the building in the form of a forecourt, foyer, concourse, vestibule, loggia or the like.
R10	Buildings within the Corporate Centre addressing Princes Freeway and Clyde Road must provide a consistent commercial presentation, demonstrate a high quality contemporary built form and include quality materials and finishes.
R11	Residential buildings greater than four storeys must be spaced to equitably distribute access to sunlight, maintain residential privacy, maximise opportunities to a view or outlook between buildings, ensure adequate sun penetration at street level, and allow for tree planting.
R12	<p>All buildings must incorporate features of interest into the built form and landscape, such as:</p> <ul style="list-style-type: none"> • Parapets, awnings, shade structures, roof elements; • Sculptured façades of recesses and projections to provide variation and depth; • Vertical elements that provide segmentation; • Balconies and verandahs that define building floors or storeys; • Façade articulation; and • Feature materials and colours.
R13	All residential developments adjoining or adjacent the railway line or the City Gate Facility must undertake a Noise Impact Assessment, at the developers cost, and incorporate appropriate noise attenuation measures, to the satisfaction of the responsible authority.
R14	Buildings adjacent to open spaces must be sited and designed to address the open space and provide passive surveillance of linear corridors, easements and other public areas through the siting of windows, balconies and access points.

R15	<p>Development and use of land within the Mixed Use sub-precinct that is transitioning from light industrial to mixed use, must demonstrate through contextual analysis:</p> <ul style="list-style-type: none"> • How it will integrate with adjacent development including public streets and public spaces; • How potential conflict with nearby land uses is managed; • For properties abutting Buchanan Park: <ul style="list-style-type: none"> • How safe and direct pedestrian access will be facilitated between Buchanan Park and Enterprise Avenue; and • How the development will positively address Buchanan Park.
R16	Subdivision layouts must provide for buildings to front or otherwise address all roads, including arterial roads and freeways.
R17	Fencing adjoining open space must be low in scale and visually permeable.
R18	Goods and materials storage and refuse areas must not be visible from public areas.
R19	Views from public streets to building plant and equipment, with the exception of on-site power generation plant, must be appropriately screened using durable and attractive materials and incorporating appropriate landscape treatments.
GUIDELINES	
G1	All retail and commercial buildings in the Lifestyle Retail, Mixed Use sub-precincts should be built to the property boundary, except where useable public spaces or mid-block pedestrian links are provided (see Built Form Concept Plan Appendix 4.1).
G2	Ground level floor-to-ceiling heights within the Lifestyle Retail and Mixed Use sub-precincts, should be a minimum of 4.2 metres.
G3	Continuous walls should not exceed 10 metres in length without a 1m setback change to its alignment or include articulation, fenestration, material change or breaks in built form that provide relief and visual interest.
G4	<p>Any building that doesn't achieve the Preferred Minimum Building Height on Plan 5, should demonstrate how;</p> <ul style="list-style-type: none"> • Built form meets the design and floor space objectives of the CDP, and • Provides an exemplary public realm.
G5	High quality and cohesive landscape treatments should be provided throughout the Precinct, within the streetscape and in local open spaces, particularly in the Corporate Centre, the Lifestyle Retail and Mixed Use sub-precincts.

G6	Subdivision design, street names, landscape design and architectural detailing should incorporate design elements which respond to and interpret local heritage.
G7	Variations in street tree species should be used to reinforce and support the road hierarchy, facilitate continuous canopy cover or create visual cues in appropriate locations such as forecourts to building entries, pedestrian spaces, the termination of view lines and key intersections.
G8	Street trees should be used consistently across land use sub-precincts to create streetscape character and enhance the pedestrian experience.
G9	All subdivision and development should demonstrate flexibility and adaptability to allow for staging and long term intensification and redevelopment.
G10	Uses generating high levels of pedestrian activity including outdoor dining, should be located along Sir Gustav Nossal Boulevard, Venture Drive, surrounding Berwick Station and Reserve Street.
G11	Residential buildings and dwellings within the Mixed Use sub-precinct along Kangan Drive may incorporate a landscaped setback and grade change as a transition from the public footpath to private residential units that have direct pedestrian access and/or shared entrances to the street.
G12	Residential buildings and dwellings should have a minimum front setback of 3 metres. Verandahs, balconies, entrance structures and elements of visual interest may project forward of the front building line.
G13	Shops fronting public spaces and streets should be attractive and secure when closed. Roller shutters should not be used.
G14	The consolidation of lots to enable larger building footprints should be pursued on lots fronting Clyde Road.
G15	Buildings greater than four storeys (excluding within the Corporate Centre) should incorporate upper floor setbacks of a minimum of 3 metres at the fifth level and above (in the form of balconies etc.) to reduce visual bulk, minimise overshadowing of public spaces and mitigate wind effects at street level.
G16	<p>Canopies, verandahs and awnings should be:</p> <ul style="list-style-type: none"> • Integrated into the building design, with signage; • Incorporated into the building frontage to provide weather protection; • Designed to allow tree canopies to develop, and • Partly transparent to allow light penetration or project over the property boundary along key pedestrian thoroughfares if they do not impede the safe and efficient movement of service vehicles and are generally in accordance with any relevant road encroachment guideline.

