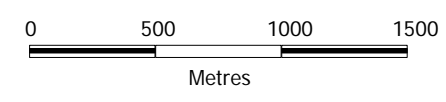


- Urban Growth Boundary
- Rail Line
- - - Sub-Regional Transit Corridor Reservation
- Possible Future Public Transport Interchange
- - - Recreational Trail
- ⌘ Pedestrian Bridge
- = Geelong Ring Road
- - - Proposed East-West Link Road (Arterial)
- Existing Arterial Road
- Watercourse
- Major Activity Centre (Sub-Regional Centre)
- Neighbourhood Activity Centre
- Local Activity Centre
- Local Shop
- Specialised Local Centre
- Indicative Secondary School
- Employment Land
- Mixed Use Corridor
- Medium-High Density Housing
- Conventional Density Housing
- Local/Active Parkland
- Biodiversity corridor/
Passive Parkland
- Indicative Indigenous Heritage Area
- Cemetery
- Existing Community Facility



Armstrong Creek
Urban Growth Plan -
Framework Plan



**Appendix 2 Analysis of Social Infrastructure Requirements for Armstrong Creek
(utilising ASR Planning for Community Infrastructure Hierarchy Model)**

Facilities / Services by Level	Recommended Provision Ratio for Growth Areas (Households)	Recommended Provision Ratio for Growth Areas (Population)	Estimated number of households	Estimated population	Crude Est. number of Facilities households/ population	Rec'mded land allocation (ha)	Est total Land allocation required households/ population
Level 1							
Govt Primary P – 6	1 / 3000	1 / 9000	22,000	54,000	7 / 6	4.5	31.5 / 27
Council Community Centres	1 / 3000	1 / 9000	22,000	54,000	7 / 6	0.8	5.6 / 4.8
Early Years Facilities Community Centres / School sites	1 / 3000	1 / 9000	22,000	54,000	7 / 6	Co-located	N/A
Neighbourhood Active Open Space	1 / 3000	1 / 6000	22,000	54,000	7 / 9	8	56 / 72.0
Neighbourhood Passive Open Space	1 / 333	1 / 1000	22,000	54,000	54 / 66	1	54 / 66
Youth Space within Community Centres / School sites	1 / 3000	1 / 9000	22,000	54,000	7 / 6	Co-located	N/A
Long Day Child Care	1 / 3000	1 / 9000	22,000	54,000	7 / 6	0.25	1.75 / 1.5
Sub Total Level 1							148.85 / 159.30
Level 2							
MCH (incorporated into every 2 nd Level 1 early years facility)	1 / 5333	1 / 16000	22,000	54,000	4 / 3	Co-located	N/A
Govt Secondary Colleges 7 - 12	1 / 10000	1 / 30000	22,000	54,000	2	One @ 8.4 One @ 12	20.4
Neighbourhood houses (inc into Level 1 Community Services Complex	1 / 6667	1 / 20000	22,000	54,000	3	Co-located	N/A

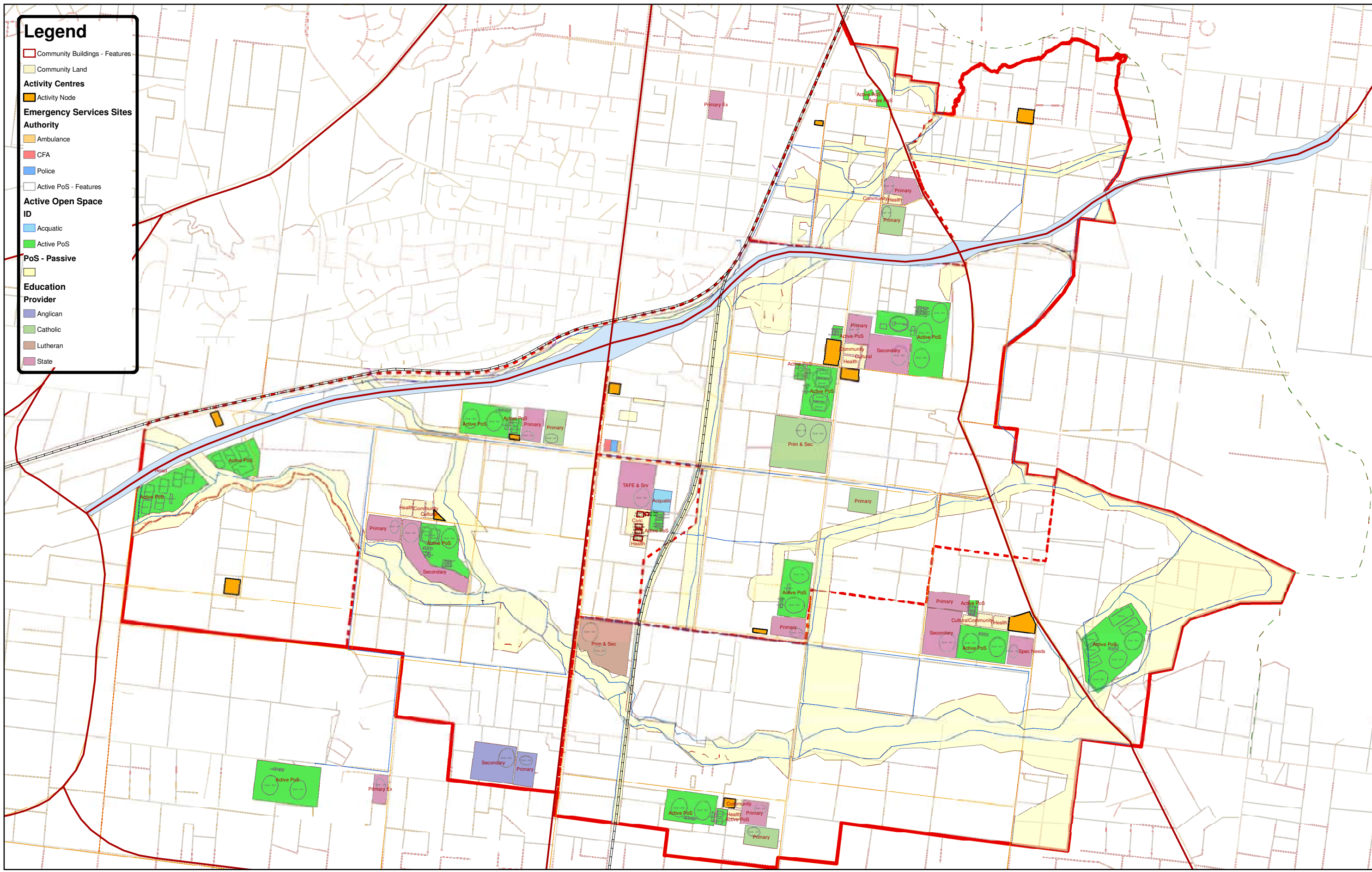
Facilities / Services by Level	Recommended Provision Ratio for Growth Areas (Households)	Recommended Provision Ratio for Growth Areas (Population)	Estimated number of households	Estimated population	Crude Est. number of Facilities households/ population	Rec'mded land allocation (ha)	Est total Land allocation required households/ population
Low Order Tennis Facilities 4-6 Courts	1 / 10000	1 / 25000	22,000	54,000	2	1	2
Catholic Primary P-6	1 / 6000	1 / 18000	22,000	54,000	4 / 3	2	8 / 6
Low order performance Arts (based at Govt Secondary Colleges)	1 / 10000	1 / 30000	22,000	54,000	2	Co-located	N/A
Indoor Recreation Centres (2 court facilities)	1 / 10000	1 / 20000	22,000	54,000	2	Co-located	N/A
Sub Total Level 2						23.4	30.4 / 28.4
Level 3							
Libraries	1 / 13333	1 / 40000	22,000	54,000	2 / 1	1.5	3 / 1.5
Aquatic Centres	1 / 16667	1 / 40000	22,000	54,000	1	2.5	2.5
Community Arts Centres	1 / 13333	1 / 40000	22,000	54,000	2 / 1	0.3	0.6 / 0.3
Higher Order Active Open Space Reserves	1 / 13333	1 / 40000	22,000	54,000	2 / 1	30	60 / 30
Higher Order Tennis Facilities (10+ courts)	1 / 13333	1 / 40000	22,000	54,000	2 / 1	Co-located in higher order Rec Reserve	N/A
Lawn bowls	1 / 16667	1 / 50000	22,000	54,000	1	Co-located in higher order Rec Reserve	N/A
Higher Order Youth Facilities	1 / 13333	1 / 40000	22,000	54,000	2 / 1	Located in L3 Com Ctre	N/A
Early Childhood Intervention Services (integrated with one of the early years facilities)	1 / 13333	1 / 40000	22,000	54,000	2 / 1	Co-located early years	N/A

Facilities / Services by Level	Recommended Provision Ratio for Growth Areas (Households)	Recommended Provision Ratio for Growth Areas (Population)	Estimated number of households	Estimated population	Crude Est. number of Facilities households/ population	Rec'mded land allocation (ha)	Est total Land allocation required households/ population
Integrated Emergency Services Precinct (Police, Fire, Amb, SES)	1 / 13333	1 / 40000	22,000	54,000	2 / 1	2	4 / 2
Community Based Health Care	1 / 16667	1 / 50000	22,000	54,000	1	1	1
Catholic Secondary	1 / 19333	1 / 58000	22,000	54,000	1	7	7
Community Centres	1 / 13333	1 / 40000	22,000	54,000	2 / 1	1.5	3 / 1.5
Indoor Recreation Centres (6 court)	1 / 16667	1 / 40000	22,000	54,000	1	4	4
Planned Activity Group (Level 3 Com Facils)	1 / 13333	1 / 40000	22,000	54,000	2 / 1	Co-located	N/A
Sub Total Level 3							81.1 / 45.8
TOTAL							260.35 / 233.5

* 1 Table 1 should not be interpreted as a totally prescriptive strategy and reflects one of a number of approaches to the allocations of community infrastructure items. The decisions about where to locate certain infrastructure forms may well vary from the table (eg location of facilities on govt school land or not). This may influence the land required.

