

COMMUNITY INFRASTRUCTURE AND PUBLIC OPEN SPACE STRATEGY



Shire of
Serpentine
Jarrahdale

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10 January 2017

COMMUNITY INFRASTRUCTURE AND PUBLIC OPEN SPACE STRATEGY

PREPARED BY CCS STRATEGIC + TPG & PLACE MATCH +

SHIRE OF SERPENTINE JARRAHDALÉ

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PART A: CONTEXT

1.0 Project Background

The intent of this exercise is to provide a holistic assessment of the community infrastructure and public open space requirements across the whole of the Shire, with specific attention given to the need for:

- Sporting space and facilities
- A regional sporting complex; and
- A swimming pool.

The following sets out our general approach and philosophy in planning for community infrastructure and public open space:

- Equitable provision of community facilities and services across the Shire with regard to the local area needs
- Connecting future facility provision to areas of population growth to ensure community facilities and service address future community needs
- Encouraging the development of community hubs that act as focal points for community activity and encourage greater integration of services and ease of access for service users
- Planning and designing community facilities to ensure flexibility and the capacity to adapt to changing community needs
- Planning community facilities in an integrated way that includes integration with public spaces, business opportunities and active transport networks
- Recognition of the importance of partnerships including the possible involvement of a range of other stakeholders including state government and the private sector.

The Shire has undertaken an extensive amount of work to date to determine current and future community infrastructure requirements. In 2016, AECOM prepared a draft Community Infrastructure Plan, which reviewed the Shire's existing Community Facilities and Services Plan (2009). A variety of other relevant documents considered include Shire policies and structure plans, The Briggs Park Recreation Precinct Master Plan, the Feasibility Study for a Community Sport & Recreation Precinct in Serpentine Jarrahdale Shire (2013) and the Mundijong-Whitby Community Infrastructure Feasibility Study (2016).

The specific requirements identified in these previous bodies of work have been evaluated, validated or amended to produce a current schedule of requirements. This outline of requirements is included in the 'schedule of community infrastructure' in this report.

This schedule of requirements will form the basis of the implementation options, concept plans and developer contributions calculations prepared during subsequent stages of this project. As such, feedback from the Shire is integrated at this stage to ensure the schedule of requirements, and work to follow, aligns with the local expectations and aspirations.

2.0 Vision and guiding principles

The following principles have been extracted from previous bodies of work undertaken by the Shire that relate to the provision of community infrastructure. They have been reviewed and expanded to guide community infrastructure and sporting space provision recommendations.

When applied, these principles have been shown to enhance the performance potential of community facilities and spaces in terms of achieving higher levels of utilisation, being recognised as a source of social support in communities, and contributing to the identity and sense of place of an area.

They also reflect key trends in community facility and sporting space planning as evidenced by direct experience, extensive case study research and literature reviews. These guiding principles should be used to guide the planning and design of existing (upgrades) and/or new community facilities and sporting space across the Shire.

2.1 A co-ordinated network of facilities

Community facilities and sporting spaces should be planned and delivered to create an integrated hierarchical network of facilities and spaces. This approach requires consistency in application across the various levels of provision (including regional, district and neighbourhood) and enables the duplication of services, programs, spaces and amenities to be avoided or minimised. This approach also allows distinct, unique or specialist services or amenities to be provided in appropriate locations.

2.2 Central to catchment and equitable access

Community facilities and sporting spaces should be centrally located within the catchment area they intend to serve to enable equitable access. Facilities should be outward facing, welcoming and designed to be accessible to all.

2.3 Location to promote visibility and accessibility

To best serve the needs of the community, and promote increased levels of utilisation, facilities should be highly visible and easily accessible. Buildings must comply with the legislative requirements of universal design and provide high levels of physical access, connectivity and wayfinding. Visibility of activity within the building also attracts increased interest.

2.4 Integrated/co-located

Co-locating and integrating community facilities to create a community hub is strongly encouraged. The grouping of compatible uses within the one location provides a focal point within the community, providing opportunities for people to meet, learn, play, socialise and express their culture.

The community hub model can extend beyond co-locating community facilities, to clustering community facilities with other activity generating uses such as transport nodes, shops, schools, childcare, open spaces and playgrounds.

2.5 Resilient and multiple use

Community facilities should be designed and built for maximum flexibility, with the capacity to be readily modified or expanded to adapt as needs change. Acknowledging that for some activities there is a minimum size or fit-out standard, buildings should be multi-purpose, and capable of delivering a range of programs and services.

2.6 Serving identified social needs

Community facilities should address the identified social needs of the particular community in which it is located in order to contribute to the community's health, wellbeing and quality of life. Programs, activities and services offered should respond to the needs and interests of the people that live and work within the particular catchment area to foster long term social benefits for the community. The planning and design of facilities should reflect the potential programs, activities and services envisaged. It is essential to note that the Shire does not intend to provide facilities and services of private, state government and religious nature.

2.7 Contribute to public domain and sense of place

Community facilities should contribute to urban vitality, local identity and sense of place, and become important focal points and gathering places for the community. A strong connection between the facility and the broader community can be fostered through the development of facilities on landmark sites, and with distinctive architecture by employing biophilic design principles.

Community facilities should be distinctive civic buildings and welcoming places, and should present as a reflection of local culture. This helps ensure they develop a strong local profile and are well known in the community, thereby promoting high levels of usage. Incorporating public art into the building design is also important in creating distinctive and welcoming facilities.

2.8 Connected to public transport, pedestrian and cycling networks

Community facilities and sporting spaces should ideally be located within a 400 metres walking distance of a regular public transport stop. Linkages to pedestrian and cycling networks provides another avenue to promote the accessibility of facilities, and is a further means to encourage sustainable transport choices and a healthy and active lifestyle.

2.9 Sufficient size and design to enable expansion and adaptation

Site selection and building design must allow for expansion or modification as the community and its needs change over time.

2.10 Financial viability and environmental sustainability

Community facilities should be financially viable (which may include an agreed operating loss in recognition of a broader community benefit) and provide value for money for their users, owners and operators.

While capital costs are a major issue, ongoing operational costs are likely to exceed the capital investment and become a critical cost consideration. Building design efficiencies that reduce ongoing operating and maintenance costs, and include revenue generating elements such as tenantable spaces, should be considered.

2.11 Safety and security

Community facilities should be designed in accordance with Crime Prevention through Environmental Design (CPTED) principles. They should provide a high degree of personal safety for people entering and leaving the building, especially at night. Locating facilities in active areas and providing adequate lighting ensures higher levels of passive surveillance and increased security.

2.12 Master planned and staged strategy

Master planning provides an opportunity to locate facilities and spaces in areas where utilisation can be optimised and negative or consequential impacts on the community, environment and other uses can be minimised. Building location and orientation are also important considerations in reducing any potential future conflict with users and the buildings surrounds.

Many of the master plans will respond to growing population demands over time and therefore will be expected to be progressively implemented. A staged implementation plan is inherent in the master planning process.

3.0 Hierarchical Approach

In line with the key principles presented above, this strategic assessment adopts a hierarchical approach for the planning and delivery of community infrastructure and public open space based upon four levels that represent population catchments of different sizes. This recognises that facilities with different types of spaces and amenities are required to meet the range of needs and uses for the community.

Level	Catchment	Description
Regional	Services a catchment of the entire Shire, surrounding local governments and portions of the Perth and Peel catchment.	A facility and or service that provides extensive opportunities for participation and use.
District	Services a catchment of a mid-size township and surrounding smaller residential areas.	Provides facilities and open space to facilitate social and cultural activities and cohesion. District open space must be of adequate size to accommodate the function.
Neighbourhood	Services a catchment of a small township and or residential area.	Provides for local children's play and as resting places, designed as small intimate spaces, where appropriate, and to allow pedestrian connectivity, and create a sense of place.
Local	Services a catchment of the immediate residential population.	Provides for local children's play and as resting places, designed as small intimate spaces, where appropriate, and to allow pedestrian connectivity, and create a sense of place.

PART B: PUBLIC OPEN SPACE

4.0 Public Open Space Functions

The function of public open space can be categorised into three broad categories. Department of Sport and Recreation (2012) has defined these as recreational space, sporting space, and nature spaces. The various functions allows the community to participate in a range of passive and active, formal and informal activities.

Function	Purpose	Description
Recreation spaces	Recreation spaces provide a setting for informal play and physical activity, relaxation and social interaction	<p>Recreation spaces enhance physical and mental health through activity that provides relaxation, amusement or stimulation.</p> <p>Recreation spaces can be accessed by all to play, socialise, exercise, celebrate or participate in other activities that provide personal satisfaction or intrinsic reward.</p> <p>Recreation spaces include gardens and open parklands, community gardens, corridor links, amenity spaces, community use facilities, civic commons or squares.</p>
Sport spaces	Sport spaces provide a setting for formal structured sporting activities.	<p>Sport spaces provide a venue for formal structured sporting activities such as team competitions, physical skill development and training.</p> <p>Sport spaces are designed to accommodate playing surface, buffer zones and infrastructure requirements of specific or general sporting activity.</p> <p>Players and spectators attend with the express purpose of engaging in organised sporting activity, training or competition or watching the game.</p> <p>Most sport spaces can also be accessed by community members for informal sport and recreation.</p>
Nature spaces	Nature spaces provide a setting where people can enjoy nearby nature and protect local biodiversity and natural area values.	<p>Nature spaces provide opportunity for low-impact recreational activities, such as walking, cycling, picnicking, playing, watching or exploring natural features.</p> <p>Nature spaces may include bushland, coastal areas, wetlands and riparian habitats, and geological and natural features. Sites are managed to enable recreational access while protecting local ecological and biodiversity values.</p>

5.0 Public Open Space Provision

A balanced provision of sport, recreation and nature space is suggested for urban areas. The provision of public open space is directly dependent on the function and the following table outlines the approach of public open space delivery in the Shire. The term 'senior oval' refers to a playing field sized to be at least 205 x 175m with an area of 3.587ha, as well as having a preferable North-South orientation. Schools are expected to provide the facilities and open space as outlined, and the Shire can supplement unmet need through neighbourhood or, most preferably, district open space. Larger scale recreational and nature spaces are already prevalent within the Shire with opportunities for participation and use which may require further activation.