G17	Roofs of buildings should be used for: <ul style="list-style-type: none"> • Solar and wind power generation; • Solar water heating; • Rain water collection and reuse; and • Roof gardens, decks and terraces.
G18	Buildings on corner sites should be designed to address both street frontages, through the use of fenestration, architectural elements, awnings, pedestrian entries and active uses.
G19	Service and delivery access to buildings should be screened from public view by way of built form or landscaping.
G20	All public spaces should respond appropriately to the Design for Access and Mobility Standards (AS 1428), to ensure access by mobility impaired.

3.2 Land use

The increased development within the precinct will result in increased employment opportunities for the local community. The table below estimates the total employment generation the precinct may achieve when development is complete in the long term.

Table 2 Employment creation

LAND USE	JOBS/M ²	QTY IN CDP (NLA OFFICE)	QTY IN CDP (NLA RETAIL)	EST. JOBS
Corporate Centre	20	98,582m ²		4929
Lifestyle Retail	30		5,256m ²	175
Mixed Use	40	9,893m ²	4,392m ²	412
Sub-total estimated		108,475m ²	9,648m ²	5,516
Existing Health				1,905
Existing Education				831
Existing Industrial				200
TOTAL ESTIMATED				8,452

3.3 Community

3.3.1 Community

REQUIREMENTS	
R20	All community/civic facilities must be designed to front and be directly accessed from a public street.
R21	Land to be vested in Council as open space or for the purposes of a community facility must be remediated of any contaminants and accompanied by statements of audit under the <i>Environmental Protection Act 1970</i> to the satisfaction of the responsible authority, before the transfer of land.
GUIDELINES	
G21	Community facilities should be planned and designed to have the flexibility and capacity to meet the changing needs of the community and provide for a range of uses. Consideration should be given to shared spaces which can be used by agreement with Casey City Council or by other community service providers and not-for-profit organisations.