Armstrong Creek

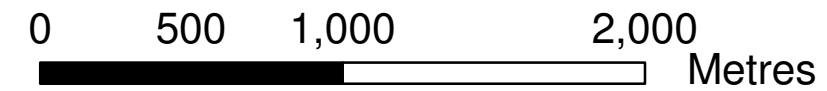
Social Infrastructure - Indicative Location Map



Legend

- Community Buildings - Features
- Community Land
- Activity Centres**
- Activity Node
- Emergency Services Sites**
- Authority**
- Ambulance
- CFA
- Police
- Active PoS - Features
- Active Open Space**
- ID
- Acquatic
- Active PoS
- PoS - Passive**
- Education
- Provider**
- Anglican
- Catholic
- Lutheran
- State




















SCALE 1:25,000

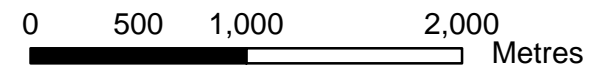
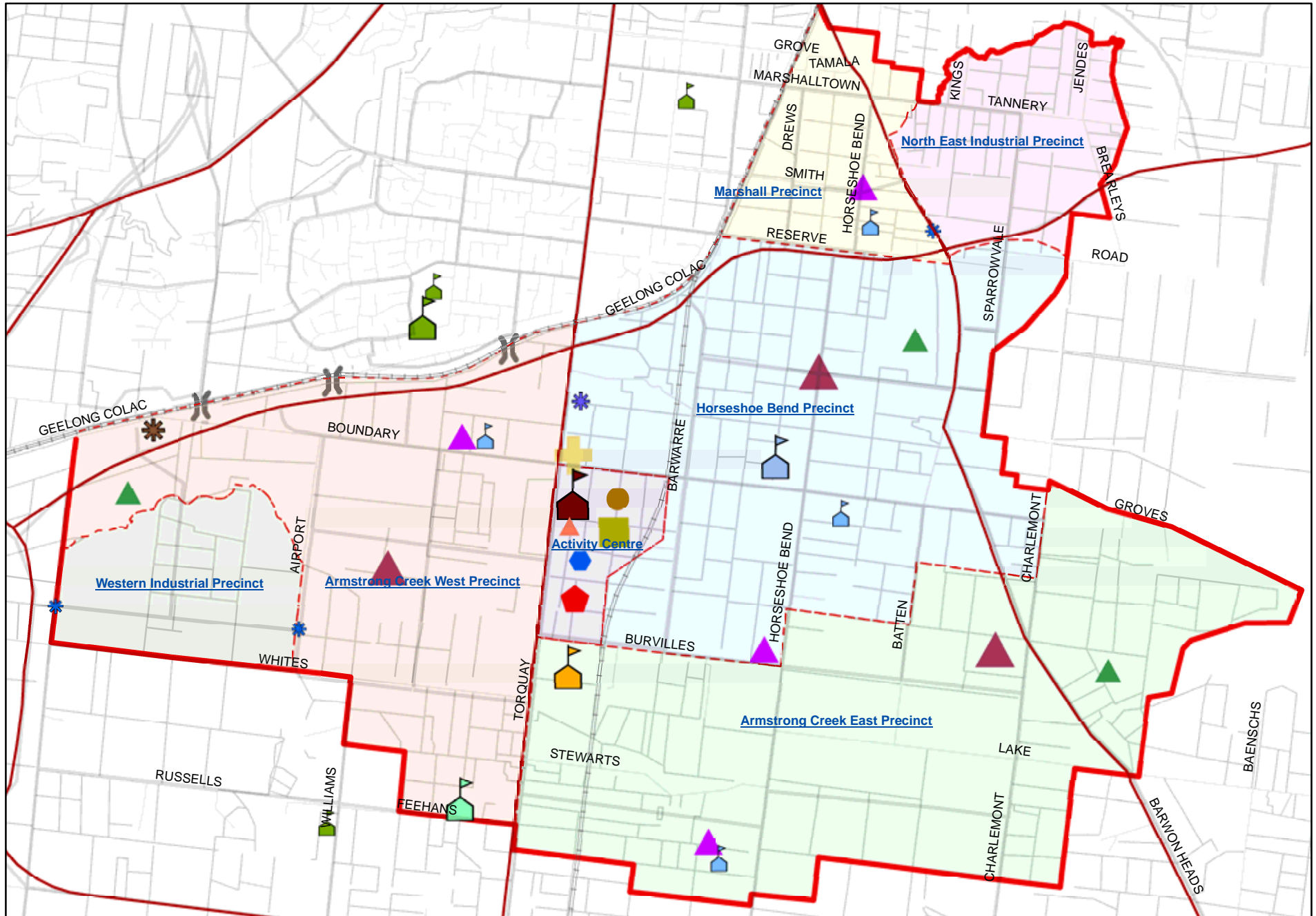