	Sport	Recreation	Nature	Community Facilities (capacity)	Hardcourts (number of)
Regional	Specific to function			>1000	50+
District	2/3 x Senior Oval (provision can be associated with secondary school)	Heritage Park Serpentine Falls Whitby Falls Langford Park		300-500	8 (standard provision with secondary school)
Neighbourhood	Senior Ovals (provision to be associated with primary school).	Neighbourhood parks of around 3000-5000m ² to be provided, serving 600-800 dwellings according to Liveable Neighbourhoods (2009).		50-299	2 (standard provision with primary school)
Local	Junior Ovals (provision to be associated with primary school).	Local parks of up to 3000m ² to be provided according to Liveable Neighbourhoods (2009).		<50	2 (standard provision with primary school)

6.0 Public Open Space Development

In order to effectively address the distribution and implementation of public open space for local conditions, it is recommended that the Shire prepares a local planning policy to establish a framework for the preparation and assessment of structure plans and subdivisions. This would outline variations to state planning documents, such as Liveable Neighbourhoods (LN), to address the critical role stormwater has on urban design, and public open space distribution, function and design. The intent of the policy would be to facilitate stormwater networks and simultaneously offer a green space network through development areas. Rather than being singular and standalone, local and neighbourhood parks would be connected or attached to the green network to provide amenity for both the community and visitors.

PART C: COMMUNITY FACILITIES

7.0 Planning Rationale for selected community facility provision

There are numerous community infrastructure types or categories that warrant special consideration in their planning. These are detailed within this section.

Any indication of ratios are not to be applied and hard and fast but give guidance to be used in context of the principles to determine possible future need and infrastructure requirements.

7.1 Aquatic Facilities

Overview

130 municipal swimming pools are provided across 104 of the 140 local governments in Western Australia (WA). These facilities are a mix of indoor and outdoor, seasonal and all year operations, comprising a variety of 50m, 33m and 25m lap pools, an assortment of learn to swim, program and toddler's pools, pools with a beach entry and informal water play areas, and specialist pools for slides and flumes, water polo and diving. The nearest facilities to the Shire are Armadale Aquatic Centre, Kwinana Recquatic, Rockingham Aquatic Centre, South Lake Leisure Centre, Murray Leisure Centre and Mandurah Aquatic and Recreation Centre. The proximity of the outdoor pools at Armadale's facility is within 12 km for Byford residents, 21km for Mundijong residents, and considered within 30km for both Serpentine and Jarrahdale residents. Residents are also within 30km from Kwinana Recquatic's range of pool facilities, which includes a hydrotherapy pool.

Traditionally, aquatic facilities were provided as stand-alone swimming centres and more recently form part of more expansive leisure centres which also incorporate a variety of dry-side infrastructure (indoor and outdoor courts, gym, group fitness, outdoor play, crèche etc.).

Local governments typically provide aquatic facilities, which are either managed by Council staff or outsourced to a contract manager. However, there are some commercially provided learn to swim specialist facilities.

Aquatic facilities within WA have generally offered a similar level of service to the community, mainly comprising of:

- Fitness activities e.g. lap swimming, aquarobics, water walking
- Learn to swim
- Recreational swimming and water play
- Swim training for stroke, endurance and speed improvement
- Competitive swimming in 25m or 50m, with some 33m pools remaining
- Leisure activities
- Rehabilitation services and other hydrotherapy programs; and
- Use for private parties.

Within WA, the larger and more diverse aquatic centres may also cater for other activities dependant on the depth of the water and the extent of programmed water space availability, including:

- Diving
- Water polo
- Synchronised swimming
- Canoe practice

- Life-saving practice and competition
- Sub-aqua training
- Underwater hockey; and
- Other leisure based activities including water slides, spa and sauna.

When planning for aquatic facilities, consideration needs to be given to existing private and public facilities available to the public from schools, commercial operators and natural water bodies.

Shire of Serpentine-Jarrahdale

In the Shire of Serpentine Jarrahdale (the Shire), the only swimming pools, other than private back yard pools, are situated at the Baptist Serpentine Youth Camp and at Byford Secondary College. The Serpentine Camp pool is a 20m by 9.5m seasonal unheated pool.

The Byford Secondary College pool has a 10m x 6m Hydrotherapy Pool, with level wet deck overflow edge guttering, stepped entry & seat with venturi air spa jets. Stainless steel railing is installed to all entry points as well as the full internal perimeter at waterline level. A stainless-steel pool lift is also to be installed.

Serpentine falls is the only natural water body (ocean, river or lake) within the Shire that has been developed to enable public swimming.

Benchmark data (CERM and Yardstick) and industry reviews indicate that other than commercially run specialist lean to swim facilities, most of the 130 swimming facilities across WA operate at a loss. The very few exceptions are those large high-end facilities with a very substantial catchment population of 100,000 or more.

Benchmark data indicates until the Shire's total population exceeds 100,000, estimated to be achieved at around 2050, any swimming pool development is likely to carry an operating loss (refer to benchmarks for cost recovery).

In the interim, that is for the next the next 30 years, a logical approach to aquatic facility development should it be pursued, would be to design and scale a venue that avoids, or at least minimises, operating losses.

More modern pool facilities are ideally included as part of a larger community hub development include a variety of leisure water features designed to increase appeal and attract customers. These may include:

- Varying water depths, with extensive shallow or beach areas
- Wave and surfing pools
- Water slides and flumes
- Fast flowing river rides and rapids
- Water jets and water cannons
- Water features such as rain showers, jets and sprays
- Steam room and spa facilities, including varying temperatures
- Children's wet play equipment
- Feature lighting and sound, to introduce a more theatrical environment
- Theming to increase excitement and appeal
- Moveable booms to facilitate greater diversity of 50m water space use than purely lap swimming; and

- Moveable floors to facilitate greater diversity associated with programmable water space.

Forecasting aquatic facility needs based on population milestones does not take into account the specific needs of the community that an aquatic facility will serve.

In determining whether and when to provide a swimming facility within the Shire, consideration should be given to its primary function and design focus (or unique selling proposition).

There are four specific functions around which a facility could be developed:

- Water play
- Community wellbeing
- Competitive swimming; and/or
- Health and safety

These functions are not in themselves exclusive, and elements of each focus can be included in any design, however the purpose of the centres should be clearly understood before design considerations are entertained. Below is a summary of what each focus area could contain and what it need not contain.

Focus	Description	Key Elements	Exclusions
Water Play	Local community pool for water play and recreational swimming, also suitable for learn to swim and drown proofing for all ages which also serves as a social meeting place.	<ul style="list-style-type: none"> • Beach entry • Shallow water • Water features • Divisible area for lessons • Relaxation spaces • Café style service • Landscaped surrounds • Can be seasonal • Can be outdoor • Heated for lessons (29-31°C) 	<ul style="list-style-type: none"> • Lap lanes • Competition swimming • Deep water
Community Wellbeing	Larger scale leisure centre that attracts people for a wide variety of activities and for a 'day out' experience. A day out destination place offers diversity of activity, not only for the local community, but also containing infrastructure which attracts users from further afield for extended visits.	<ul style="list-style-type: none"> • Beach entry • Shallow water • Water features • Divisible area for lessons • Deep water • Water slides/ flumes • Lap swimming lanes • Special feature pools <ul style="list-style-type: none"> ○ Wave pool ○ Water polo pool ○ Diving pool ○ Hydrotherapy pool • High amenity finish • Landscaped surrounds • Bodies of varying water temp (25-35°C) 	<ul style="list-style-type: none"> • Nil
Competitive Swimming	Lap swimming facility, focusing on fitness swimming, squad training,	<ul style="list-style-type: none"> • FINA compliant 50m lanes • Starting blocks • Timing equipment 	<ul style="list-style-type: none"> • Water play • Shallow water

	athlete development and competition.	<ul style="list-style-type: none"> • Water polo dimensions (length, width and depth) • Officials rooms • Moveable boom • Diving tank • Diving tower and boards • Low temp (26°C) 	
Health and Safety	Specialised water space that will accommodate learn to swim and hydrotherapy	<ul style="list-style-type: none"> • Indoor heated water • Divisible area for lessons • Ramp access • High temp (30-35°C) • Relatively small 	<ul style="list-style-type: none"> • Outdoor • Unheated • Seasonal

Commentary

The Aquatic Sports Strategic Plan prepared by the Department of Sport and Recreation, in conjunction with other key stakeholders, does not allude to the requirement or desire for the Shire to become a competitive swimming centre within the next 30 years.

Accordingly, there is no need for a FINA compliant 50m swimming pool, and certainly based on population, no justification for such a facility. At this stage, there is no FINA compliant facility in WA. Improvements to HBF Stadium in Mount Claremont (host of 2 world swimming championships) are necessary to comply with revised FINA regulations. This improved venue, together with Cockburn Central and HBF Arena in Joondalup will provide a suite of 50m indoor complexes within the Perth Metropolitan area suitable for all but international competition.

A similar facility in the North-Eastern Region (Swan/Mundaring/Kalamunda) will complete the regional provision in the immediate to medium term, with the Peel Region being the next to develop post 2031. In short, the provision of a 50m competition pool within the Shire is not justifiable.

There is however the need to provide learn to swim facilities for safety purposes and prevent instances of drowning within the local community. Local governments currently play an important role in promoting water safety within communities, and as such, access to a learn to swim space is important.

Overall health also warrants consideration. With an ageing population and a growing recognition of the benefits non-weight bearing exercise, there is a strong argument for a facility that caters for water based exercise. Like learn to swim programs, it is essential to offer indoor heated water for these activities to maximise function and appeal.

The final element to be considered is provision for water play. This is in some way the non-essential “fun stuff” that gets added when the primary function has been taken care of, but importantly it adds to the appeal and viability of the centre. Water features, play areas and specialist fun equipment can all be added to a basic learn to swim and water exercise space, dependent upon the extent of the budget. Consequently, in the immediate to medium term, the priority for the Shire should be to provide an aquatic facility that can:

- Accommodate a strong and robust learn to swim program
- Provide water based exercise programs for health and rehabilitation purposes; and
- Offer a range of water play experiences (tailored to budget).