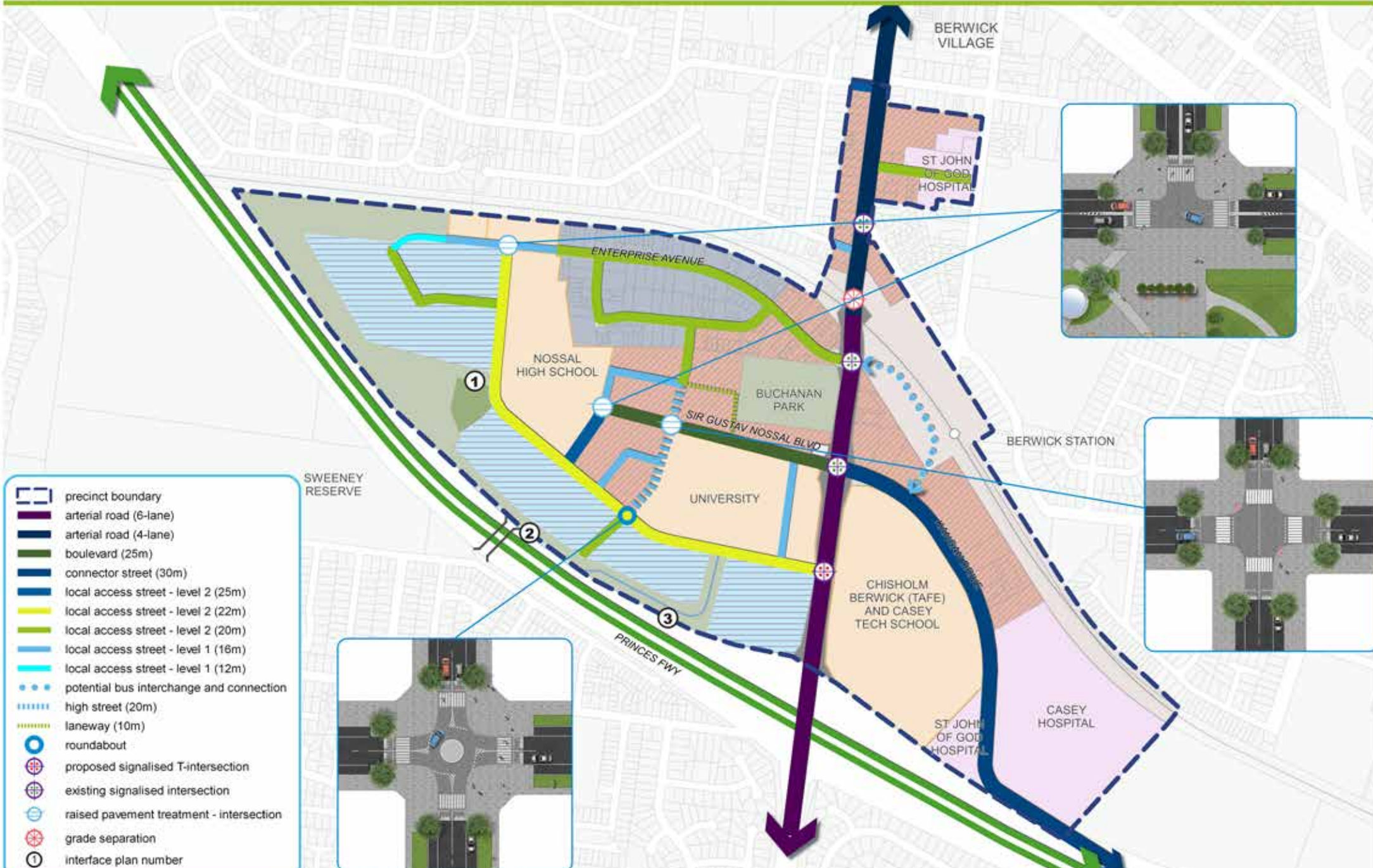
3.4 Open space

Table 3 Open space delivery

PARK ID (REFER PLAN 6)	AREA (HA)	PARK TYPE	LOCATION AND ATTRIBUTES	RESPONSIBILITY	CREDITED UNDER CLAUSE 52.01
LP01	0.7	Passive open space	Council park to be co-located with future wetland and linear park (minimum of 70m in width and length).	Casey City Council	Y
LP02 Buchanan Park	2.77	Passive open space	Existing centrally located Council park adjacent Clyde Road (includes skate park and play equipment).	Casey City Council	N
LP03	0.1	Pedestrian walkway	Council reserve providing pedestrian link from Kangan Drive to Berwick Station and Bus Interchange.	Casey City Council	N
LP04	0.8	Linear park (gas transmission easement)	Linear park along gas transmission easement west of Nossal High School that provides a shared path to connect adjacent open waterways and the broader community. Designed to protect the integrity of the existing high pressure gas pipeline.	Casey City Council	N

REQUIREMENTS	
R22	All parks and public landscaped areas must be located, designed and developed generally in accordance with the relevant description in Table 3 unless otherwise approved by the responsible authority and constructed to enable practical maintenance and planted with species suitable to the local climate and soil conditions.
R23	The design of waterway corridors and the linear park (gas transmission easement) must facilitate recreation uses, where this does not conflict with the primary function of the land.
R24	<p>Further to the public open space contribution required by Clause 52.01 of the Casey Planning Scheme, this provision sets out the amount of land to be contributed by each property in the CDP area and consequently where a cash contribution is required in lieu of land.</p> <p>For the purposes of 52.01, a local park specified in Table 3 Open Space Delivery Guide is public open space (unless otherwise specified in Table 3). A contribution must be made as follows:</p> <ul style="list-style-type: none"> • Where public open space shown on the lot in Plan 6 and specified in Table 3 of this plan is equal to 10% (5% for employment land) of the lot's NDA that land must be transferred to Council at no cost. • Where a public open space shown on the lot in Plan 6 and specified in Table 3 of this plan is equal to 10% (5% for employment land) or less than 10% (5% for employment land) of the lot's NDA: <ul style="list-style-type: none"> • the relevant land must be transferred to Council at no cost; and • a cash contribution is to be made to Council to bring the total public open space contribution to a value equal to 10% (5% for employment land) of NDA <p>Where public open space shown on the land in Plan 6 and specified in Table 3 of this plan is greater than 10% (5% for employment land)) the relevant land must be transferred to Council at no cost. In this case Council will compensate the landowner, at a time to be agreed, for the amount of land provided in excess of 10% (5% for employment land) but no greater than the difference between 10% (5% for employment land) and the amount of land specified as local park on Plan 6.</p>

GUIDELINES	
G22	Parks and open spaces should contain extensive tree planting and retain existing remnant vegetation.
G23	The design and layout of open space should maximise water efficiency, stormwater quality and the long term viability of vegetation through the use of WSUD initiatives.
G24	Street furniture should be located in areas which are highly visible and closer to or adjoining major pedestrian/cycle routes and gathering spaces.
G25	Local parks should be designed to cater for a broad range of users by providing a mix of spaces and planting to support both structured and unstructured recreational activities and play opportunities for all ages and abilities.
G26	Crime Prevention Through Environmental Design principles (CPTED) should inform the design of open spaces and associated infrastructure.
G27	Design of the drainage easement should maximise the amenity value of that open space and provide for flexible recreational opportunities, without restricting flood management.
G28	All public spaces should respond appropriately to the Design for Access and Mobility Standards (AS 1428).