Armstrong Creek Social Infrastructure Hubs

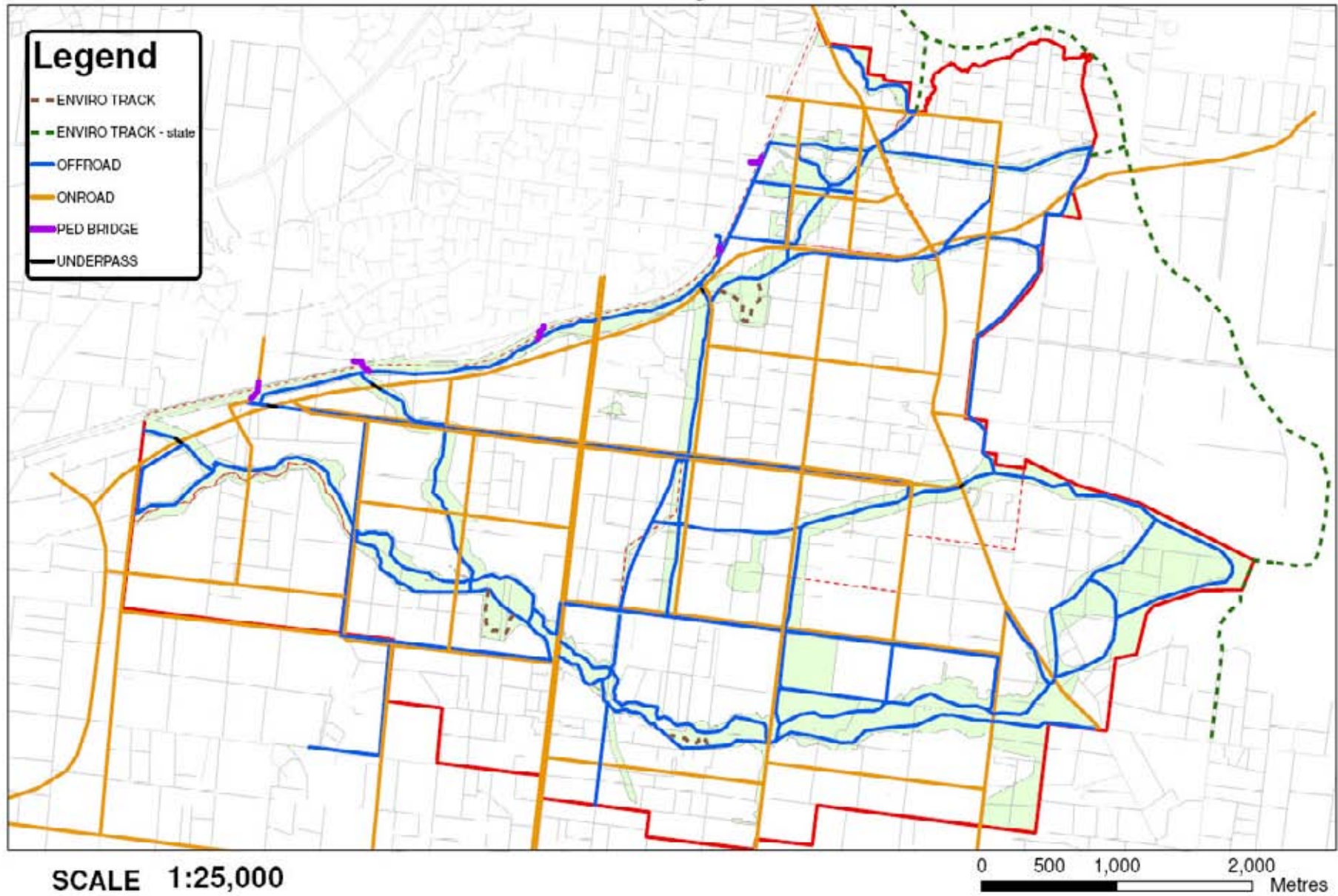
Legend

Social Infrastructure Hubs

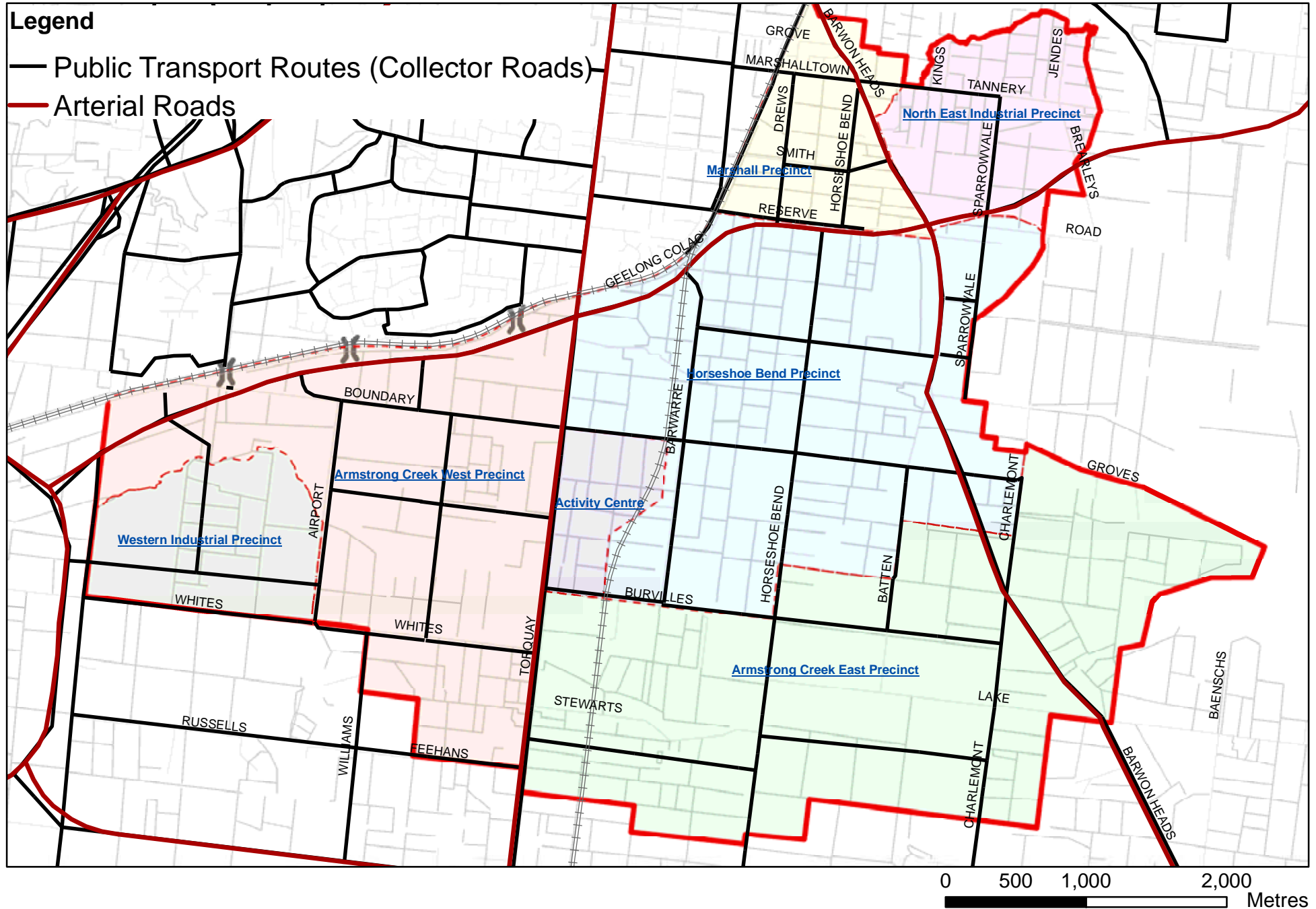
-  Civic & Culture Precinct
-  Library
-  Youth Centre
-  Multi Purpose Stadium - Large
-  Aquatic Centre
-  Community Hub - Local
-  Community Hub - Neighb'd
-  Community Pavilion Regional
-  Convenience Shopping
-  Emergency Services Hub
-  Primary - State (existing)
-  Primary - Catholic (indicative)
-  Secondary - State (existing)
-  K - 12 Anglican (Indicative)
-  P - 12 - Catholic (Indicative)
-  P - 12 Lutheran (existing)
-  Secondary / TAFE - State
-  Rail Station Activity Centre
-  Specialised Activity Centre



Armstrong Creek *Pedestrian & Cycle Paths*



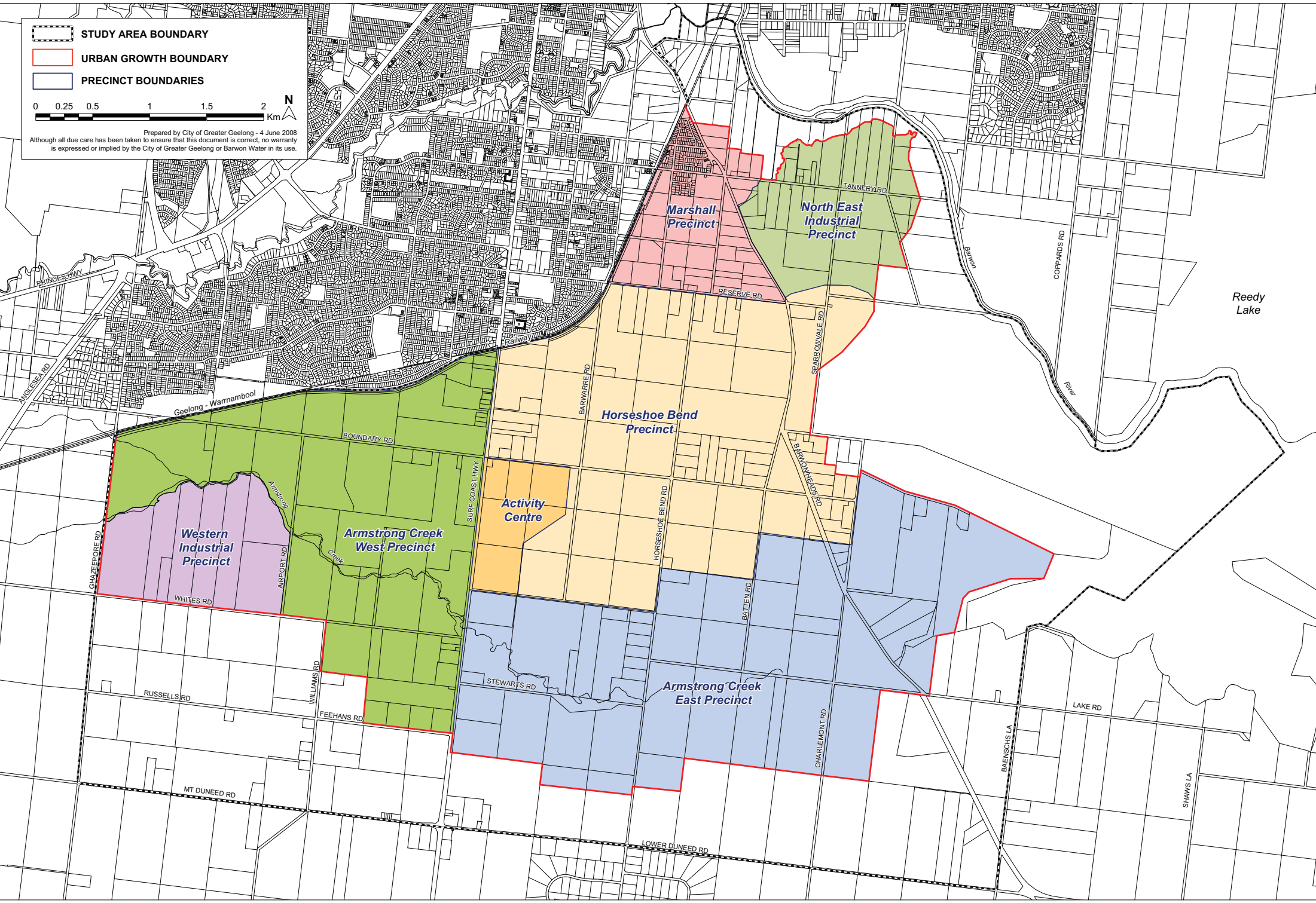
Public Transport Routes (Arterial & Collector Roads)



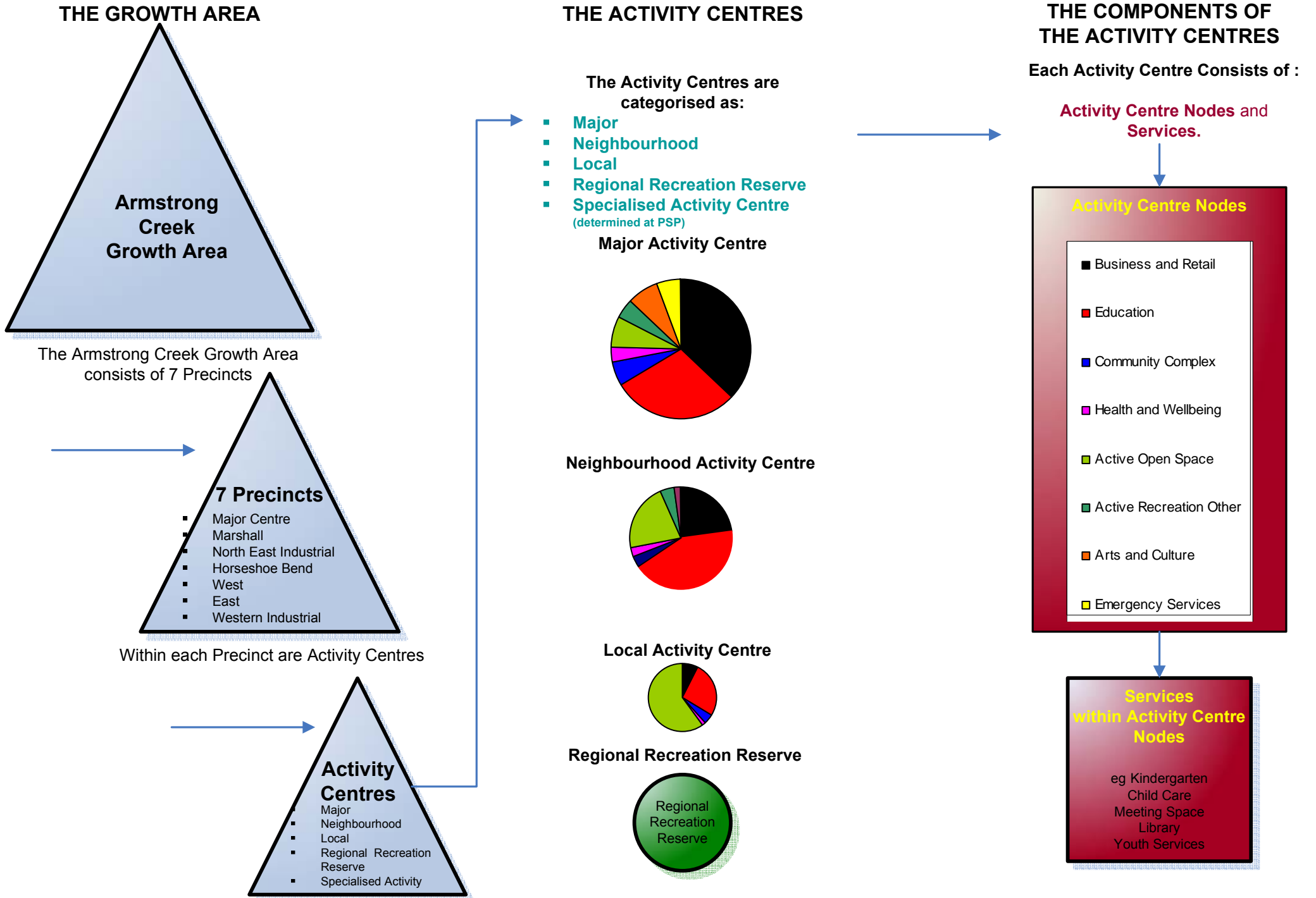
STUDY AREA BOUNDARY
URBAN GROWTH BOUNDARY
PRECINCT BOUNDARIES

0 0.25 0.5 1 1.5 2 Km

Prepared by City of Greater Geelong - 4 June 2008
Although all due care has been taken to ensure that this document is correct, no warranty is expressed or implied by the City of Greater Geelong or Barwon Water in its use.