The facility should be heated, indoors, operated year-round and co-located with other leisure facilities to extend the leisure experience and community development function.

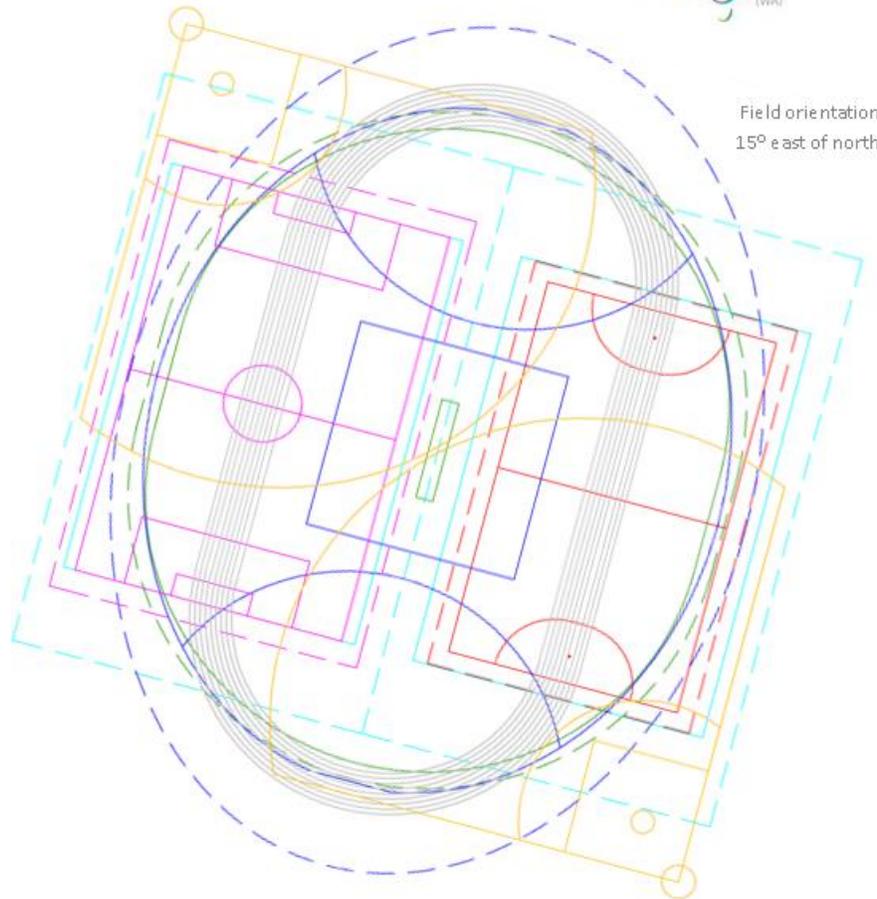
The only logical option of co-locating an aquatic centre with an existing facility is in Byford at the Serpentine Jarrahdale Community Recreation Centre at Briggs Park. This would require moving the proposed BMX development to another location. This option is also somewhat redundant as a result of the development of the indoor heated hydrotherapy pool at Byford Secondary College which is pending negotiation regarding public access.

7.2 Playing fields

Grassed playing fields are a critical part of mandatory 10% public open space (POS) provision, and are described under the Department of Sport and Recreation's classification of POS as Sports Spaces. These spaces are the most prescriptive of the POS classifications with neither Nature Space or Recreation Space (the other two classifications) able to function as Sports Space, while Sports Space logically becomes recreation space when it is not allocated for sporting use, and can be surrounded by nature space. The Sports Space function should be accommodated within a hierarchy of provision from regional, to district, neighbourhood and local.

Note that the unit of provision is the equivalent of a senior AFL playing field. The following template provides an indication of how a sports space should be considered in the planning phase. Once specific sports allocations are known the actual dimensions can be refined to meet the particular code schedule for the sports space.

Generic Sports Field Layout for maximum flexibility
 Minimum area 205 x 175m - 3.587ha



Sport	Senior	Buffers and run-off areas
AFL	165m x 135m	6.5m EW +20m NS buffers
Football (Soccer)	100m x 64m	5m buffer all side
Rugby	100m x 70m	20m dead ball area NS + 7m buffer EW
Cricket	65m radius from stumps	Straight section aligned to 24.12m pitch
Baseball	27.4m x 27.4m diamond	Outfield 125m from home plate
Hockey	91.44m x 55m	4m buffer all boundaries
Athletics	400m track = 183 x 110m	Jumps areas and throwing fans included

Note that the rectangular dimensions quoted above will generally be adequate for the provision of parking and spectator amenities on a neighbourhood scale playing field. The corners of the site can accommodate this infrastructure if an oval shaped field is required and if the code allocated requires a rectangular field the site is sufficiently long to enable amenities at the top or bottom of the site. These are however generic comments and detailed site design will also need to consider topographical, environment and surrounding features. Note that if a neighbourhood scale development takes on a regional function (as is the case with WAFL grounds – a single oval with a regional function) then additional land will be required for spectator amenities and parking.

Guidelines for sports space provision include the following:

Hierarchy	Descriptor	Guideline	Area
Regional	Significant to residents of the whole Shire and those from surrounding jurisdictions. Regional spaces may support one particular activity but it is preferable for multiple compatible activities to be accommodated with shared or common use facilities.	1:250,000+	20+ha Within 20 min drive
District	Serves people from a particular, often geographic section of the community, for example, Byford/Oakford, Mundijong-Whitby, Jarrahdale Serpentine/Keysbrook.	1: 15,000 -1: 25,000	5-20ha Within 2km or 5 min drive
Neighbourhood	Function as the basic unit of open space provision for sports space. Focus is on providing specific playing field accommodations and associated amenities. The extent and level of sophistication of facilities is determined by demand and the particular sport's requirements	1: 5,000	1-5ha Within 800m or 10 min walk
Local	Often too small for efficient sports space provision but can carry training and overflow demand if required. Not normally included in planning for future sporting needs.	1: 1,000	0.4-1ha Within 400m or 5 min walk

These requirements are cumulative, with all being required. It is, however, to be noted that a higher order provision can meet a lower order requirement within the catchment area. For example, a district level facility will also provide a neighbourhood function within the relevant catchment for a neighbourhood space. Development of a regional sports space will also serve as neighbourhood and district sports spaces for those residents in nearby catchment proximity should there be a nearby resident population.

Two key determining criteria in facility planning are number of fields required and the location of the fields to ensure that populations are well serviced with accessible facilities.

In this context, looking forward to build-out of the Shire post 2050, and a total Shire population exceeding 100,000, the following provision will be required.

Hierarchy	Byford/Oakford	Mundijong-Whitby	Jarrahdale	Serpentine/Keysbrook
Catchment	50,000	50,000	3,000	4,000
Regional 1: 250,000	Nil	Nil	Nil	Nil
District 1: 15,000 -25,000	3 (6 fields)	3 (6 fields)	Nil	Nil
Neighbourhood 1: 5,000	4 fields	4 fields	1 field	1 field

By 2031, the more immediate planning horizon, the Shire population is expected to reach 55,794 and the sports space and facility quantities requirements are as follows.

Hierarchy	Byford/Oakford	Mundijong-Whitby	Jarrahdale	Serpentine/Keysbrook
Catchment	35,000	15,000	2,500	3,000
Regional 1: 250,000	Nil	Nil	Nil	Nil
District 1: 15,000 -25,000	2 (5 fields)	1 (2 fields)	Nil	Nil
Neighbourhood 1: 5,000	2 fields	1 field	1 field	1 field

It is to be noted that these sports spaces will need to be developed in various configurations to accommodate a variety of sporting codes including AFL, soccer, diamond sports, athletics, hockey and rugby. These spaces will also need to cater for hard courts for tennis, netball and basketball and beach volleyball based on the preferences from the local community and the demand generated.

The sports space development will also need to offer a variety of facilities and amenities including:

- Player change rooms
- Player showers and toilets
- Umpire change rooms
- Umpire shower and toilet
- Public toilets (universal access)
- First aid facilities
- Club storage
- Kiosk/canteen facilities
- Social facilities - clubhouse
- Playgrounds
- Access roads and car parking
- Pathways and trails
- Sports field and security lighting
- General landscaping
- Vegetation buffers
- Stormwater management

7.3 Netball courts

Netball tends to operate on an association basis with competitions often played on the one weekend day at a central location with multiple courts. These association facilities tend to be of a district scale (Langford - 22 courts, Gibson Park - 33 courts) and at times regional in scale (Matthews – 50 courts, Kingsway- 57 courts).

Club accommodation tends to be focused on training only with neighbourhood level provision frequently focused on schools, and at times on local government reserves. Note that primary schools provide two hard courts and high schools up to 8 hard courts. The school facilities are usually multi-marked.

Two courts are usually sufficient for club training while a district association facility would require at least 16 courts.

Currently netball players in the Shire play outdoors on four courts at Mundijong Oval or travel to Mandurah (Rushton Park -10 courts and now too small), Armadale or Langford. Others play indoors at the Serpentine Jarrahdale Community Recreation Centre or Armadale Arena.

As population grows there will need to be provision for training facilities throughout the Shire, and an association competition facility in either Byford or Mundijong, but not both.

Serpentine has an indoor court within the Clem Kentish Hall and there is a multi-marked hard court at the primary school. There are two defunct hardcourts at the equestrian centre. Subject to upgrades of the existing facilities, such as the possibility of multi marking some of the Clem Kentish tennis courts, Serpentine is adequately catered for.

In Jarrahdale, there is a single multi-marked hardcourt at the primary school, noting that the Bruno Gianatti Hall is too small for netball competition which could be used for skills training. Keysbrook is unlikely to have sufficient demand for a single purpose facility for netball at any time in the foreseeable future.

The focus for netball will need to be on Byford and Mundijong. The guidelines suggest one court per 3,000 to 4,000 residents, which indicates that a 16 court complex would meet the community’s need until 2036 when some expansion may be required. Planning should allow for expansion.