3.5 Transport and movement

3.5.1 Public transport

REQUIREMENTS

R25	<p>Bus stop hard stands with direct and safe access to a pedestrian path must be constructed on or adjacent the land:</p> <ul style="list-style-type: none"> • At locations approved, in writing by Public Transport Victoria (PTV); • At no cost to PTV; and • In accordance with the Public Transport Guidelines for Land Use and Development and the Disability Discrimination Act – Disability Standards for Accessible Public Transport 2002, to the satisfaction of PTV.
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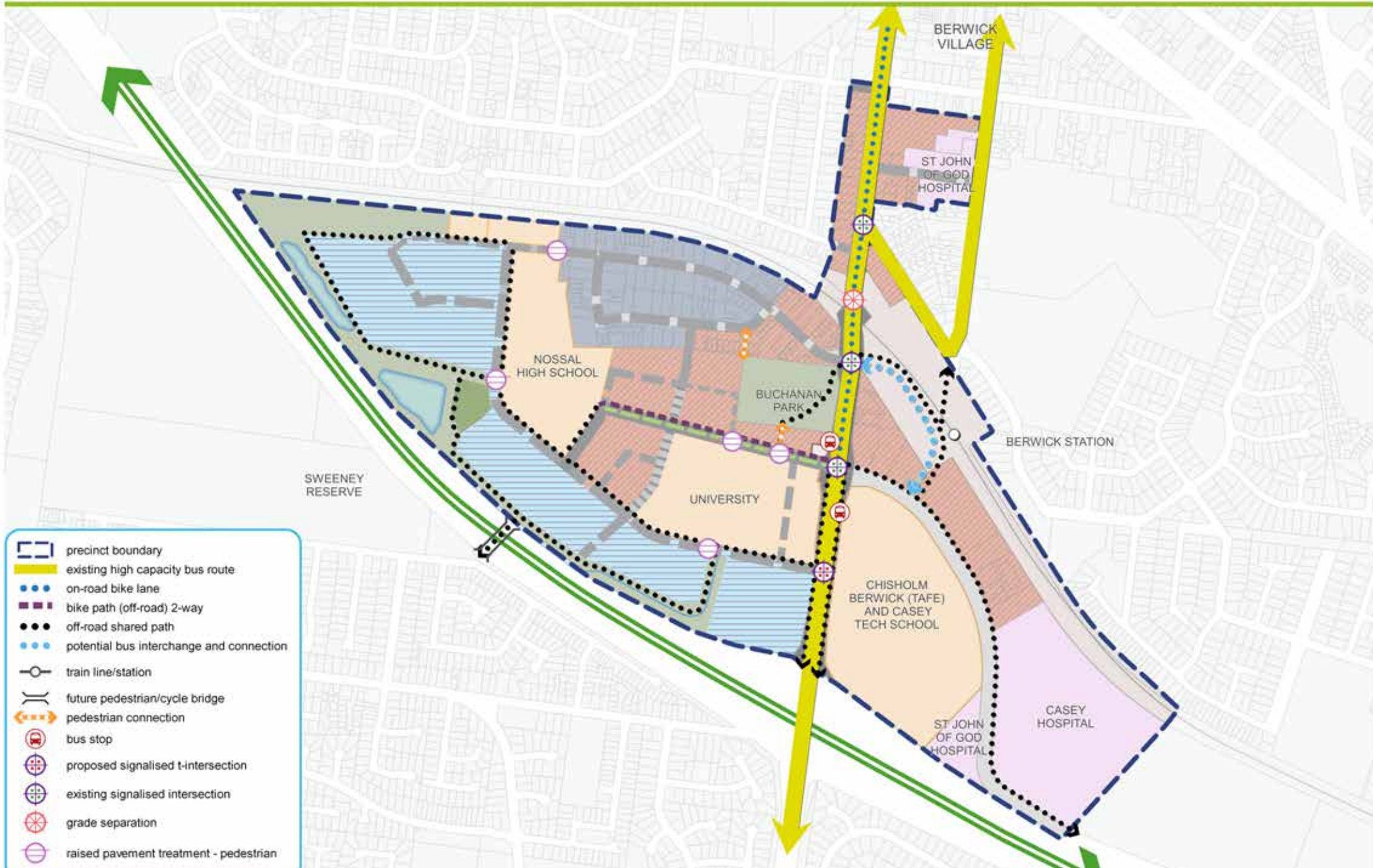
3.5.2 Walking and cycling

REQUIREMENTS

R26	<p>Design of all new streets and arterial road intersections must give priority to the requirements of pedestrians and cyclists by providing:</p> <ul style="list-style-type: none"> • Footpaths of at least 1.5 metres on both sides of all streets and roads unless otherwise specified by the CDP; • Shared paths or bicycle paths of 3.0 metres where shown on Plan 8 or as shown on the relevant cross-sections in Appendix 4.2 ; • Safe, accessible and convenient crossing points of roads and local streets at all intersections, including key desire lines and connecting key land uses (e.g. health and educational institutions and retail areas); • Safe pedestrian crossings of Clyde Road at all intersections and at key desire lines appropriate to the function of the road and public transport provision; • Pedestrian priority crossings on any slip lanes, at arterial intersections; and • Safe and convenient transition between on and off-road bicycle networks, all to the satisfaction of the coordinating roads authority and the responsible authority.
R27	<p>Unless otherwise agreed by Vic Roads and the responsible authority, a pedestrian and cycle overpass must be provided to connect Sir Gustav Nossal Boulevard, via Venture Drive across Princes Freeway to Sweeney Reserve, as identified in Plan 8.</p>
R28	<p>Bicycle priority at intersections of streets with dedicated off-road bicycle paths must be achieved through strong and consistent visual and physical cues and supportive directional and associated road signs.</p>
R29	<p>Pedestrians and cycle links and/or linear green links must be between 6-10 metres in width, include appropriate landscape, shared paths and passive surveillance opportunities to ensure these spaces are active, safe and attractive.</p>