Appendix 10 PLANNING - GROWTH AREA TO LOCAL SERVICES CHART



Active Indoor Recreation	Multi Purpose Indoor Court	x	x	x
	Aquatic / Leisure / Gym	x		x
Passive Open Space		x	x	
Shared Pathways Walk/Cycle		x	x	
Skate Parks		x		
Youth Activity Areas		x		
Emergency Services				
Police			x	
Fire			x	
Ambulance			x	
State Emergency Service			x	
Judicial Facilities			x	

ARMSTRONG CREEK GEELONG'S GROWTH AREA



Appendix 12 Precinct Elements

Vision

The vision for the growth area is:

“The Armstrong Creek urban growth area will be developed into a sustainable community that sets new benchmarks in best practice urban development. Natural and cultural features will be protected and enhanced to create a distinct urban character. Armstrong Creek will become a highly sought-after location for living, working and recreation, forming an attractive addition to Geelong.”

Overall land budget, Armstrong Creek Urban Growth Area

Indicative figures

Land use	Land area (ha)
Activity centres	106.81
Secondary schools	39.90
Employment land	305.14
Mixed use corridor	26.58
Higher density housing	26.96
Medium density housing	303.27
Conventional density housing	1,139.53
Existing Residential	23.36
Regional sports facilities	64.88
Biodiversity corridor/ passive parkland	501.82
Cemetery	41.43
Total	2579.68

Note: areas are gross and include roads and open space.

A quick snapshot of the growth area

- The total area is 4,284 hectares of which 2,580 hectares will be developed.
- The projected residential population is 54,000.
- Approximately 22,000 homes to be built at a range of housing densities.
- Approximately 22,000 jobs will be provided in the growth area.
- A major activity centre (sub-regional) centre, local activity centres, employment areas, transport networks and public open spaces will be developed.
- A total of three railway stations will be located in the growth area.
- It is anticipated that development in some precincts will commence in 2010.

ARMSTRONG CREEK

GEELONG'S GROWTH AREA



Demographics

Armstrong Creek will offer a wide range of living and lifestyle options to meet the needs of a full cross section of the community. These will range from detached houses on family-sized blocks to apartments close to, and above, major shops and services, and include accommodation for the aged, mobility impaired, and students. Higher density housing will be clustered in areas close to public transport nodes and activity centres, maintaining the more traditional character of other residential areas. Affordable and social housing will be provided throughout the growth area to integrate it within the community.

A comprehensive network of community facilities and services will be provided to meet the needs of the whole community.

Likely household sizes

Housing type	People per house (low end projection)	People per house (high end projection)	Average
Apartments	1.2	1.6	1.4
High density housing	1.4	1.9	1.65
Medium density housing	2.0	2.6	2.3
Conventional housing	2.6	3.3	2.95



ARMSTRONG CREEK GEELONG'S GROWTH AREA



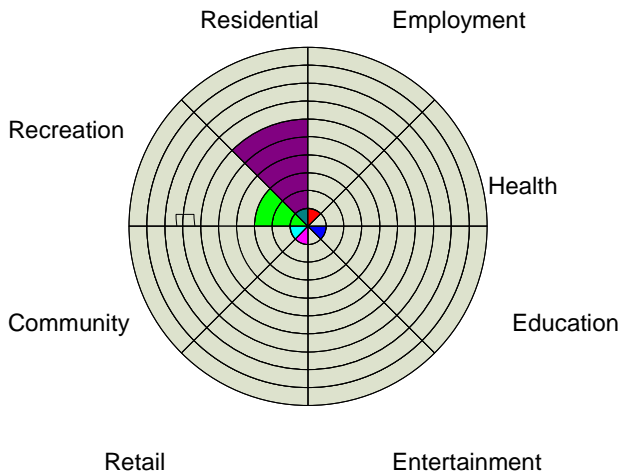
Precincts

The growth area consists of seven precincts. The precincts will be master-planned on a precinct by precinct basis via Precinct Structure Plans (PSPs). PSPs are included in the Planning Scheme via a standard amendment process. Once a PSP is approved, permits can be issued for the subdivision of land.

Precinct Profiles

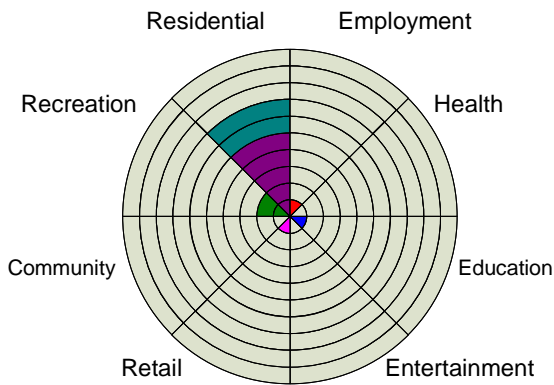
The diagrams below provide a snapshot of the precincts. It should be noted that employment is expressed as a percentage of the whole growth area, while the different colours in the residential sector represent different densities of development as follows: yellow- existing housing; maroon- conventional density housing; teal- medium density housing; blue- high density housing.

Armstrong Creek East Precinct



The Armstrong Creek East Precinct is located to the south of the growth area. It is predominantly a residential precinct, but will have significant green areas, generally focussed on Armstrong Creek and areas which have significant vegetation. A large neighbourhood activity centre will be provided on Barwon Heads Road and this centre will be the focus for retail, education and community uses in the precinct.

Horseshoe Bend Precinct

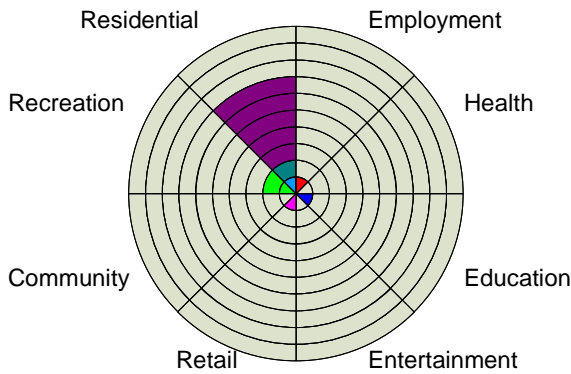


The Horseshoe Bend Precinct is located centrally in the growth area. It is predominantly a residential precinct, and will provide both conventional density and medium density housing. Significant recreation areas will be provided in the precinct. A large neighbourhood activity centre will be provided on Horseshoe Bend Road and this centre will be the focus for retail, education and community uses in the precinct.

ARMSTRONG CREEK GEELONG'S GROWTH AREA

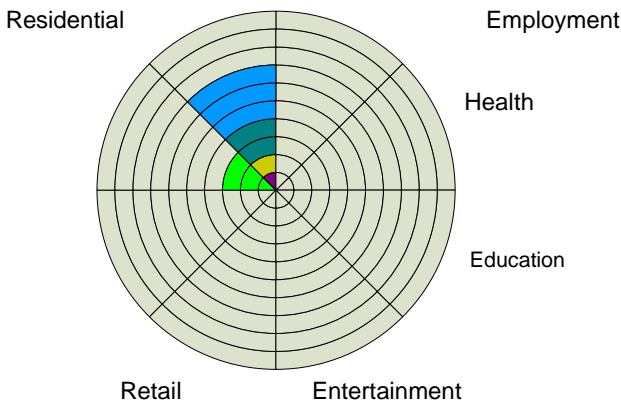


Armstrong Creek West Precinct



The Armstrong Creek West Precinct is a residential precinct, providing for conventional density housing and medium and high density housing. Significant recreation areas will be provided along Armstrong Creek and a number of small local centres will be the focus for retailing, community and educational activities in the precinct. A new railway station will be provided to the west of the precinct and it is anticipated that this station will be a landmark for the precinct, incorporating retailing and surrounded by high density housing.

Marshall Precinct

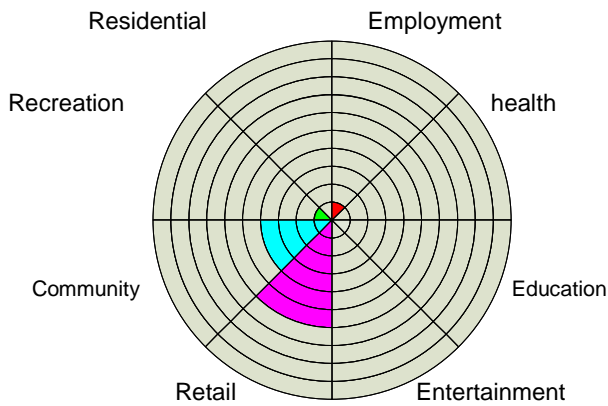


The Marshall precinct is a residential precinct and contains existing residential areas, it will be developed with a large amount of medium and high density housing focused around the Marshall Station. The Marshall Station will be upgraded with new, larger car parking areas and local shops, providing a focal point for the precinct. Large areas for recreation purposes will also be developed.

ARMSTRONG CREEK GEELONG'S GROWTH AREA

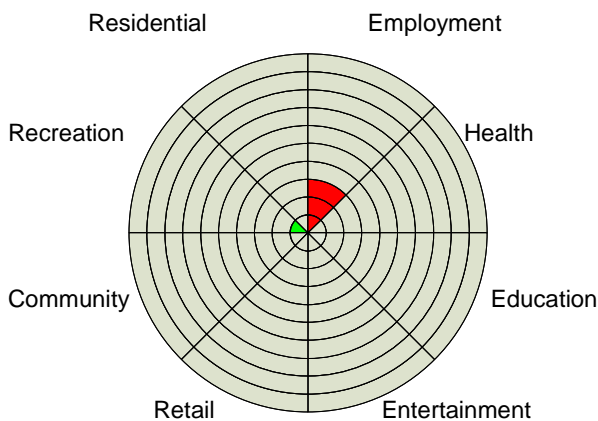


Major Activity Centre Precinct



The Major Activity Precinct will be the main commercial, entertainment and community precinct within the growth area. Retail will be provided at a sub regional level and significant opportunities for offices and shop top living will be provided in the precinct. The precinct will contain a transport interchange which will ultimately include a public transport connection between the growth area and Torquay.