Hierarchy	Shire of Serpentine Jarrahdale
Regional	Potential expansion
District	1 x 16 courts
Neighbourhood	Nil

7.4 Basketball courts

Basketball operates differently to netball with a preference for indoor competition. By virtue of the limited number of indoor courts basketball tends to be accommodated in multi-purpose indoor recreation centres and spread across multiple weekdays, after school and in the evening, as well as on the weekend.

At present basketball is played socially at the Serpentine Jarrahdale Community Recreation Centre. The nearest Basketball Association administered competitions are located in Rockingham (Mike Barnett Centre), Bibra Lake (Lakeside Centre), Willetton (Willetton Sports Centre) or Mandurah (Mandurah Aquatic and Recreation Centre).

The guidelines for provision of basketball courts indicate one court per 4,000 residents, which suggests the need for around 12 courts by 2031. Current trends in indoor court provision are for larger numbers of courts (6 and 8) per venue. At present the Serpentine Jarrahdale Community Recreation Centre only provides 2 courts. Earlier planning has suggested this be expanded to 4 in the near future pushing west, noting that the entire site has a bush forever classification. This limitation was also investigated and support was given to the expansion of the courts given that the affected area is already degraded.

A subsequent multi-court venue in the Shire, nominally in the Mundijong area will need to provide at least 6 courts with an expectation that additional courts will be available in school facilities.

A major indoor recreation centre of at least 4 courts should be provided in Mundijong before 2031 with the capacity to expand to 6 courts by 2041.

Hierarchy	Shire of Serpentine Jarrahdale
Regional	Nil
District	1 x 12 indoor courts
Neighbourhood	Nil

7.5 Tennis courts

Tennis is best provided through a club structure and accordingly, a minimum number of courts are required to enable a club to operate. PLWA WA guidelines suggest a minimum of 8 courts in a single setting to serve a catchment population of around 15,000. A district level complex serving up to 60,000 residents would require at least 16 courts, noting that many of the stronger clubs in Perth Metropolitan area have 20 or more courts, and often a variety of court surfaces.

Grass court clubs tend to operate under a lease and maintain their own courts. Acrylic and synthetic grass surfaces are increasingly favoured due to versatility and year-round play. They also do not require an abundant water supply or labour intensive preparation and maintenance otherwise associated with grass courts.

Current and future provision is shown below.

Hierarchy	Byford /Oakford	Mundijong-Whitby	Jarrahdale	Serpentine /Keysbrook
Current	2 acrylic tennis courts at Park Road and 7 multi-marked acrylic courts at Byford high School.	4 defunct acrylic courts at Mundijong Oval.	4 acrylic courts on Munro Street.	4 acrylic courts on Wellard Street.

Future	Current provision adequate to 2031. Consider a second club (new location) beyond that time due to limitations on school site.	Establish an 8 court club facility (for growth to 2040) and then consider expansion to 12 or 16 courts dependent on demand.	Refurbish existing 4 courts, should be sufficient to meet future demand.	Refurbish existing 4 courts, should be sufficient to meet future demand.
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It is noted that the 7 multi-marked acrylic courts at Byford Secondary College are not currently used for community purposes, as initially intended. This facility would be sufficient to host a local tennis club if access to toilets and clubhouse facilities were provided. This would require an appropriate shared use agreement to be negotiated with the College, ideally covering all sporting amenities on the College site.

7.6 BMX tracks

There is currently a district level facility at Briggs Park which is functionally of a regional standard. It is understood that there are proposals to improve the track and add lighting to the facility. Previous work has highlighted the requirement for both a district level bitumen track and local level dirt track facility in the Mundijong-Whitby catchment and a subsequent local level dirt track in Byford. However if a new district level but functionally regional bitumen BMX track is established in Byford, the scale of the facilities required in Mundijong-Whitby will diminish. Given there is a local informal track in Serpentine's Recreation Precinct, a district level bitumen track will still be required within the Shire but the bitumen track will not need to include a UCI elevated starting platform or other embellishments for competition. This level of competition would go to the sub-regional facility in Byford.

It is also noted that the Briggs Park facility attracts riders from well outside the Shire catchment. A potential location for consideration if the track were to be relocated is the regional sports space site on Kiln Road, Cardup.

Hierarchy	Shire of Serpentine Jarrahdale
Regional	1 x sub-regional facility
District	1 x district facility
Neighbourhood	Nil

7.7 Youth facilities

Repurposing the existing Briggs Park Pavilion as a youth centre once the new change room and clubroom facilities are developed on site is suggested. A similar type of accommodation will be required in Mundijong-Whitby and it will ideally be co-located as part of a community hub offering multiple facilities, services and activities. In Serpentine, youth programs can be accommodated through the Clem Kentish Hall.

Hierarchy	Shire of Serpentine Jarrahdale
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Regional	Nil
District	1 x district facility in Byford. Colocation in Mundijong Whitby
Neighbourhood	Nil

7.8 Skate parks

The intention is to develop skate facilities in association with the youth facilities and/or BMX facilities promoting the community hub model. A small skate park adjacent to the Briggs Park Pavilion in Byford as part of preceding planning is suggested. It is understood that the planning and design process for this small facility is currently underway. A major skate park is also proposed for Mundijong-Whitby and could be aligned to either the BMX track, youth space of potentially all together.

Note that if the BMX track at Briggs Park was to be relocated, there may be sufficient grounds to upscale the skate park at Briggs Park to a district level facility. This would need to be addressed during the consultation phase of a feasibility study.

Mundijong, Serpentine and Jarrahdale all have an adequately sized skate facility.

Hierarchy	Shire of Serpentine Jarrahdale
Regional	Nil
District	2 x district level facilities
Neighbourhood	Nil

7.9 Motocross and Recreational Trail Bike Riding

Whilst these two activities are vastly different in their facility needs, (formal track versus informal tracks and trails), their common element is the need for noise isolation.

The Shire is part of the peri-urban fringe and looked to for the accommodation of noisy activities in semi-remote locations.

There are 21 motocross tracks in WA of which only 5 are metropolitan linked including Hendley Park in Cardup. Proximity to the adjacent landfill and the associated buffers may protect it from being impacted by urban development. Strengthening these protections may be necessary.

There is also a motocross facility located on private land at Lot 27 South Western Highway, Keysbrook.

Trail bike riding is for the most part an informal, uncoordinated and consequently unregulated activity. There are, however, several trail bike clubs and informal riding groups. There are five public access off-road areas for trail bike riders in the nearby area, the nearest, aside from Hendley Park where club membership is required, is located at Thomas Road in Medina.

Consideration may need to be given to land allocation for this purpose as there is a perennial problem of unlicensed riders on unlicensed trail bikes (and at times quad bikes) riding without approval of the land owner on private and public land. At least with a designated off-road vehicle area identified, those wishing to do the right things are provided an acceptable option and those caught doing the wrong thing can be advised of an approved location for their activity.

7.10 Equine facilities

There is a strong equestrian fraternity, and numerous horse related facilities, in the Serpentine Jarrahdale area. To complement the facilities, there are approximately 60 km of existing trails managed by the Shire.

There are a range private/commercial facilities such as:

- Jarrahdale Equestrian Centre – Jarrahdale Road
- Byford Trotting Training Complex – Lot 37, Thatcher Road, Byford.

There are also community facilities including:

- Peel Metropolitan Horse and Pony Club – Lot 427, 467 King Road Oldbury (R36950)
- MTSTA Training Track – Lot 325, 1342 Webb Rd, Mardella (R2166); and
- Serpentine Horse and Pony Club and Serpentine Foothills Polocrosse Club – Lot 778 Karnup Road, Serpentine
- Darling Downs Bridle Trails – Lot 3263 Evening Pearl Court (R35701)
- Riding for the Disabled Association facility, Lot 281 Gossage Road, Cardup (R46388)

Similar to motorsport activities, equine activities often feel the pressure of urban development. Appropriate zoning can alleviate some of these pressures.

8.0 Summary Tables

There are numerous community infrastructure types or categories that warrant special consideration in their planning. These are summarised below. Various implementation options are provided for consideration noting that design and actual implementation will be detailed further in the community infrastructure implementation plan. The implementation options will nonetheless be dependent on a range of external conditions such as acquisition of land, environmental factors and investigation of water availability particularly for sporting fields. In terms of sporting requirements, training facilities are generally expected to be met by school facilities and competition level sports where relevant would be provided by the Shire.

8.1 Byford/Oakford

Trigger year	Current 2016	Built-out Requirement	Built-out Gap	Implementation Options
Population	19,347	50,000	50,000	
1. Aquatic facilities	Nil provided by Shire. Other: <ul style="list-style-type: none"> • Baptist Serpentine Youth Camp (seasonal unheated pool). • Byford Secondary College (hydrotherapy pool) • Serpentine Falls. 	Nil based on population milestone and CERM PI based cost recovery viability measures for a Shire funded centre.	Service delivery needs assessment suggest requirement for: <ul style="list-style-type: none"> • Strong and robust learn to swim program • Water based exercise programs for health and rehabilitation purposes • Range of water play experiences. 	Options: <ul style="list-style-type: none"> • Negotiate community access to Secondary College (hydrotherapy pool) – short term • Provide a pool at Serpentine Jarrahdale Community Recreation Centre (Shire or commercial provider) –short term • Provide at Kiln Road site (Shire or commercial provider) – long term • Provide at Kiernan Street site (Shire or commercial provider) – long term • Consider alternative sites for commercial provider – short or long term