GUIDELINES

G29	<p>Alternative private vehicle facilities including motorbike spaces and electric car charging should be provided within new car parking areas.</p>
G30	<p>Through-block pedestrian connections should be located towards the centre of the street block, no more than 60m from the next intersection or pedestrian connection.</p>
G31	<p>Connections between commercial/office buildings, their car parking areas and street activity should be safe, direct and encourage pedestrian movement.</p>



3.5.3 Road network

REQUIREMENTS	
R30	<p>Unless otherwise agreed by the responsible authority and Vic Roads, works to upgrade the Sir Gustav Nossal Boulevard leg of the Clyde Road, Sir Gustav Nossal Boulevard and Kangan Drive intersection (see Appendix 4.3) must be provided as part of the development of land in the Lifestyle Retail sub-precinct. In the event that the responsible authority and Vic Roads agree that the works may be provided at a later date, the owner of the land must enter into an agreement under Section 173 of the Act to provide for the timing, funding and delivery of the works to the satisfaction of the responsible authority and Vic Roads.</p> <p>This requirement does not apply to a development for an education centre by or on behalf of the public land manager.</p>
R31	<p>The future developer funded upgrade to the intersection of Clyde Road, Sir Gustav Nossal Boulevard and Kangan Drive must be in accordance with the cross-section at Appendix 4.2 the functional layout at Appendix 4.3, including the removal of slip lanes, and provided as part of the development of land in the Lifestyle Retail sub-precinct.</p>
R32	<p>Unless otherwise agreed by Vic Roads and the responsible authority, a signalised developer funded T-intersection on Clyde Road located 175m north of the Princes Freeway interchange, must be provided as part of the delivery of the subdivision of the Corporate Centre land as shown on Plan 7 and Appendix 4.3.</p>
R33	<p>The future developer funded upgrade to the intersection of Clyde Road and Enterprise Avenue must be in accordance with the functional layout plan at Appendix 4.3, and undertaken to achieve the satisfactory operation of the intersections along Clyde Road within the precinct.</p>
R34	<p>Vehicle access to lots fronting arterial roads must be provided from a rear internal road.</p>
R35	<p>Any road and/or path crossing the high pressure gas pipeline must be designed to protect the integrity of the gas pipeline to the satisfaction of the high pressure gas pipeline owner/operator.</p>

GUIDELINES	
G32	<p>Slip lanes should be avoided at all intersections within the CDP due to the highly pedestrianised nature of the precinct, unless adequate strategic justification and absence of a safe and reasonable alternative warrants their inclusion, to the satisfaction of the responsible authority.</p>
G33	<p>Street block lengths should not exceed 100 metres. Intervals between blocks may take the form of either trafficable street or pedestrian passage of no less than 4 metres in width. Where larger corporate uses are proposed, a similar level of public walking and cycling permeability should be provided.</p>
G34	<p>Streets where high vehicular and service vehicle movement is anticipated should be addressed with pedestrian refuge points so that a shared environment for pedestrians, cyclists and vehicles can be achieved.</p>

3.6 Integrated water management and utilities

3.6.1 Integrated water management

REQUIREMENTS	
R36	<p>Prior to subdivision or development an Integrated Water Management Strategy must be approved by Melbourne Water and the responsible authority to demonstrate how:</p> <ul style="list-style-type: none"> • Overland flow paths and piping within road or other reserves will be connected and integrated across property/parcel boundaries; • Melbourne Water freeboard requirements for overland flow paths will be adequately contained within road or other reserves; • Lots and/or building envelopes will be filled above the 1 in 100 ARI year flood event; • Lots will deliver Integrated Water Cycle Management (IWCM) requirements of the CDP and any approved Integrated Water Management Plan or Strategy; • Development within the Corporate Centre will prevent blockages prior to entering the downstream drainage system through the use of litter traps, as required by Melbourne Water and the responsible authority.
R37	<p>Final design and boundary of the constructed waterway corridor, retarding basins, stormwater quality treatment infrastructure and any associated paths, boardwalks, bridges and planting must be to the satisfaction of Melbourne Water and the responsible authority.</p>
R38	<p>Stormwater runoff from development must meet or exceed the performance objectives of the CSIRO Best Practice Environmental Management Guidelines for Urban Stormwater (1999) prior to discharge to receiving waterways, unless otherwise approved by Melbourne Water and the responsible authority.</p>
R39	<p>Development staging must provide for the delivery of the ultimate waterway and drainage infrastructure. Where this is not possible development proposals must demonstrate how any interim solution adequately manages stormwater generated from the development and how this will enable delivery of an ultimate drainage solution, all to the satisfaction of the responsible authority and Melbourne Water.</p>
R40	<p>Ultimate stormwater management assets and associated land must be provided by the developer, at their cost, prior to the issue of a Statement of Compliance for subdivision.</p>