North East Industrial Precinct

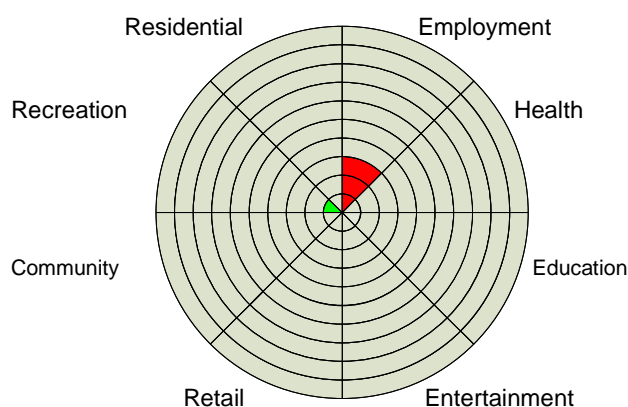


The North East Industrial Precinct is an employment precinct which will provide for at least 8, 000 jobs. Recreation opportunities will also be provided in the precinct, with a link provided through the precinct to the Barwon River. A specialised local centre will be provided which will cater for the retail and service needs of those employed in the precinct.

ARMSTRONG CREEK GEELONG'S GROWTH AREA



Western Industrial Precinct



The Western Industrial Precinct is an employment precinct providing for at least 7,300 jobs. This precinct will be developed as a high amenity business park and synergies with Deakin University will be pursued. Recreation areas will be provided, along with two specialised local centres, which will cater for the retail and service needs of those working in the precinct.

Overarching principles for all precincts

Walkability

As it is best practice to design residential communities around walking, residential areas in the growth area will be designed in this way. The key elements of walkable neighbourhoods are:

- Providing a larger number of smaller centres, so that most homes are within a comfortable walking distance of local commercial, community, recreation and education facilities, enabling people to walk to meet their daily needs.
- Achieving sufficient residential densities to achieve the necessary catchments to sustain local facilities.
- Providing a well connected, safe and inviting network of walking routes, including footpaths on both sides of the street.
- Providing local parks and corner stores within a five minute walk (approximately 400 metres) of all homes.
- Non gated communities.
- Orientation of buildings to watch over the street.
- Place making through urban design.
- Street designs that work for people, not just cars.
- Provision of quality walkways and pedestrian crossings.
- Provision of street furniture.
- Providing local destinations.

Housing mix

It is important that sufficient densities are achieved to ensure that sufficient population is achieved to support a range of commercial and community facilities in each neighbourhood. The growth area will provide:

- A variety of housing types and price points, to provide housing choices for a range of different needs, lifestyle preferences and income levels, attracting a diverse group of people.
- Different forms of housing will be mixed to promote healthy interaction between people of different socio economic backgrounds and age.

ARMSTRONG CREEK

GEELONG'S GROWTH AREA



Movement and access

An 800 metre (half mile) grid network will be provided within the growth area. Such a network provides for a permeable street layout promoting walking and direct vehicle trips. A grid network also assists in providing a functional and accessible public transport system. Additional roads will be developed to provide good access throughout the growth area.

Torquay Road, Barwon Heads Road and the East West Link Road will be developed as urban boulevards, providing good access into and out of Armstrong Creek, without severing the communities on either side. Streets will be designed to provide a comprehensive network of safe, direct and attractive cycle paths for commuter and recreational purposes. This will enable people to walk or cycle to local destinations such as neighbourhood shops, public transport, work places, schools and parks.

Activity centres

The activity centres provided in Armstrong Creek will be mixed use centres, containing retail, entertainment, office, community and residential uses. The centres will concentrate demand and therefore efficiency of public transport services. Activity centres will be focussed on leafy, pedestrian friendly 'main streets' that provide an experience in themselves. Footpaths will be broad, enabling outdoor dining, trees and places to rest, and verandahs will provide shelter and shade. There will be a mixed use activity centre in the heart of each neighbourhood.

Specialised local centres will be developed in employment areas to cater for the retail and service needs of those working in the precincts.

Community facilities

A comprehensive range of community facilities and services such as schools, libraries, medical centres and meeting spaces will be provided throughout the growth area. These will reflect leading edge thinking in terms of services will be co-located with retail/ educational facilities. Community facilities and services to serve the new communities will be provided early in the life of the development to ensure convenient access for residents.

The community facilities network will incorporate multi purpose facilities situated within activity nodes, such as retail, commercial and recreational spaces. The network will create clusters of activity that are accessible by pedestrians, cyclists and public transport users, minimising the total travel requirements of residents by providing a range of opportunities at the one location. Co location will facilitate joint use of facilities and will encourage the development of social networks and cohesion.

Open space and recreation

Armstrong Creek will be a healthy, active community. A comprehensive network of open space and recreation facilities will be provided within easy reach of all homes and workplaces. These will range from active sports facilities to informal parks. Playing fields will be provided in each neighbourhood and in larger, regional scale facilities. Local parks and children's playgrounds will be provided within a short walk of every home. Opportunities will be provided to 'escape' from the urban environment and enjoy nature, particularly the stands of native vegetation and revegetated river and creek corridors. A web of leisure trails and more direct walking tracks and cycling paths will be provided to link open space and recreational facilities.

Public transport

Marshall Station will be improved and new, high quality public transport services provided to serve the Armstrong Creek community. Public transport services will be provided from the outset, offering frequent and reliable services to key destinations. Development will be planned to ensure that all homes are a short walk from public transport, reducing the reliance on private cars.

Sustainability

The latest technology will be employed to ensure that buildings and infrastructure in the growth area are as environmentally friendly and healthy as possible. This will include measures to minimise energy and water use- such as rainwater tanks and water recycling and strategies to minimise the impact of stormwater runoff. Opportunities to reduce energy consumption and emissions will be pursued. State of the art recycling facilities will be provided and provision will be made for leading edge telecommunications technology. The siting of buildings will maximise solar access and provide for the efficient use of land.

ARMSTRONG CREEK

GEELONG'S GROWTH AREA



Key features of the Armstrong Creek East Precinct

One Neighbourhood Centre comprising:

- Approximately 6,000 square metres of retail space, including a supermarket and convenience shops
- Approximately 1,200 square metres of business and community service space
- A family hub of children and family support services including parenting support, child health services, medical, community health and wellness services and flexible space for all lifecycle groups
- A primary school with sporting and other facilities available for use by the community
- Shop top housing
- A street based retail environment, following 'Main Street principles.'

Two local activity centres which may contain:

- Approximately 1000 square metres of local convenience shops and services
- A Primary School with sporting and other facilities available for use by the community
- A family hub including children and family services associated with kindergarten, child care, maternal and child health
- Shop top housing.

Medium density housing, average 20 dwellings per hectare within 400 metres of the edge of the Activity Centre. This equates to an average lot size of approximately 360 square metres.

Conventional density housing, average 15 dwellings per hectare. This equates to an average lot size of approximately 550 square metres.

Passive and active parkland including a regional scale conservation park, wildlife corridors, recreation trails, indigenous cultural heritage trails, and 8 hectare active parkland.

Existing crematorium/ cemetery.

Private School, currently being developed.

New transit route reservation, to allow for a range of high quality public transport options and future connection to Torquay.

New east-west arterial link road connecting between the Geelong Ring Road and the Barwon River with service roads on both sides to enable frontage development.

Restored natural channels and flood plains.

Land budget, Armstrong Creek East Precinct

Land use	Land area (ha)	Dwellings	Population
Activity centre	13.91		
Secondary school	12.27		
Employment land	0		
Mixed use corridor	0		
Higher density housing	0		
Medium density housing	68.37	1,367	3,144
Conventional density housing	410.00	6,150	18,142
Total	504.55	7517	21,286

Note: Indicative figures. Areas are gross and include roads and open space. Areas exclude major open space uses such as regional parkland. Figures exclude shop top housing.

ARMSTRONG CREEK GEELONG'S GROWTH AREA



Key features of the Horseshoe Bend Precinct

One Neighbourhood Activity Centre, integrated with adjoining secondary school, consisting of:

- Approximately 7,000 square metres of retail space, including a supermarket and convenience shops,
- Approximately 1,400 square metres of business and community service space,
- A family hub of children and family support services including parenting support, child health services, medical, community health and wellness services, as well as other flexible spaces for use by all lifecycle groups,
- A Primary School and associated local sporting facilities and library jointly used by the community,
- A Secondary School with indoor sports stadium, active sports grounds and base for youth services,
- Provision for approximately 250 jobs,
- Shop top housing
- A street based retail environment incorporating 'Main Street' principles.

A local activity centre which may contain: 1000 square metres of local convenience shops and services, a Primary School, local sporting facilities, a family hub including children and family services associated with kindergarten, child care, maternal and child health.

A total of two Secondary Schools.

Medium density housing, average 20 dwellings per hectare within 400 metres of the edge of the Neighbourhood Activity Centre. This equates to an average lot size of approximately 360 square metres.

Conventional density housing, average 15 dwellings per hectare. This equates to an average lot size of approximately 550 square metres

Urban forest which includes recreational trail alongside the transit route, providing a north south connection through the precinct.

Passive and active parkland with recreational trails incorporating native vegetation and providing for wildlife corridors.

New transit route to encourage public transport use, with reservation to allow for a range of high quality public transport options and future connection to Torquay.

New east-west arterial link road connecting between the Geelong Ring Road and the Barwon River with service roads on both sides to enable frontage development.

Existing aged care facility.

Mixed use corridor, excluding bulky goods retailing, but including offices, shops and housing.

Land budget, Horseshoe Bend Precinct

Land use	Land area (ha)	Dwellings	Population
Activity centre	13.92		
Secondary school	18.42		
Employment land	0		
Mixed use corridor	6.62		
Higher density housing	0		
Medium density housing	127.01	2,540	5,842
Conventional density housing	390.00	5,850	17,257
Total	555.97	8,390	23,099

Note: Indicative figures. Areas are gross and include roads and open space.
Areas exclude major open space uses such as regional parkland. Figures exclude shop top housing.

ARMSTRONG CREEK

GEELONG'S GROWTH AREA



Key features of the Armstrong Creek West Precinct

New railway station.

Three local activity centres, including one centre adjacent to the new station, which may comprise:

- Up to 1000 square metres of local convenience shops and services,
- Primary School with shared facilities such as sporting grounds, meeting rooms or library,
- Family hub including children and family services associated with kindergarten, childcare, maternal and child health,
- Shop top housing.