2. Playing fields	<p>1 District Park:</p> <ul style="list-style-type: none"> • Briggs Park <p>4 Neighbourhood Fields:</p> <ul style="list-style-type: none"> • Byford Secondary College • Kalimna • The Glades • Bill Hicks Reserve 	<p>District (1:15,000-25,000) 2-3, x 2-3 Ovals</p> <p>Neighbourhood (1:5,000) 10 x Singular Ovals</p>	<p>1 Additional District Playing Field of 2-3 fields noting that Byford Secondary College and potentially Salvado College playing fields will enhance the district sports space capacity of Briggs Park</p> <p>4-6 Additional Neighbourhood Playing Fields dependent upon size of district sports space allocations, and noting that Bill Hicks Reserve should ultimately be downgraded from a sports space to a recreation space</p>	<p>District Space:</p> <ul style="list-style-type: none"> • Orton Road (2x) or • Kiln Road (2+) <p>Neighbourhood spaces:</p> <ul style="list-style-type: none"> • 4-6 Additional Senior Sized Fields required with/separated from schools. <p>Aim is to have a total of 10 senior AFL size playing fields in the catchment.</p>
3. Netball courts	<p>2 x courts</p> <ul style="list-style-type: none"> • Serpentine Jarrahdale Community Recreation Centre 	<p>District facility: 1 x 16 courts</p>	<p>District facility in either Byford/Oakford or Mundijong/Whitby: 1 x 16 courts</p>	<p>Kiln Road or Kiernan Street</p>
4. Basketball courts	<p>2 x courts</p> <ul style="list-style-type: none"> • Serpentine Jarrahdale Community Recreation Centre 	<p>12 x indoor courts</p>	<p>10 x indoor courts</p>	<p><u>Options:</u></p> <ul style="list-style-type: none"> • Expand SJ Community Recreation Centre (additional 2-4 courts) Note: current Bush Forever classification and Bushfire Policy constraints and Provide additional 4-6 indoor basketball courts at an alternative location (Kiln Road site)

				<ul style="list-style-type: none"> • Provide a large regional level indoor recreation centre at Kiln Road featuring 8-10 courts and leave SJCRC as is with only 2 courts • Alternative location (such as Woodland Grove) for 8-10 courts if SJCRC is not expanded, or 4-6 courts if SJCRC is expanded
5. Tennis courts	2x acrylic courts <ul style="list-style-type: none"> • Park Road 7x multi-marked acrylic courts <ul style="list-style-type: none"> • Byford High School 	Local (8:15,000): 3 x facilities District (16:60,000) Nil	2 x local level facilities	Provided with schools, noting that these courts are likely to be multi-marked and not the preferred choice for clubs. If demand proven, Kiln Road or Kiernan Street (if demand is proven) for tennis only courts
6. BMX tracks	1 x District level form, function at regional level. <ul style="list-style-type: none"> • Briggs Park 	1 x District Dirt Track (1:10,000-30,000) 1 x Regional Bitumen Track (1:50,000+)	Upgrade planned for existing track. Additional smaller track required.	Regional: Kiln Road or Kiernan Street District: Alternative site such as Woodland Grove
7. Youth facilities	Bookable Space: <ul style="list-style-type: none"> • Byford Town Hall • Byford Country Club • SJ Community Resource Centre • Briggs Park Pavilion 	District Level Youth Specific Facility (1:20,000-30,000) 1 x Neighbourhood Community Centre	1 x District Level Facility 1 x Neighbourhood Community Centre	<ul style="list-style-type: none"> • Repurpose the existing Briggs Park Pavilion as a district youth centre • Considerations for a neighbourhood facility in the Glades which should be a multi-purpose facility rather than a youth specific facility.
8. Skate parks	Nil	1 x Neighbourhood (1:5,000-10,000) 1 x District (1:10,000-25,000)	1 x Neighbourhood (1:5,000-10,000) 1 x District (1:10,000-25,000)	Options: <ul style="list-style-type: none"> • Briggs Park • Kiln Street • Orton Road • Town Centre

				<ul style="list-style-type: none"> Alternative District/ Neighbourhood Site such as Woodland Grove
9. Motocross and Recreational Trail Bike Riding	Nil	Nil	Nil	
10. Equine facilities	Darling Downs King Road, Oldbury Gossage Road, Cardup	Nil	Nil	

8.2 Mundijong/Whitby

Trigger year	Current 2016	Built-out Requirement	Built-out Gap	Implementation Options
Population	8,400	50,000	50,000	
1. Aquatic facilities	Nil provided by Shire. Other: <ul style="list-style-type: none"> Baptist Serpentine Youth Camp (seasonal unheated pool). Byford Secondary College (hydrotherapy pool) Serpentine Falls.	Nil based on population milestone and CERM PI based cost recovery viability measures for a Shire funded centre.	Service delivery needs assessment suggest requirement for: <ul style="list-style-type: none"> Strong and robust learn to swim program Water based exercise programs for health and rehabilitation purposes Range of water play experiences. 	Options: <ul style="list-style-type: none"> Negotiate community access to Secondary College (hydrotherapy pool) – short term Provide a pool at Serpentine Jarrahdale Community Recreation Centre (Shire or commercial provider) –short term Provide at Kiln Road site (Shire or commercial provider) – long term Provide at Kiernan Street site (Shire or commercial provider) – long term Consider alternative sites for commercial provider – short or long term

2. Playing fields	1 x Neighbourhood: <ul style="list-style-type: none"> Mundijong Oval 	District (1:15,000-25,000) 2-3, x 2-3 Ovals Neighbourhood (1:5,000) 10 x Singular Ovals	2 Additional District Playing Fields offering 4- 6 playing fields 4-6 Additional Neighbourhood Playing Fields	District: <ul style="list-style-type: none"> Precinct A (with Highschool + Primary School) 2 fields Precinct C - Kiernan Street 3 fields Neighbourhood: <ul style="list-style-type: none"> Precinct E1 Precinct F (existing Mundijong oval) Precinct G 3 Additional Senior Sized Fields required with/separated from schools.
3. Netball courts	4 x courts Mundijong Oval	District facility: 1 x 16 courts	District facility in either Byford/Oakford or Mundijong/Whitby: 1 x 16 courts	Kiln Road or Kiernan Street
4. Basketball courts	Nil	12 x indoor courts	12 x indoor courts	Kiernan Street
5. Tennis courts	Nil	Local (8:15,000): 3 x facilities District (16:60,000) Nil	2 x local level facilities	Provided with schools, noting that these courts are likely to be multi-marked and not the preferred choice for clubs. If demand proven, Kiln Road or Kiernan Street (if demand is proven) for tennis only courts
6. BMX tracks	Nil	1 x District Dirt Track (1:10,000-30,000) 1 x Regional Bitumen Track (1:50,000+)	Upgrade planned for existing track in Shire. Additional smaller track required.	Regional: Kiln Road or Kiernan Street District: Alternative precinct
7. Youth facilities	Bookable Space: <ul style="list-style-type: none"> Mundijong Community Shed 	1x Regional level facility 1 x District Community Centre	1 x Regional Level Facility 1 x District Community Centre	<ul style="list-style-type: none"> Regional Facility as part of civic centre District Facility as part of the facilities at Kiernan Street.

	<ul style="list-style-type: none"> • Cardup Community Centre • SJ Community Resource Centre 	1 x Neighbourhood Community Centre	1 x Neighbourhood Community Centre	<ul style="list-style-type: none"> • Neighbourhood facility to be located within the Whitby Town Centre (with potential colocation with the Mundijong Public Library.)
8. Skate parks	Railway Park but not located within new town centre.	1 x Neighbourhood (1:5,000-10,000) 1 x District (1:10,000-25,000)	1 x Neighbourhood	Options: <ul style="list-style-type: none"> • Precinct A district Sport space • Town Centre open space • Lake area west of Soldiers Road
9. Motocross and Recreational Trail Bike Riding	Hendley Motocross Park	Nil	Nil	
10. Equine facilities	Webb Road Reserve	Nil	Nil	

8.3 Jarrahdale

Trigger year	Current 2016	Built-out Requirement	Built-out Gap	Implementation Options
Population	2,429	3,000	3,000	
1. Aquatic facilities	Nil	Nil	Nil	
2. Playing fields	1 x Neighbourhood	Nil	Nil	Enhance access and activation of Jarrahdale Oval
3. Netball courts	Nil	Nil	Nil	
4. Basketball courts	Nil	Nil	Nil	
5. Tennis courts	4 x courts <ul style="list-style-type: none"> • Munro Street 	Nil	Nil	Refurbish existing courts
6. BMX tracks	Nil	Nil	Nil	
7. Youth facilities	Nil	Nil	Nil	
8. Skate parks	1 x Skate Park	Nil	Nil	

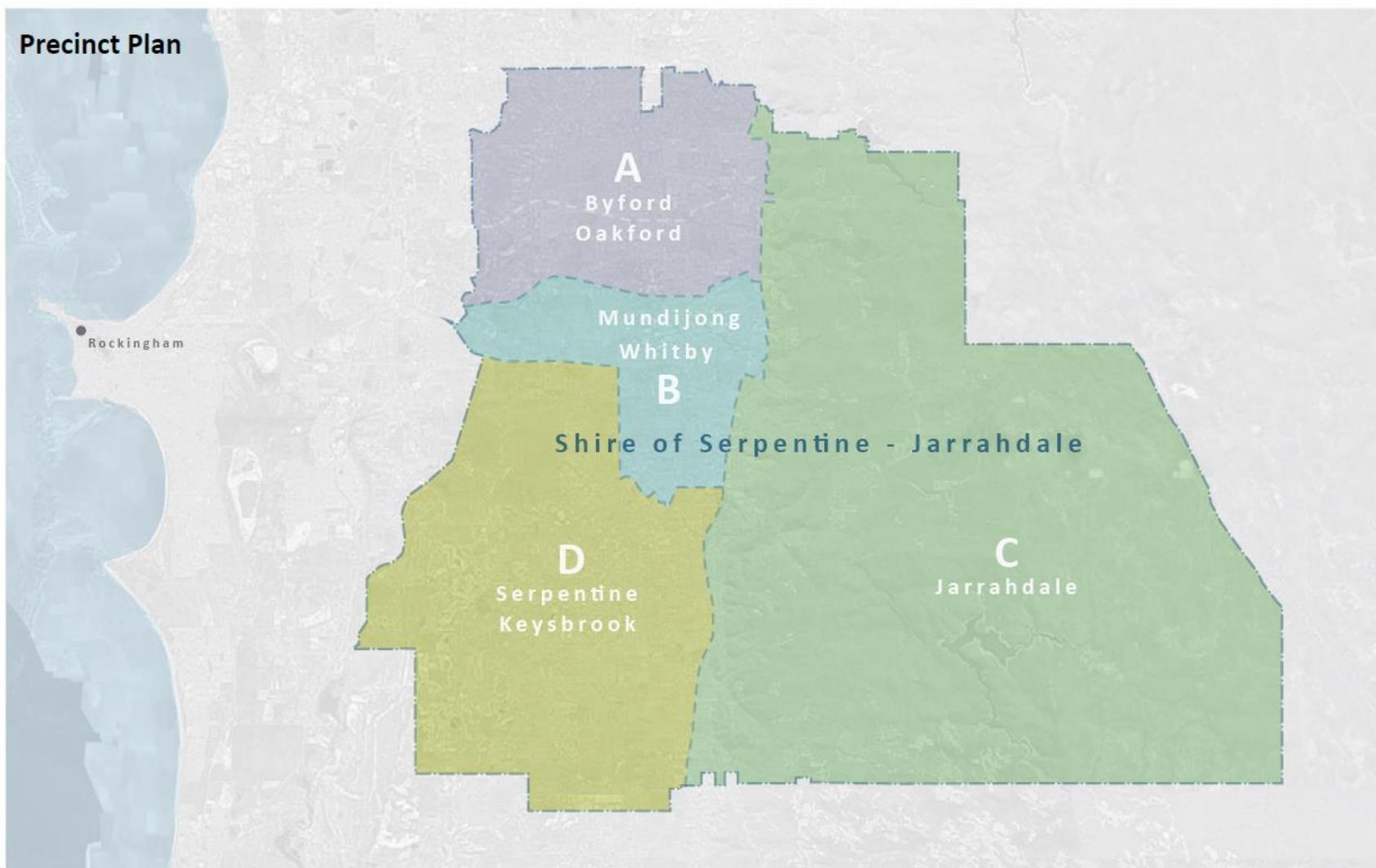
9. Motocross and Recreational Trail Bike Riding	Nil	Nil	Nil	
10. Equine facilities	Nil	Nil	Nil	