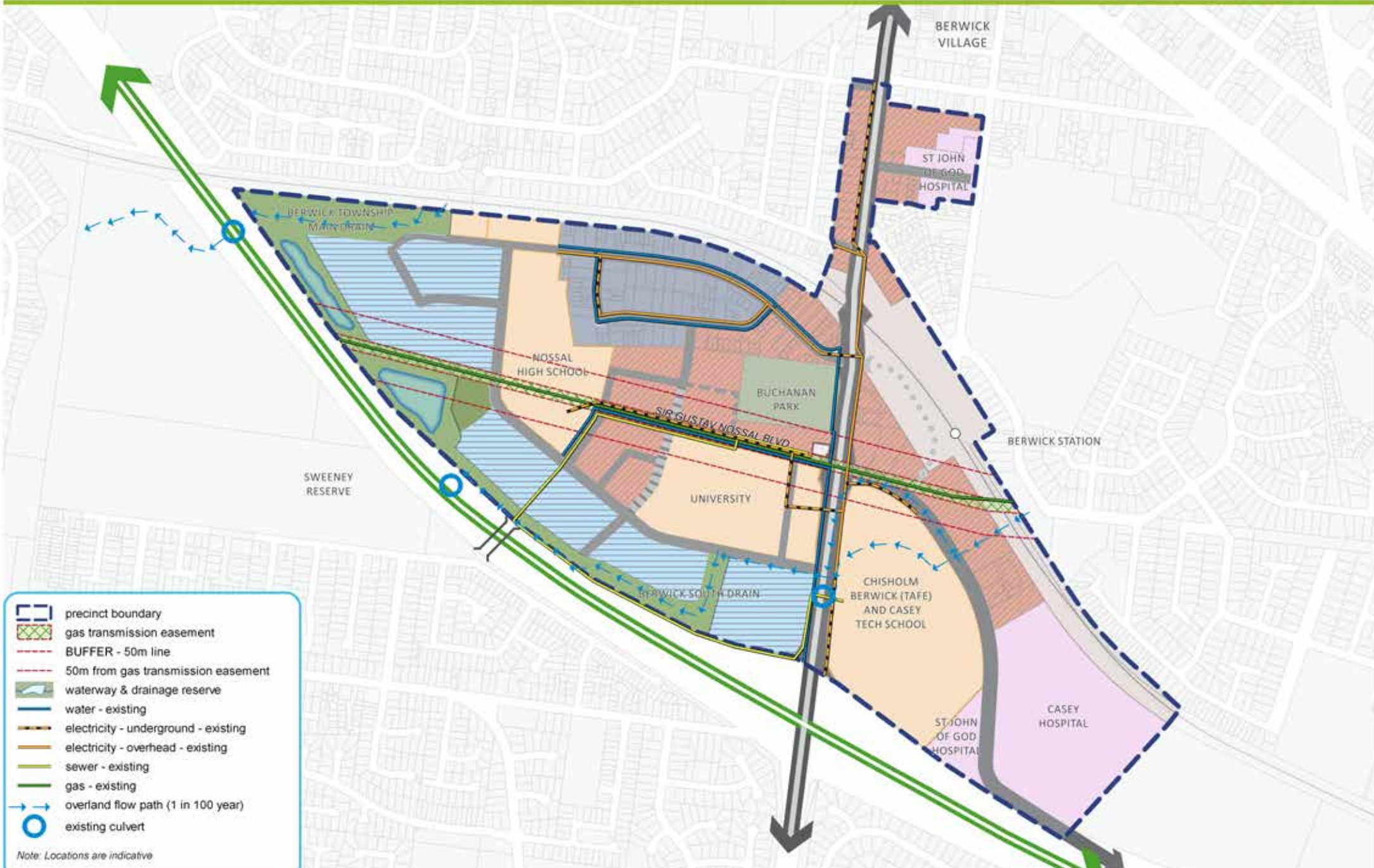
R41	<p>In the event that Melbourne Water and the responsible authority agree to an interim storm water management solution, the developer must:</p> <ul style="list-style-type: none"> • Provide the land required for the ultimate drainage solution prior to the issue of a Statement of Compliance for subdivision; and • Demonstrate that the interim solution will not result in the ultimate solution becoming unviable.
R42	<p>Development must reduce reliance on potable water by increasing the utilisation of fit-for-purpose alternative water sources such as storm water, rain water and recycled water. This may involve entering into partnership projects with the water authorities.</p>