Secondary School and associated indoor sports stadium and active sports ground shared with the community, integrated with the adjoining local centre and Armstrong Creek parkland.

Regional sports facility.

Higher density housing, average 30 dwellings per hectare within 400 metres of the new railway station, and the railway station proposed for the Major Activity Centre Precinct. This equates to an average lot size of approximately 225 square metres.

Medium density housing, average 20 dwellings per hectare within 800 metres of the new railway station, and within 400 metres of the edge of the Major Activity Centre Precinct. This equates to an average lot size of approximately 360 square metres.

Conventional density housing, average 15 dwellings per hectare. This equates to an average lot size of approximately 550 square metres

Mixed use corridor along Torquay Road, excluding bulky goods retailers, but including shops, offices and housing.

Passive parkland with recreational trails incorporating remnant native vegetation, flood prone land, and indigenous cultural heritage.

New east-west arterial link road connecting between the Geelong Ring Road and the Barwon River with service roads on both sides to enable frontage development.

New pedestrian bridges over existing rail line and east west arterial link road, linking with Rossack Drive to the north, noting that Rossack Drive is not proposed to be extended over the existing railway line into the growth area.

Land budget, Armstrong Creek West Precinct

Land use	Land area (ha)	Dwellings	Population
Activity centre	9.99		
Secondary school	9.21		
Employment land	0		
Mixed use corridor	19.96		
Higher density housing	17.8	534	881
Medium density housing	76.73	1,535	3,530
Conventional density housing	297.00	4,455	13,142
Total	430.69	6,524	17,553

Note: Indicative figures. Areas are gross and include roads and open space.
Areas exclude major open space uses such as regional parkland. Figures exclude shop top housing.

ARMSTRONG CREEK GEELONG'S GROWTH AREA



Key features of the Marshall Precinct

Upgraded railway station amenities, including increased car parking areas.

Local shops on the corner of Drews Road and Marshalltown Road, potentially with shop top housing or office space. Around 1000 square metres of local convenience shops and services will be provided.

A specialised local centre geared to serve the needs of the workforce in the nearby North East Industrial Precinct, with cafes, services and restaurants totaling around 2800 square metres in floor area.

Higher density housing, average 30 dwellings per hectare within 400 metres of the Marshall Station. This equates to an average lot size of approximately 225 square metres.

Medium density housing, average 20 dwellings per hectare beyond the higher density housing, up to 800 metres of the Marshall Station. This equates to an average lot size of approximately 360 square metres.

Conventional density housing, average 15 dwellings per hectare. This equates to an average lot size of approximately 550 square metres

Existing retirement village.

Passive parkland with recreational trails incorporating remnant native vegetation, flood prone land, electricity line easement and sewer line easement.

Introduction of service roads on Barwon Heads Road to enable frontage development. Barwon Heads Road will be developed as an urban boulevard.

New east-west arterial link road connecting between the Geelong Ring Road and the Barwon River with service roads on both sides to enable frontage development.

Restored natural channels and flood plains.

Land budget, Marshall Precinct

Land use	Land area (ha)	Dwellings	Population
Activity centre	1.1		
Secondary school	0		
Employment land	0		
Mixed use corridor	0		
Higher density housing	9.16	275	453
Medium density housing	31.16	623	1,433
Conventional density housing	42.53	638	1,882
Existing Residential	23.36	374	1,103
Total	97.05	1910	4,871

Note: Indicative figures. Areas are gross and include roads and open space. Areas exclude major open space uses such as regional parkland. Figures exclude shop top housing.

ARMSTRONG CREEK

GEELONG'S GROWTH AREA



Key features of the Major Activity Centre Precinct

New transit route to encourage public transport use, with reservation to allow for a range of high quality public transport options and future connection to Torquay.

Major Activity Centre (Sub Regional Centre) consisting of:

- Approximately 35,000 square metres of retail space, including discount department stores, supermarkets and specialty stores,
- Approximately 7,000 square metres of entertainment space,
- Approximately 25,000 square metres of bulky goods retail space,
- Approximately 35,000 square metres of office space,
- Approximately 35,000 square metres of community services space, including education and health,
- Higher density shop top housing,
- Public transport interchange,
- Provision for approximately 3,500 jobs,
- Street based retail environment incorporating 'main street principles',
- Town square.

Land budget, Major Activity Centre Precinct

Land use	Land area (ha)	Dwellings	Population
Activity centre	65.6		
Secondary school	0		
Employment land	0		
Mixed use corridor	0		
Higher density housing	0		
Medium density housing	0		
Conventional density housing	0		
Total	65.6		

Note: Indicative figures. Areas are gross and include roads and open space.
Areas exclude major open space uses such as regional parkland. Figures exclude shop top housing.

ARMSTRONG CREEK

GEELONG'S GROWTH AREA



Key features of the North East Industrial Precinct

A specialised activity centre of approximately 2,800 square metres in area providing for the needs of the workforce, with cafes, restaurants and other services.

A total area of approximately 100 hectares which will accommodate a mix of business types, including hi-tech manufacturing development, technical, trades, transport and labouring.

Passive parkland with recreational trail on electricity transmission line easement.

Recreational trail along Barwon River.

Provision for approximately 8000 jobs.

Introduction of service roads on Barwon Heads Road to enable frontage development.

New east-west arterial link road connecting between the Geelong Ring Road and the Barwon River with service roads on both sides to enable frontage development.

Historic Barwon Water sewer aqueduct a visual landmark.

Land budget, North East Industrial Precinct

Land use	Land area (ha)	Dwellings	Population
Activity centre	0.6		
Secondary school	0		
Employment land	157.60		
Mixed use corridor	0		
Higher density housing	0		
Medium density housing	0		
Conventional density housing	0		
Total	158.2		

Note: Indicative figures. Areas are gross and include roads and open space.
Areas exclude major open space uses such as regional parkland. Figures exclude shop top housing.

ARMSTRONG CREEK GEELONG'S GROWTH AREA



Key features of the Western Industrial Precinct

Two specialised activity centres each consisting of approximately 2,500 square metres in area providing for the needs of the workforce, with cafes, restaurants, convenience shops and other services, shop top dwellings, research and development activities.

A high amenity business park of approximately 140 hectares total area, designed to accommodate hi-tech manufacturing firms and research activity, with a focus on industrial land users that require a higher amenity environment in a recognisable address for corporate, research and advanced manufacturing activities. The area will accommodate a significant stock of office and research space associated with a production or warehouse function, however pure offices will be clustered in activity centres.

Provision for approximately 7,350 jobs.

Recreational trail along Barwon River.

Passive parkland with recreational trails.

Land budget, Western Industrial Precinct

Land use	Land area (ha)	Dwellings	Population
Activity centre	1.7		
Secondary school	0		
Employment land	147.54		
Mixed use corridor	0		
Higher density housing	0		
Medium density housing	0		
Conventional density housing	0		
Total	149.24		

Note: Indicative figures Areas are gross and include roads and open space.
Areas exclude major open space uses such as regional parkland. Figures exclude shop top housing.

ARMSTRONG CREEK GEELONG'S GROWTH AREA



What are 'Main Street Principles'?

Buildings and a mix of uses that generate high levels of pedestrian activity and a sense of vitality are encouraged. Buildings address the street, resulting in continuous and contained streetscapes which provide interest and interaction between buildings and pedestrians at street level.

A permeable network of streets, laneways, arcades and public spaces that provide high quality linkages, particularly for pedestrians, to centres from public transport, street and off-street car parking, and from the surrounding walkable catchment are provided. Street networks are "fine grained" to provide a multiple choice of routes for pedestrians, cyclists and vehicles.

Public buildings and spaces are universally accessible.

Attractive and safe alfresco dining areas are facilitated to foster a lively streetscape.

New development provides options for future flexibility and changes in land use.

Buildings and public spaces contribute to a comfortable pedestrian environment, providing opportunities for weather protection, including shelter from prevailing strong wind conditions.

Walking is prioritised as the most important mode of transport within an activity centre. Streets, public places and adjacent development will always be designed to provide a safe, secure, stimulating and pleasant walking environment.

Land uses and developments that employ and attract high numbers of people are encouraged, as they have the potential to activate activity centres by day and night. Such uses will include medium to high density residential, retail, civic and community facilities, educational and cultural facilities, cafes, restaurants, hotels, offices and other intensive employment uses.

Attractive and safe alfresco dining areas are facilitated to foster a lively streetscape.

New development provides options for future flexibility and changes in land use.

High quality landscape treatments make an important contribution to the public realm.



ARMSTRONG CREEK GEELONG'S GROWTH AREA



Key Principles– Residential Neighbourhoods

Vision– “Armstrong Creek will offer a wide range of living and lifestyle options to meet the needs of a full cross section of the community. These will range from detached houses on family sized blocks to apartments close to major shops and services, and include accommodation for the aged, disabled and for students. Higher density housing will be clustered in areas close to public transport nodes and activity centres, maintaining the more traditional character of other residential areas. Affordable and social housing will be dotted through the development to integrate it with the community.”

Residential communities will be designed around walking.

Residential areas will be organised into a series of neighbourhoods, each large enough to support the provision of daily needs- basic convenience shops and services, a primary school, essential community services and local parks/ recreation facilities, but small enough that it is possible to walk comfortably from any part of the neighbourhood to those daily needs.

The growth area is organised into neighbourhoods of around 3000 dwellings, within these neighbourhoods local parks and convenience stores will be within a five minute walk of all homes, while local facilities such as primary schools and local shops will be located within a ten minute walk of all homes.

A variety of housing types and price points will be provided, in order to provide suitable choices for a range of different needs, lifestyle preferences and income level, attracting a diverse mix of people.

Residential neighbourhoods will be designed around an 800 metre grid road network.

Gated communities which exclude the public from passing through large areas will be avoided.

Medium density housing areas will have more intensely planted street trees and more frequent parks to compensate for the loss of planting opportunities in private gardens.

A distinctive green character will be created in new residential neighbourhoods.

Best practice sustainable urban development principles will be incorporated in new neighbourhoods.

Residential neighbourhoods will have their own distinct identity.

Heritage and cultural features will provide points of interest in new neighbourhoods.



ARMSTRONG CREEK GEELONG'S GROWTH AREA



Key Principles– Natural Environment

Natural and cultural features will be protected and enhanced to create a distinct urban character.

The Barwon River and Armstrong Creek corridors and their floodplains will be protected from development and revegetated to strengthen habitat values.