8.4 Serpentine/ Keysbrook

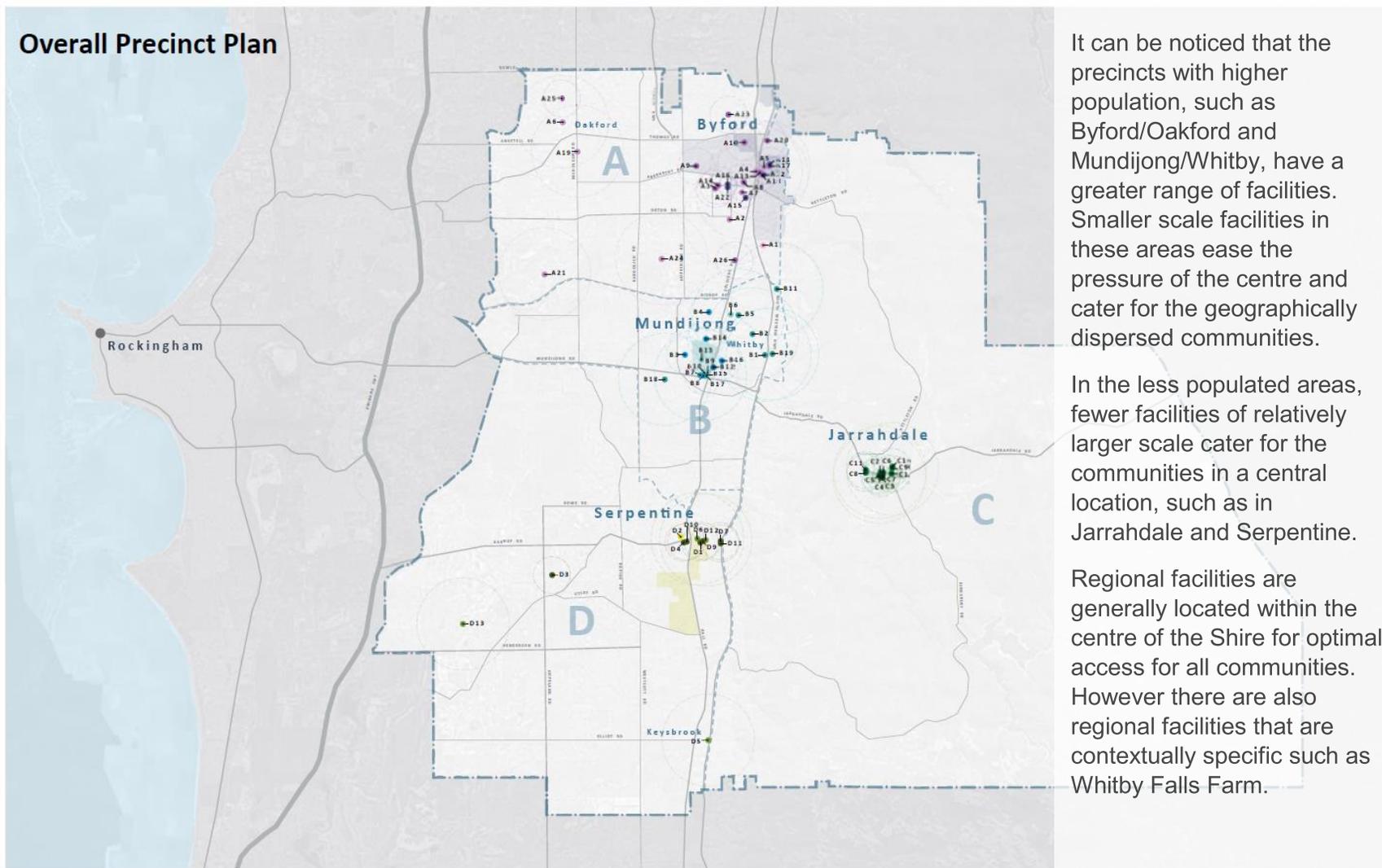
Trigger year	Current 2016	Built-out Requirement	Built-out Gap	Implementation Options
Population	2,367	4,000	4,000	
1. Aquatic facilities	Nil	Nil	Nil	
2. Playing fields	1 x Neighbourhood	1 x Neighbourhood	Nil	Retain as required
3. Netball courts	Nil	Nil	Nil	
4. Basketball courts	Nil	Nil	Nil	
5. Tennis courts	4 x courts <ul style="list-style-type: none"> Serpentine Oval 	Nil	Nil	Refurbish Existing Courts when demand is evident, potential for multi-marking 2 of the 4 to save building additional courts
6. BMX tracks	Informal dirt track <ul style="list-style-type: none"> Serpentine Recreation Precinct 	Nil	Nil	
7. Youth facilities	Nil	Nil	Nil	
8. Skate parks	1 x Skate Park	Nil	Nil	
9. Motocross and Recreational Trail Bike Riding	Nil	Nil	Nil	
10. Equine facilities	Serpentine Sports Reserve	Nil	Nil	

9.0 Catchment Mapping

The precincts below are the basis of the strategy. The precincts provide a clear differentiation in regards to demographics, existing facilities, the gap analysis and proposed projects.



The plan below depicts the distribution of existing and proposed facility options across the Shire. Structure plans may need to be reviewed to allow for implementation.



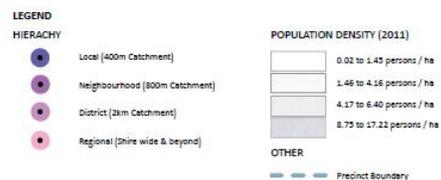
It can be noticed that the precincts with higher population, such as Byford/Oakford and Mundijong/Whitby, have a greater range of facilities. Smaller scale facilities in these areas ease the pressure of the centre and cater for the geographically dispersed communities.

In the less populated areas, fewer facilities of relatively larger scale cater for the communities in a central location, such as in Jarrahdale and Serpentine.

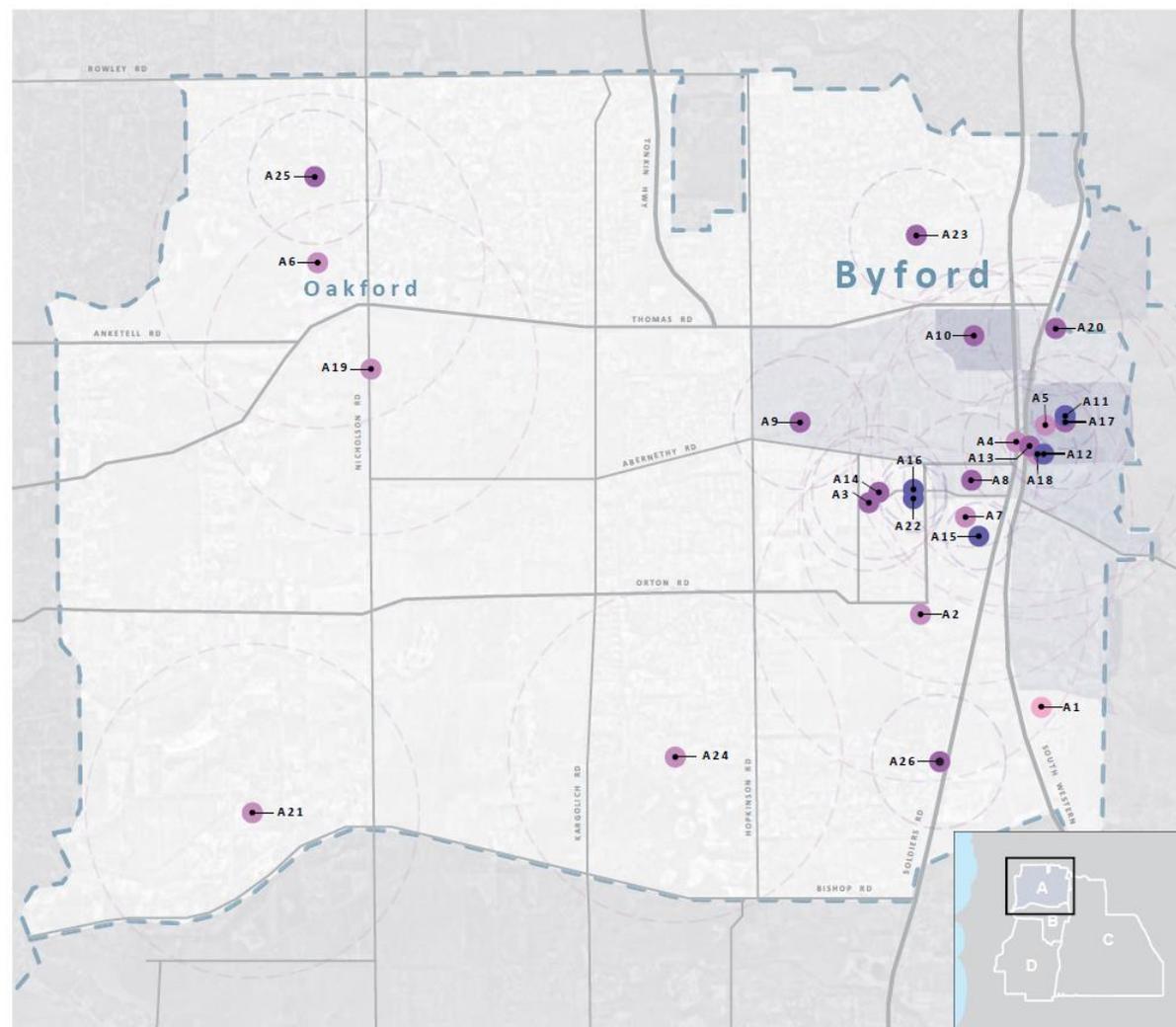
Regional facilities are generally located within the centre of the Shire for optimal access for all communities. However there are also regional facilities that are contextually specific such as Whitby Falls Farm.