Table 4 Stormwater drainage infrastructure

ID	DESCRIPTION	LOCATION	AREA (HA) OR CORRIDOR WIDTH	RESPONSIBILITY
Southern wetland	Wetland to treat southern catchment to best practice before discharge into Berwick South Main Drain.	South of gas transmission easement and adjacent future Council Park.	Total footprint 2.35ha.	Casey City Council
Northern wetland	Wetland to treat northern catchment to best practice before discharge into Berwick Township Main Drain.	Linear wetland to sit adjacent future commercial land, south of Berwick Township Main Drain.	Total footprint 1.58ha.	Casey City Council
Southern waterway	Existing southern waterway – Berwick South Main Drain.	Centrally located within waterway corridor along the southern boundary of the Precinct abutting Princes Freeway.	Width of waterway 40m reducing to 25m where the waterway exits the Precinct. Hydraulic width minimum of 20m.	Melbourne Water (bed and banks of waterways only)/ Casey City Council
Northern waterway	Existing northern waterway – Berwick Township Main Drain.	South of railway line along Precinct's northern boundary adjacent commercial land.	Width of corridor 55m at eastern end, widening to 77m at western end.	Melbourne Water (bed and banks of waterways only)/ Casey City Council

GUIDELINES

G35	The design and layout of roads, road reserves, and public open space should optimise water use efficiency and long-term viability of vegetation and public uses through the use of Water Sensitive Urban Design initiatives, including the use of locally treated storm water for irrigation purposes, where practical.
G36	Developments should include Integrated Water Management systems that are designed to contribute to a sustainable and green urban environment through: <ul style="list-style-type: none"> Supporting and enhancing habitat values for local flora and fauna species; Diversifying water supply; and Enabling future harvesting and/or treatment and re-use of stormwater.
G37	Land required for Integrated Water Management systems (such as stormwater harvesting, aquifer storage and recharge, grey water recycling etc.) should be incorporated within multi-storey developments and the precinct open space system, where practicable.



3.6.2 Utilities

REQUIREMENTS	
R43	Recoating of the gas pipeline and mandatory slabbing must be undertaken when upgrades to Sir Gustav Nossal Boulevard, new road construction over the gas easement, or high density/sensitive uses (as defined by Australian Pipeline Standard AS2885 and the Berwick Campus Development Plan AS 2885.1 Safety Management Study Workshop and Report) within 50m of the high pressure gas pipeline are proposed, to the satisfaction of the responsible authority and the gas transmission easement owner/operator.
R44	Buildings adjacent to the high pressure gas transmission easement and City Gate facility must be designed to ensure evacuation gathering areas are away from the gas transmission easement and City Gate facility.
R45	All new electricity supply infrastructure (excluding substations and cables with voltage greater than 66kv) must be provided underground.
R46	<p>Before development commences, functional layout plans are to be submitted of the road network showing the location of all:</p> <ul style="list-style-type: none"> • Underground services; • Street lights; • Crossovers; and • Street trees. <p>A typical cross-section of each street is also to be submitted showing above and below ground placement of services, street lights and trees.</p> <p>The plans and cross-sections must demonstrate how services, crossovers and street lights will be placed so as to achieve the road reserve width (consistent with the road cross-sections outlined in this CDP) and accommodate the minimum level of street tree planting. If required the plan and cross sections will nominate which services will be placed under footpaths or road pavement. The plans and cross sections are to be approved by the responsible authority and all relevant service authorities before development commences.</p>
R47	The developer must enter into an agreement with South East Water requiring the subdivision to be reticulated with a dual pipe recycled water system to provide for the supply of recycled water from a suitable source or scheme to all dwellings or commercial buildings and open space reserves within the development.
R48	Irrespective of whether South East Water has entered into an agreement as required by R47, any plan of subdivision must contain a restriction which provides that no dwelling or commercial building may be constructed on any lot unless the building incorporates dual plumbing for the use of recycled water in toilet flushing and garden watering.

R49	Traffic lights or street lights within the gas transmission easement must be located a minimum of 3 metres from the high pressure gas pipeline and on wide bases to protect the integrity of the gas pipeline.
R50	Canopy trees planted within the gas transmission easement must be of a suitable species and located a minimum of 3 metres from the gas pipeline, to the satisfaction of the high pressure gas pipeline owner/operator.
GUIDELINES	
G38	Delivery of underground services should be coordinated, located and bundled (utilising common trenching) to facilitate tree and other planting within road verges.
G39	Above-ground utilities, including electrical substations sewer pump stations, fire hydrants and other building services, should be located outside of key view lines, pedestrian thorough fares or appropriately screened to the satisfaction of the responsible authority.
G40	Development should have regard to the relevant actions outlined in the Berwick Campus Development Plan AS 2885.1 Safety Management Study Workshop and Report, April 2015.
G41	Land within the gas transmission easement west of Nossal High School should be utilised for open space and recreational uses as outlined in Table 3 in consultation with the gas pipeline owner/operator.

3.7 Infrastructure delivery and development staging

3.7.1 Infrastructure delivery

The Precinct Infrastructure Plan (PIP) at Table 5 sets out the infrastructure and services required to meet the needs of the development in the Precinct. The infrastructure items and services are to be provided through a number of mechanisms including:

- Subdivision construction works by developers;
- Agreements under Section 173 of the Planning and Environment Act 1987;
- Utility service provider agreements/requirements;
- Relevant development/infrastructure contribution plans; and
- Capital works projects by Council and /or State government agencies.