Stormwater management and infrastructure will be designed and implemented to respect the environmental values of the area.

Ecologically significant stands of vegetation will be retained.

A 'green skyline' will be achieved to the south of the growth area.

A conservation park will be provided at Hoopers Paddock.

Natural channels and floodplains will be maintained.

Household rainwater tanks will be encouraged to supplement flood storage.

Water sensitive urban design principles will be incorporated throughout the growth area via: detention basins, utilisation of storm water to conserve potable water, use of vegetation for filtering purposes, water efficient landscaping, gross pollutant traps, buffer strips, swales, bio retention systems, porous pavements and localised water harvesting.

Biodiversity corridors will be provided throughout the growth area.



ARMSTRONG CREEK GEELONG'S GROWTH AREA



Key Principles– Employment

Opportunities will be provided for residents to work locally, reducing the social environmental and environmental costs of long commutes.

A total of approximately 22,000 jobs will be provided in the growth area, meeting best practice standards in terms of number and type of jobs and including opportunities for 'higher order' professional, managerial and advanced technical jobs.

Opportunities will be provided for advanced business services to establish in Activity Centres and in home based businesses.

A mix of activity centre office spaces and business park spaces will be provided to showcase the latest and most advanced forms of commercial and industrial development.

An industrial land budget of 320 hectares has been provided in the growth area in two employment precincts- the North East Industrial Precinct and the Western Industrial Precinct.

Approximately 15,350 jobs will be provided in the two employment precincts.

Schools, health facilities and recreation nodes will generate employment.

Opportunities for knowledge based enterprise will be provided in the employment precincts and also the Major Activity Centre precinct.

Armstrong Creek will provide a sub-regional role in a Geelong region context.

The areas of education, research, advanced manufacturing, health, tourism, small businesses and food are identified as areas in which the region can establish a competitive advantage.

Service industry is a strong industrial development candidate for the growth area, while heavy industry is better suited to other parts of Geelong.

Job Estimate Figures for Growth Area

Major Activity Centre	3,500
N-E Neighbourhood Activity Centre	250
S-E Neighbourhood Activity Centre	210
Local Shops (Residential)	210
North East Industrial Precinct	8,000
Western Industrial Precinct	7,350
Home Based Businesses	2,200
Specialised Local Centres in Employment Precincts	190
Other	1,000
Total Jobs	22,910

Indicative figures

ARMSTRONG CREEK GEELONG'S GROWTH AREA



Key Principles– Activity Centres

There are four different types of activity centres proposed in the growth area, as follows:

A Major Activity Centre will be provided alongside the Surfcoast Highway. The Major Activity Centre includes:

- All retail and entertainment activities associated with a sub regional catchment
- Office space
- Community services space, including a library/ culture/ adult learning centre
- A multi level aged care facility
- High density housing
- A town square
- Transport interchange
- Office development.

Two Neighbourhood Activity Centres, one in Armstrong Creek East Precinct and one in Horseshoe Bend Precinct, which include:

- A supermarket
- High density housing
- A Primary School with sporting facilities
- Community services space including a family hub of children and family support services with parenting support, child health services, medical, community health and wellness services, along with flexible spaces for use by all lifecycle groups.

Local Centres which include:

- Local shops, or a multi purpose corner store
- Housing
- Community services space including a family hub of children and family support services associated with kindergarten, child care, maternal and child health.

Specialised local centres which include:

- Services and retail activities to serve the needs of the employment precincts with which they are associated.

Additional multi-purpose corner stores will be co-located with a local park and provided within 400 metres of all dwellings.



ARMSTRONG CREEK GEELONG'S GROWTH AREA



Key Principles– Transport

Public transport services will be provided from the outset and development will be organised to ensure that all homes are within a short walk of public transport, reducing reliance on cars.

A comprehensive local public transport system will be provided.

The growth area is large enough to warrant multiple levels of transport:

- Heavy rail for longer distance trips
- Buses for regional, sub regional and local trips, with potential for rapid bus services
- Cycling via dedicated routes
- Walking
- Car.

Marshall is already provided with a railway station and it is envisaged that this station will be upgraded and provided with additional car parking areas.

A railway station known as Armstrong Creek Station is proposed to the west of the growth area, adjacent to Rossack Drive.

A high quality sub regional transport interchange is proposed at the Major Activity Centre, with an easement set aside to provide for public transport to Torquay.

The Surfcoast Highway, Barwon Heads Road and the future East West Link Road will be developed as urban boulevards, providing good access into and out of the growth area. Additional main roads will be developed to provide for good vehicle access.

Collector streets will be provided via an 800 metre grid network.

Streets will be designed to provide for a network of safe, direct and attractive cycle paths for commuter and recreational purposes.

As local shops and services will be provided close to all homes, people will be able to walk or cycle to local destinations, supporting healthy lifestyles and avoiding social isolation.

Opportunities for new pedestrian bridges to link with Grovedale/ Waurn Ponds will be pursued.

Pedestrian friendly streets will be provided.



ARMSTRONG CREEK GEELONG'S GROWTH AREA



Key Principles– Sustainability

The latest technology will be employed to ensure that utility services are as environmentally friendly as possible.

Measures to minimise potable water use will be employed including through the use of rain water tanks and water recycling.

Opportunities to reduce energy consumption and emissions will be pursued.

Provision will be made for leading edge telecommunications technology.

Low water use gardens will be encouraged.

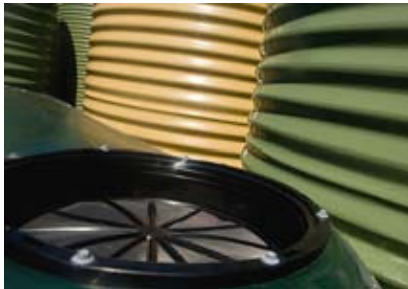
Alternative water supplies such as recycled water, including third pipe, or the use of stormwater will be explored.

A green character will be developed for the growth area, and vegetation retained where possible.

Conservation parks and biodiversity links will be included in the growth area.

Water sensitive urban design principles will be incorporated throughout the growth area via: detention basins, utilisation of storm water to conserve potable water, use of vegetation for filtering purposes, water efficient landscaping, gross pollutant traps, buffer strips, swales, bio retention systems, porous pavements and localised water harvesting.

Stormwater management and infrastructure will be designed and implemented to respect the environmental values of the area.



Armstrong Creek Urban Growth Project Appendix 13

MAJOR ACTIVITY CENTRE – 1 SITE



Business and Retail Activity

- Retail 35,000 m²
- Office Space 35,000 m²
- Restricted Retail 25,000 m²
- Entertainment 7,000 m²
- Car parking

8 ha site Education

- Car parking
- Class Rooms

1.5 ha site Community complex

- Library 3000 m²
Multi Story Potential
Includes circulation and shared amenity
- Child Care 120 Places
685 m² Indoor
840 m² Outdoor
- Civic Hall 1500m²
Multi Story Potential
includes circulation and shared amenity
- Storage 250m²
- Dual Kindergarten 500 m² Indoor
1112 m² Outdoor
- 3 Year Old Kinder 100m² Indoor
215m² Outdoor
- Playgroup 250m² Indoor
105m² Outdoor
- Youth Services 500m²
- CARPARKING
Approx. 150 spaces
5250 m²

1 ha site Health & Wellbeing Complex

- CARPARKING (~ 1 space / 15 m², plus staff parking, roads, bike racks, WSUD, etc)
Approx. 130 spaces
~ 4,500 m²
- Open Space - 750 m²
- Community Health & Well Being Services
2,000 m²

3.1 ha site Recreation Complex

1.8 ha site Leisure Facility

- Active Recreation Pool, gym, admin, amenities 3300 m²
- Carparking 80 – 100 spaces
5,000 m²

1.3 ha site Multi-purpose Stadium

- Basket Ball 4 Court Stadium 5000m²
- Gymnasium 300m²
- Car Parking 3000m²

** Layout shows approximate proportional area allocation (NOT TO SCALE)

Armstrong Creek Urban Growth Project Appendix 13

NEIGHBOURHOOD HUB – 3 SITES

Business and Retail Activity*

West Precinct is local Provision size only

Retail
Up to 7,000 m2

Business and Community Service
Up to 1,400 m2

Car parking

8.4 ha site Secondary School

Car parking

Class Rooms
(1,000 enrolments)

Administration -

Indoor Sports Complex

Performing Arts Centre / Community Space

Open Space
(Ovals, basketball courts, etc)

1.25 ha site Community Complex

*1 Toy Library to be co-located with MCH in H'shoe precinct.
*2 Children's Safety Centre to be located in West precinct

Community Rooms / Meeting Space includes circulation and shared amenity 550 m2

Children's Safety Centre 1 across area*2 600m2 (indoor and outdoor)

Consultation Rooms 260 m2 East & West Precinct 225 m2 H'shoe Precinct

Storage Space 250m2

Toy Library 1 across area*1 120m2

Child Care 120 Places 1525 m2 (685 m2 Indoor) (840 m2 Outdoor)

CARPARKING (~ 1 space / 4 kids, plus staff parking, roads, bike racks, WSUD, etc)
Approx. 100 spaces 3500 m2

2 x Dual / 1x Quad Kinder 3224m2 (1000 m2 Indoor) (2224 m2 Outdoor)

2 x 3 Year Old =Kinder 630m2 (200m2 Indoor) (430m2 Outdoor)

Playgroup 355 m2 (250m2 Indoor) (105m2 Outdoor)

Open Space / Landscape 1000 m2

3.5 ha site Primary School

Car parking

Class Rooms (1,000 enrolments)

Administration

Indoor Sports Complex

General Community Meeting Space

Open Space
(Ovals, basketball courts, etc)

8 ha site Active Open Space

Active Sport Space

2 Cricket / football ovals OR 4 Soccer

2 Netball Corner Park

3.4 ha site Special Needs Education*

Class Rooms

Administration

Open Space
Ovals / recreation

* One Special Needs School indicatively located in the East Precinct Neighbourhood Centre.