The following map shows the distribution of existing and proposed facility options for the Byford/Oakford precinct.

Precinct A: Byford - Oakford 2050 Build Out Scenario



No.	Name	Status
A1	Proposed Kin Road Regional Sporting Reserve + District Open Space + District Netball (Option 2) + Regional Basketball/Indoor Recreation Centre (Option 2) + District Tennis (Option 2) + Regional BMX Track (Option 2) + District Skate Park + District Skate Park (Option 2) + Regional Aquatic Facility (Option 3)	Proposed
A2	Proposed Orton Road Sporting Reserve + District Sports Space + District BMX Track (Option 1) + District Skate Park (Option 2)	Proposed
A3	Proposed Glades Community Centre	Proposed
A4	Proposed Byford Branch Library	Proposed
A5	Proposed Byford Fire Station	Proposed
A6	Proposed Oakford Fire Station	Proposed
A7	Briggs Park Recreation Precinct + District Sports Space + Community Recreation Centre Indoor Court Expansion (Option 1) + Regional Aquatic Facility - Private Provision (Option 1) + Neighbourhood Skate Park + District Youth Facility	Improved
A8	Byford Secondary College	Improved
A9	Kailinna Sporting Reserve (West Byford Primary School)	Improved
A10	Bill Hicks Reserve	Improved
A11	Park Road Reserve	Improved
A12	Byford Hall	Improved
A13	Byford and Districts Country Club	Improved
A14	Anzac Memorial Park	Existing
A15	Brickwood Reserve Community Facility	Existing
A16	Byford Community Garden	Existing
A17	Byford Community Kindergarten and Child Health Clinic	Existing
A18	Byford Fire Station	Existing
A19	Oakford Fire Station	Existing
A20	Byford Scouts Hall / Old Rifle Range	Existing
A21	Peel Metropolitan Horse and Pony Club	Existing
A22	Percy's Park	Existing
A23	Darling Downs Equestrian Facility	Existing
A24	Oakford Riding for Disabled Association	Existing
A25	Oakford Community Hall	Existing
A26	Cardup Community Centre	Existing



The following map shows the distribution of existing and proposed facility options for the Mundijong/Whitby precinct.

Precinct B: Mundijong - Whitby 2050 Build Out

LEGEND

HIERARCHY

- Local (400m Catchment)
- Neighbourhood (800m Catchment)
- District (2km Catchment)
- Regional (Shire wide & beyond)

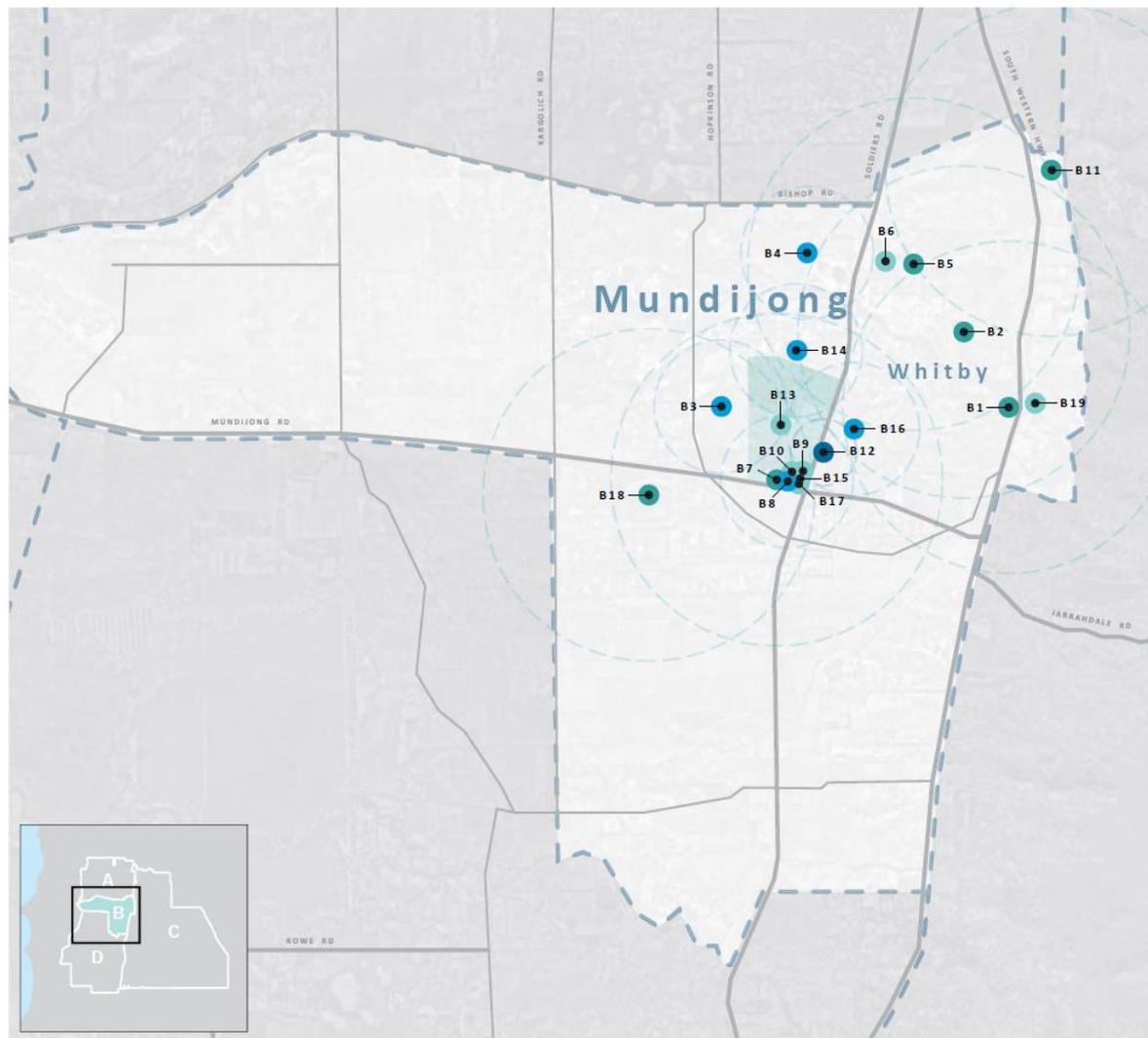
POPULATION DENSITY (2011)

- 0.02 to 1.45 persons / ha
- 1.46 to 4.16 persons / ha
- 4.17 to 6.40 persons / ha

OTHER

- Precinct Boundary

No.	Name	Status
B1	Proposed Kierman Street Sporting Reserve + District Sports Space + District Netball (Option 1) + District Tennis (Option 1) + Regional BMX (Option 1) + District Youth Facility (Option 1) + Regional Aquatic Facility - Private Provision (Option 2)	Proposed
B2	Proposed Whitby Sporting Reserve + District Sports Space + District BMX (Option 2) + Neighbourhood Skate Park (Option 1)	Proposed
B3	Proposed Precinct E Sport Space (Primary School Colocation) + Neighbourhood Sports Space	Proposed
B4	Proposed Precinct S Sport Space (Primary School Colocation) + Neighbourhood Sport Space + Local BMX (Option 2)	Proposed
B5	Proposed Whitby Indoor Recreation and Community Centre and Skate Park + District Indoor Recreation Centre + Community Centre + Neighbourhood Youth Facility + Neighbourhood Skate Park (Option 2)	Proposed
B6	Proposed Whitby Library + Regional Library (Option 1)	Proposed
B7	Proposed Mundijong Fire Station	Proposed
B8	Mundijong Sporting Precinct + Sports Space Expansion + Local BMX (Option 1)	Improved
B9	Mundijong Civic Precinct + Regional Administration Centre + Regional Community Centre + Regional Community Resource Centre	Improved
B10	Mundijong Library + Regional Library (Option 2) + District Youth Facility (Option 2)	Improved
B11	Hedley Motocross Park	Improved
B12	Linear Park (Railway Park)	Improved
B13	Shire Depot	Existing
B14	Mundijong Community Shed	Existing
B15	Shire Dog Pound	Existing
B16	Selesyard	Existing
B17	Shire Landcare	Existing
B18	Webb Road Reserve	Existing
B19	Whitby Falls Farm	Existing



The following map shows the distribution of existing and proposed facility options for the Jarrahdale precinct.