Table 5 Precinct Infrastructure Plan

CATEGORY	TITLE	DESCRIPTION	TIMING *	FUNDING SOURCE	COST **
Intersection	New east-west/Clyde Road T-intersection	A new signalised T-intersection located 175m north of the Princes Freeway interchange must be provided as part of the delivery of the subdivision of the Corporate Centre land as shown on Plan 7 and Appendix 4.3.	M	Landowners/developers adjacent to and requiring access from Clyde Road via the new intersection through S173 agreements with Council.	Approximately \$4,000,000
Intersection	Upgrade Sir Gustav Nossal Boulevard/Clyde Road intersection	Upgrade of the existing four way intersection must be provided as part of the development of the land in the Lifestyle Retail sub-precinct, as shown at Appendix 4.3.	S	Landowners/developers requiring access from Clyde Road via the existing intersection through S173 agreements with Council.	Approximately \$3,000,000
Bridge (pedestrian/cycle)	Princess Freeway to Sweeney Reserve pedestrian/cycle bridge.	Construction of a pedestrian and cycle overpass in the form of a bridge connecting the Berwick HEP over Princes Freeway to Sweeney Reserve and established Berwick community. Completes a missing link in the PBN and provides an important connection within the Metropolitan Trail Network.	L	Three way split (33%) between Council, State and Precinct. Council to provide 33% to service local community within Municipality. State to fund 33% via PBN and MTN regional facilities for the State of Victoria. Landowners/developers of precinct to fund 33% based on increased student/jobs/resident numbers over the life of the plan. Funding via a S173 Agreement with Council as part of the subdivision application will be based on the total agreed estimated cost of the bridge at \$8,500,000 and contributions from 1,155 new residents, 4000 new students and 5,500 new jobs (at a sqm rate).	Approximately \$8,500,000
Shared path	Clyde Road pedestrian/cycle shared path	Construction of a pedestrian and cycle shared path south of Sir Gustav Nossal Boulevard and Kangan Drive either side of Clyde Road to Princes Freeway.	L	N/A	Approximately \$600,000
Shared path	Kangan Drive pedestrian/cycle shared path	Upgrade of Kangan Drive to include an off road shared path.	L	Landowners/developers within Berwick HEP via S173 agreements.	Approximately \$300,000
Transport modelling	Microsimulation modelling for the Clyde Road and adjoining intersections	Contribution towards a Council-led microsimulation modelling project to better understand the traffic impacts of future development accessing Clyde Road and adjoining local roads.	S	Landowners/developers adjacent to and requiring access from Clyde Road via the existing or new intersection through S173 agreements with Council.	\$20,000 per landowner

*S = 0–5 years, M = 5–10 years, L = 10–15years

**costs are indicative and in \$2017.

3.7.2 Infrastructure and development staging

REQUIREMENTS

R51	<p>As part of development construction works, new development must meet the total cost of delivering the following infrastructure on or adjacent the land (except where provided for in an Infrastructure/Development Contributions Plan applying to the land):</p> <ul style="list-style-type: none"> • Connector and local streets; • Local bus stop infrastructure (where locations have been agreed in writing by the relevant public transport authority); • Landscaping of all existing and future roads and local streets; • Intersection works and traffic management measures along connector streets and local streets; • Council approved fencing and landscaping (where required) along arterial roads; • Pedestrian and bicycle paths in connector streets, local streets, local open space, the gas transmission easement, bridges, intersections and crossing points; • Appropriately scaled lighting along all roads major pedestrian thoroughfares traversing public open space and shared paths; • Basic improvements to local parks/open space; • Local drainage/waterway systems; and • Local street or pedestrian path crossings of waterways, and the new signalised intersection on Clyde Road.
R52	<p>Development staging must provide for the timely provision and delivery of:</p> <ul style="list-style-type: none"> • Connector streets; • Street links between properties, constructed to the property boundary; • Public land areas, including open space reserves; and • Connection of the on and off-road pedestrian and bicycle network.

R53	<p>OPEN SPACE DELIVERY</p> <p>All public open space must be finished to a standard that satisfies the requirements of the responsible authority prior to the transfer of the public open space, including:</p> <ul style="list-style-type: none"> • Removal of all existing and disused structures, foundations, pipelines and stockpiles; • Clearing of rubbish and weeds, levelled, top soiled and grassed with warm climate grass; • Provision of water tapping, potable and recycled water connection points; • Planting of trees and shrubs; • Provision of vehicular exclusion devices (fence, bollards or other suitable methods) and maintenance access points; • Installation of park furniture including barbeques, shelters, furniture, rubbish bins, local scale playground equipment, local scale play areas, and appropriate paving to support these facilities, consistent with the type of public open space listed in the open space delivery guide (Table 3); and • Construction of a 1.5 metre wide pedestrian path at the perimeter of the open space.
R54	<p>Staging will be determined largely by the development proposals on land within the precinct and the availability of infrastructure services. Development applications must demonstrate how the development will:</p> <ul style="list-style-type: none"> • Provide sealed road and walking/cycling access to each new allotment and development; • Deliver any necessary trunk services extensions, including confirmation of the agreed approach and timing by the relevant service provider; and <p>Provide for the delivery of relevant items in the Precinct Infrastructure Plan in this CDP.</p>