Recreation Complex 0.7 ha site Multi-purpose Stadium

Basket Ball 2 Court Stadium 2500m2

Gymnasium 200m2

Car Parking 1500m2

0.9 ha site Seniors Recreation Reserve *

*East and H'Shoe Precinct

Bowls / Croquet Recreation 4000m2

Car Parking 1500m2

1 ha site Health & Wellbeing Complex

CARPARKING (~ 1 space / 15 m2, plus staff parking, roads, bike racks, WSUD, etc)
Approx. 130 spaces ~ 4,500 m2

Open Space - 750 m2

Community Health & Well Being Services 2,000 m2

1000m2 Community Pavilion

Meeting and Function Area 250 m2

Kitchen & Bar 150m2

Storage 300 m2

Seating & Under Cover Area Outside building footprint

Toilets & Change Rooms 300 m2

Car Parking Located within recreation reserves, surrounding the pavilion

Open Space Located within recreation reserves

0.7 ha site Arts and Culture

Performing Arts Centre, Cultural and Community Space 1,500 m2

Car Parking Approx 85 spaces 3000m2

100m2 Shelter and Toilet Amenity

Shelter and Toilet Facilities

** Layout shows approximate proportional area allocation (NOT TO SCALE)

Armstrong Creek Urban Growth Project
LOCAL HUB – 4 SITES

Appendix 13



Business and Retail Activity

Local Convenience
Up to 1,000 m²

Car parking

**0.6 ha site
Community Complex**

Community Rooms / Meeting Space
includes circulation and shared amenity
200 m²

Sessional / Consultation Rooms
100 m²

Storage Space - 75 m²

Child Care
120 Places
1525 m²
(685 m² Indoor)
(840 m² Outdoor)

Dual Kindergarten
500 m² Indoor
1112 m² Outdoor

Car parking
(~ 1 space / 4 kids, plus staff parking, roads, bike racks, WSUD, etc)
Approx. 45 spaces
1,575 m²

Open Space/
Landscape
500 m²

**3.5 ha site
Primary School**

Carparking

Class Rooms

Administration

Indoor Sports Complex

General Meeting Space

Open Space
(Ovals, basketball courts, etc)

**8 ha site
Active Open Space**

Active Sport Space

2 Cricket / football ovals
OR 4 Soccer

2 Netball Corner Park

**0.25 ha site
Health and Wellbeing Complex**

Carparking
(~ 1 space / 15 m², plus staff parking, roads, bike racks, WSUD, etc)
Approx. 45 spaces
1575 m²

Open Space
325 m²

Community Health & Well Being Services
600 m²

**500m²
Community Pavilion**

Meeting Space
100 m²

Kitchen & Bar
50m²

Storage
175 m²

Toilets & Change Rooms
175 m²

Recreation Complex
**0.9 ha site
Seniors Recreation Reserve ***
 *West Precinct

Bowls / Croquet Recreation 4000m²

Car Parking 1500m²

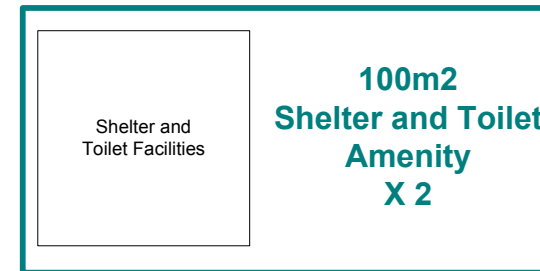
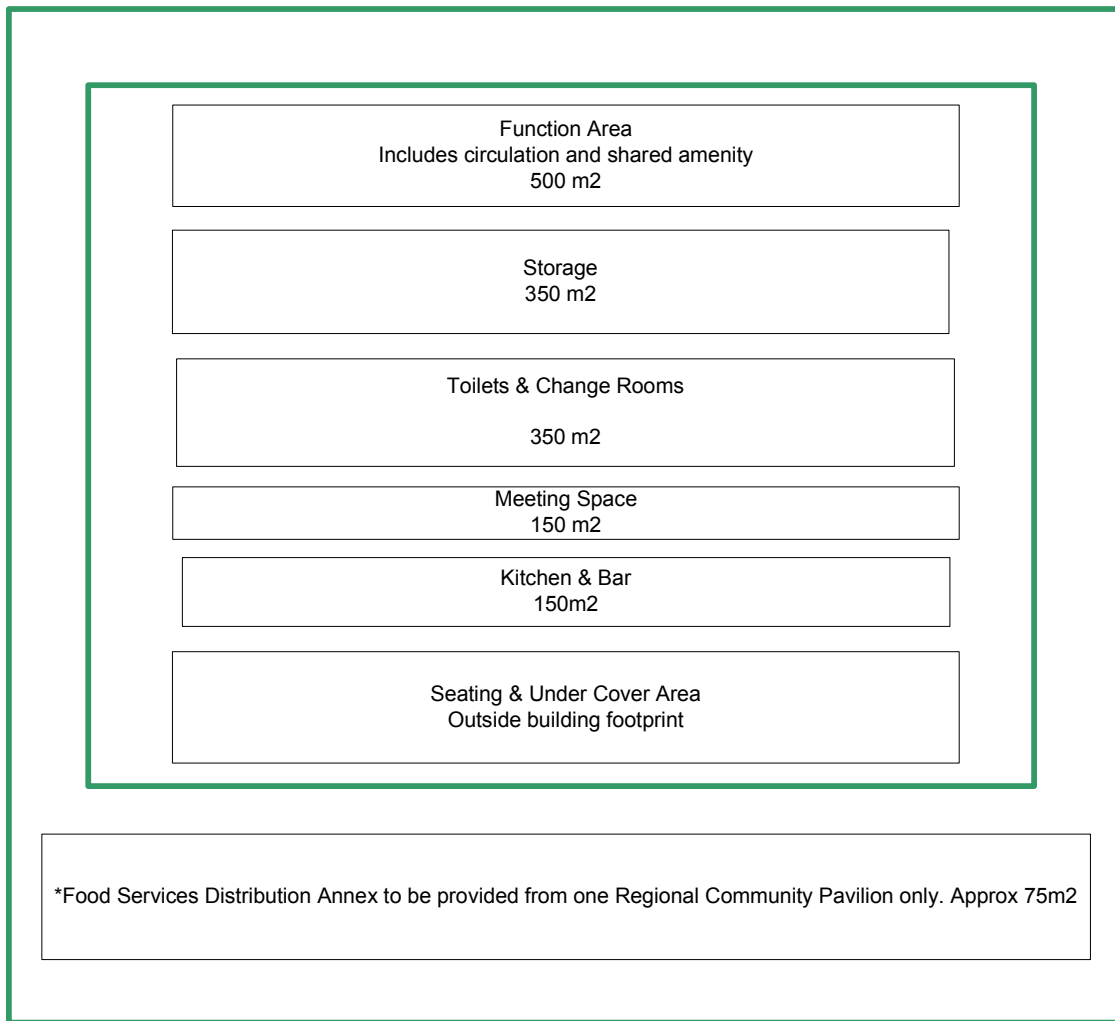
**100m²
Shelter and Toilet Amenity**

Shelter and Toilet Facilities

** Layout shows approximate proportional area allocation (NOT TO SCALE)

Armstrong Creek Urban Growth Project Appendix 13
REGIONAL RECREATION RESERVE HUB – 3 SITES

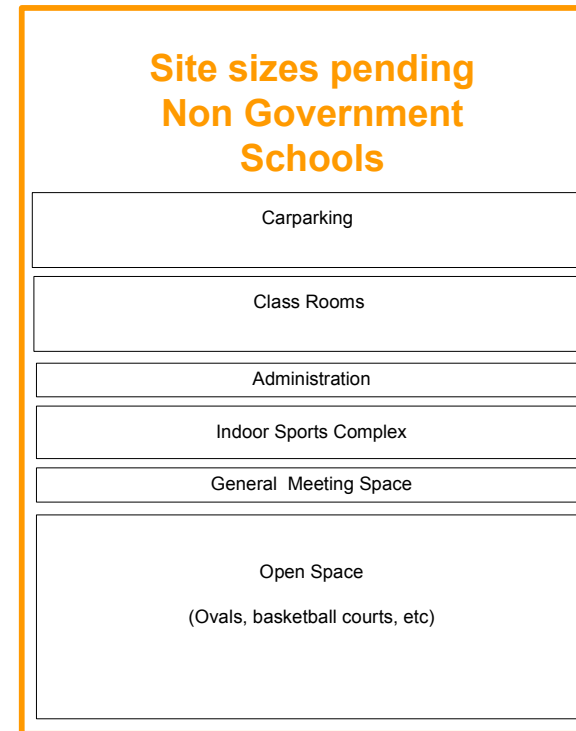
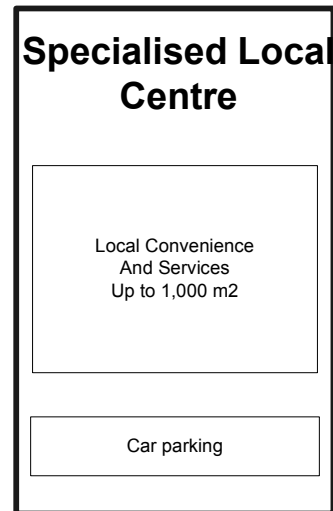
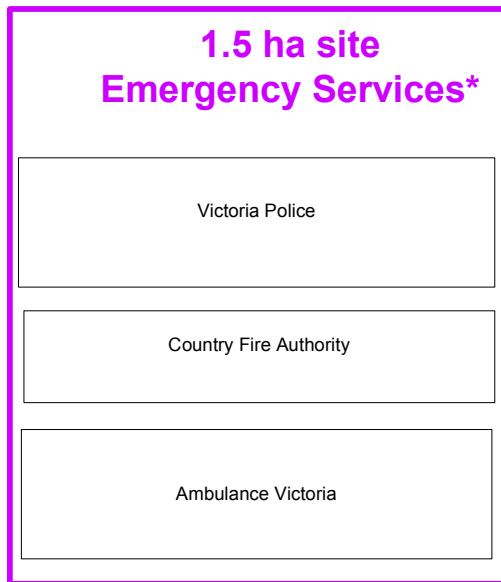
Community Pavilion
1500m²



**** Layout shows approximate proportional
area allocation (NOT TO SCALE)**

Armstrong Creek Urban Growth Project Appendix 13

- **EMERGENCY SERVICES HUB – 1 SITE**
- **SPECIALISED LOCAL CENTRE – 3 SITES**
- **NON GOVERNMENT SCHOOLS – 7 SITES** (indicative only)
- **CONVENIENCE STORE – SITES PENDING**



* Emergency Services Hub indicatively located to the north of the Major Activity Centre – in the Horseshoe Bend Precinct.

** Layout shows approximate proportional area allocation (NOT TO SCALE)