Precinct C: Jarrahdale 2050 Build Out

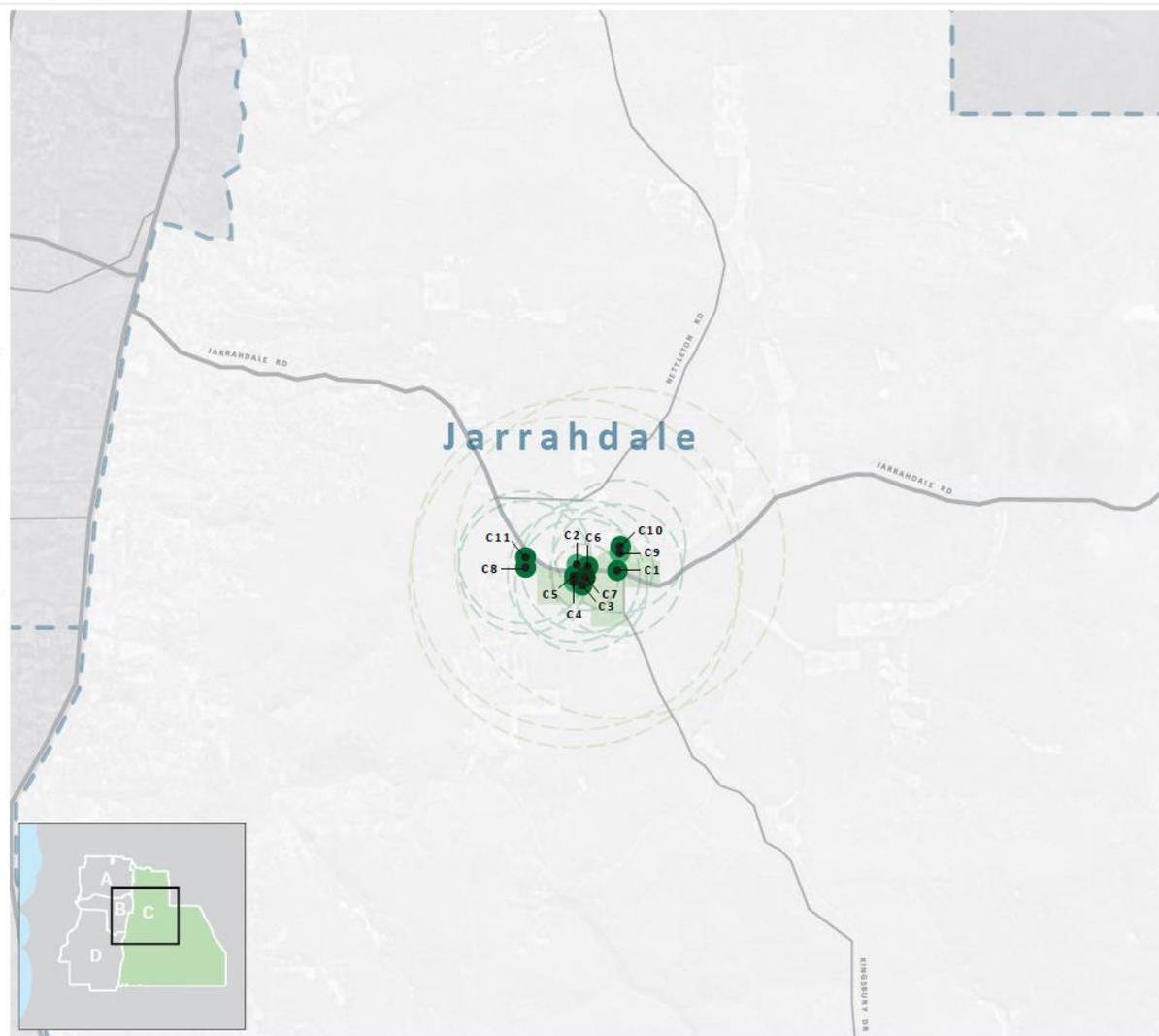
LEGEND

HIERARCHY

-  Local (400m Catchment)
-  Neighbourhood (800m Catchment)
-  District (2km Catchment)
-  Regional (Shire wide & beyond)

- POPULATION DENSITY (2011)
-  0.02 to 1.45 persons / ha
 -  4.17 to 6.40 persons / ha
 -  OTHER
 -  Precinct Boundary

No.	Name	Status
C1	Jarrahdale Oval	Improved
C2	Heritage Museum and Visitor Centre	Improved
C3	Munro Street Tennis Facility	Improved
C4	Jarrahdale Bruno Gianatti Hall	Existing
C5	Jarrahdale Skate Park	Existing
C6	Jarrahdale Environmental Centre	Existing
C7	Jarrahdale Fire Station	Existing
C8	Old Post Office Building	Existing
C9	RV Park	Existing
C10	Single Men's Quarters	Existing
C11	St Paul's Anglican Church	Existing



The following map shows the distribution of existing and proposed facility options for the Serpentine/Keysbrook precinct.

Precinct D: Serpentine - Keysbrook 2050 Build Out

LEGEND

HIERARCHY

-  Neighbourhood (800m Catchment)
-  District (2km Catchment)
-  Regional (Shire wide & beyond)

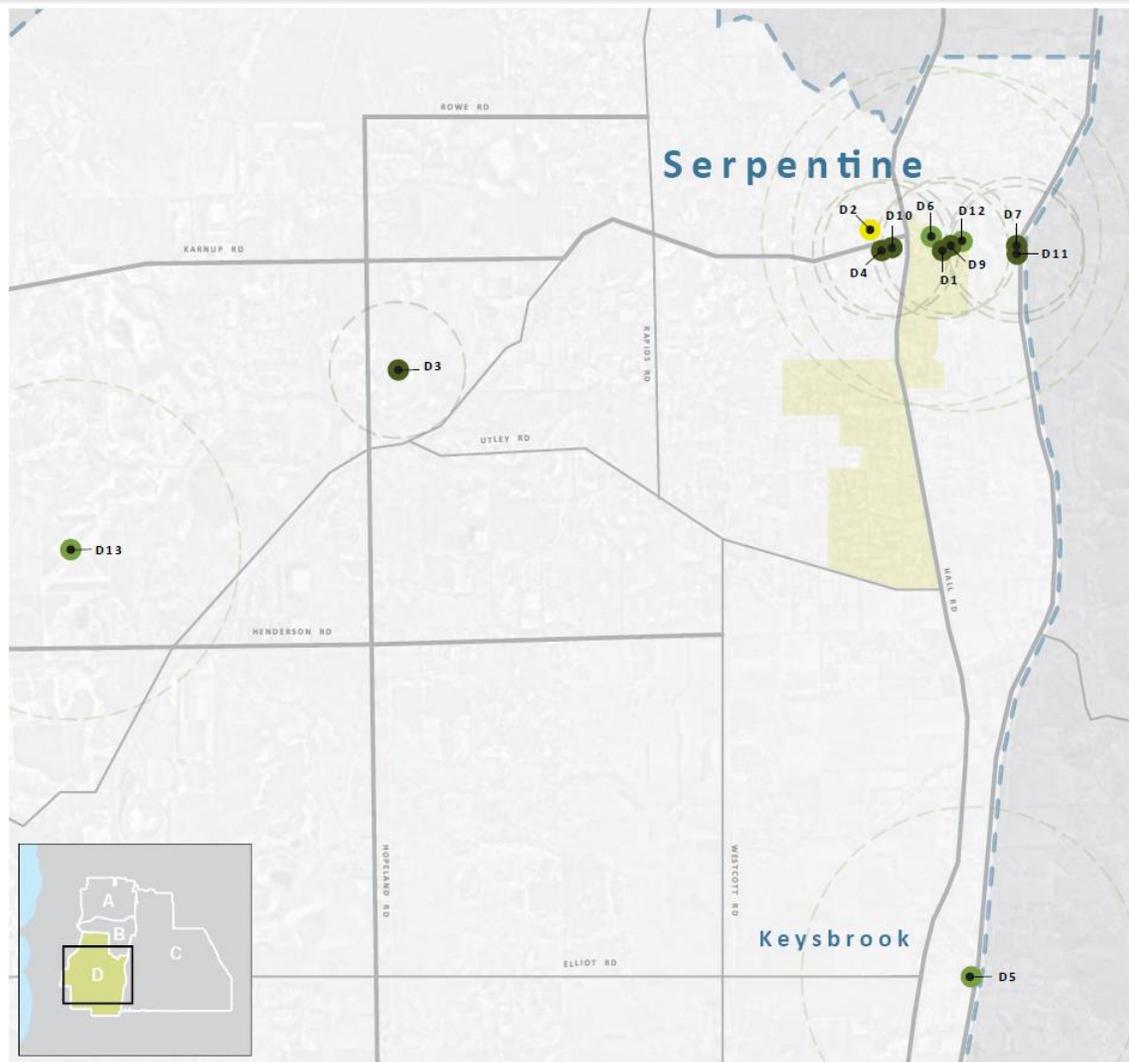
POPULATION DENSITY (2011)

-  0.02 to 1.45 persons / ha
-  1.46 to 4.16 persons / ha

OTHER

-  Precinct Boundary

No.	Name	Status
D1	Serpentine Recreation Precinct	Improved
D2	Serpentine Golf Course	Existing
D3	Hopeland Old School	Existing
D4	Ivan Elliot Pavilion	Existing
D5	Keysbrook Fire Station	Existing
D6	Serpentine Fire Station	Existing
D7	Serpentine Old School	Existing
D8	Serpentine Playgroup	Existing
D9	Serpentine Police and Youth Centre	Existing
D10	Serpentine Sports Reserve	Existing
D11	St Kevin's Catholic Church	Existing
D12	Tractor Museum	Existing
D13	Yangedi Airport	Existing



PART D: IMPLEMENTATION PLANS

The following suite of plans are suggested for a holistic approach to meeting community needs:

- Community Infrastructure Implementation Plan
- Positive Ageing Plan
- Youth and Family Plan
- Early Years Development Plan (in coordination with library programs)
- Disability Access and Inclusion Plan (annual requirement)
- Public Open Space & Land use management plan (including asset rationalisation)
- Facilities Management Plan (including asset rationalisation)
- Community Activation Plan (Multicultural, Cultural, Arts, Events, Volunteering)
- Transport Implementation Plan (active transport, travel smart initiatives, road-wise walking)
- Food Security Plan (including land use survey)
- Waste Management and Recycling Plan
- Sport and Recreation Plan
- Equine Plan
- Trails Master Plan (Walking, Cycling, Horse Trails, Mountain Biking)
- Community Safety Plan