



Boyanup Memorial Park Sport and Recreation Ground Masterplan Report



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Endorsement

Boyanup Memorial Park Sport and Recreation Ground Master Plan Report

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A handwritten signature in black ink, appearing to read 'PF Sheedy', written over a horizontal line.

PF Sheedy
Chief Executive Officer
Shire of Capel



Boyanup Memorial Park Sport and Recreation Ground Masterplan Report

Table of Contents

1.0 What is a Master Plan?	4
3.0 Background	7
4.0 Site Overview	8
5.0 Demographic profile	13
6.0 Consultation	19
7.0 Infrastructure	25
8.0 Masterplan Design	26
9.0 Staging Plan	28
10.0 Funding and Implementation	32
11. Monitoring and Review	32
12. Recommendations	32
Appendix 1: Masterplan Drawings	
Appendix 2: Civil Engineering Report	
Appendix 3: Cost Plan	



Boyanup Memorial Park Sport and Recreation Ground Masterplan Report

1.0 What is a Master Plan?

The purpose of this Master Plan is to provide a long term sustainable framework for the future development of the Boyanup Memorial Park ('the park') by providing for the active recreation spatial needs of the community of the Town of Boyanup over the next 10, 20 and possibly 30 years.

The plan is to be viewed as a strategic plan that determines the possible location, scale and type of development that could occur within the park within an indicative future timeframe and it is to be noted that within these timeframes more detailed planning and development costing will be required for each element of the plan.

The master planning process has involved reviewing the existing physical conditions and uses of the park, analysing site issues and developing an agreed strategic plan for the future use of the park area. Consultation has been undertaken with existing users of the park to assist in determining the design outcomes and the proposal will be advertised for wider community and government consultation prior to finalisation and adoption by Council.



Boyanup Memorial Park Sport and Recreation Ground Masterplan Report

2.0 Executive Summary

Background

The Shire of Capel's Sport and Recreation Strategic Plan (2010-2015) and *The Boyanup Public Open Space Strategy*, have both identified the need to prepare a masterplan for the development of the Boyanup Memorial Park site. As the town expands the sporting requirements and needs of the community will place added pressure on the site as the primary sport and recreation precinct within the town of Boyanup.



Site Overview

The 3 land parcels under Shire control that form the development area for this report are as follows:

- Lot 67 Thomas Street, 3.103 ha
- Lot 40 Thomas Street, 6.765 ha
- Lot 1 South West Highway, 8.099 ha

The 3 lots comprise the townsite's only District POS and as such service the majority of the communities active recreation requirements.

Demographic profile

Boyanup has a 2011 population of approximately 900 residents. The future growth of Boyanup will be significant according to the endorsed Boyanup Townsite Strategy with the population increasing by 500% to approximately 4,500 in 2031.

The ultimate population of Boyanup pursuant to current strategic planning outcomes could be approximately 7,000.

Consultation

Consultation was undertaken with stakeholders and user groups of the parks, the Department of Sport and Recreation and Donald Veal Consultants.

The Masterplan

The masterplan proposes a staged implementation of the future facilities over period of 2012-2032 as directed by the Shire.

Stage 1 consists of a new sports pavillion building to be located to the south of the existing oval, adjacent the northern boundary of lot 1.

The masterplan proposes:

- Provision of a new sports facility building
- Expansion and provision of new playing fields and courts
- Expansion and provision of newparking facilities



Boyanup Memorial Park Sport and Recreation Ground Masterplan Report

- Inclusion of a swale and settling basins to service the new site drainage requirements
- Upgrade of existing lighting infrastructure
- Power, sewer and water upgrades to service new facilities
- Provision of a new path network connecting future development to the park

Recommendations

The key recommendations are focused on delivering the best quality and efficiently planned facilities for the future of the Boyanup community.

Key recommendations include:

The detailed design of the sports facility building should prioritise the provision of shared facilities, ensuring a space that can be effectively managed and occupied by the future users of the facility.

Detailed engineering investigations should be undertaken early in the design stage to ensure the provision of an appropriately designed and considered solution to site water management and servicing.

The access to the south of the site (southern access road) should be considered during the early planning phases of the proposed development to the south of lot 1 with issues of traffic management and access off the highway a high priority.



Boyanup Memorial Park Sport and Recreation Ground Masterplan Report

3.0 Background

The Shire of Capel's Sport and Recreation Strategic Plan (2010-2015) and The Boyanup Public Open Space Strategy, have both identified the need to prepare a masterplan for the development of the Boyanup Memorial Park site. As the town expands the sporting requirements and needs of the community will place added pressure on the site as the primary sport and recreation precinct within the town of Boyanup.

In 2006 the Boyanup Memorial Park Development Feasibility study was undertaken, since this study was produced the potential site boundaries have been expanded. The purpose of this report is to provide direction for the expansion of the sporting and recreation facilities within this newly expanded site based on future community needs and taking into consideration its context within the expected growth of The Town.

3.1 Document Review and Briefing Process

The background information provided by the Shire for review included:

- Shire of Capel Boyanup Public Open Space Strategy 2011-2021
- Boyanup Memorial Park Development Feasibility Study April 2006
- Greater Bunbury Sports Facility Planning Report
- Shire of Capel Sport and Recreation Strategic Plan 2010 -2015
- Draft Boyanup Path Strategy

The information within documents along with a series of meetings with representatives from The Shire and consultation sessions with the key site stakeholders forms the basis for this report (Refer Section 6).

3.2 Previous Reports and Recommendations

As directed by the brief we have taken into consideration the recommendations made by previous reports (outlined in Document Review). A number of them highlighted as priorities the need to prepare a masterplan for the future of the Boyanup site, with some providing specific recommendations regarding both facility upgrade and the integration of the site outcomes into broader recreational goals. A number of these that have provided significant guidance to our proposed plan are as follows:

- New sports pavilion
- The need for a pedestrian/ cycle link over the Preston River near the primary school
- Improve community access to the Preston River foreshore
- Improvement to grass playing surfaces



Boyanup Memorial Park Sport and Recreation Ground Masterplan Report

4.0 Site Overview

The 3 land parcels under Shire control that form the development area for this report are as follows:

- Lot 67 Thomas Street, 3.103 ha
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The 3 lots comprise the Townsite's only District POS and as such service the majority of the communities active recreation requirements.



Site Location Plan



Boyanup Memorial Park Sport and Recreation Ground Masterplan Report



Site Aerial



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4.1 Existing Site Features



1. Hardcourts/ Changerooms
2. Boyanup Bowling Club
3. J&M Kitchen Community Centre
4. Cardinals Junior Football Club Hall/ Changerooms
5. Covered Skate Park
6. Primary School
7. Shared Playing Field
8. Football Oval
9. Playground
10. Hockey Practice Pitch
11. Lot 1
12. War Memorial
13. Preston River



Hard Courts

Hardcourts/ Changerooms

Currently in use by both the Boyanup Basketball and Netball clubs as well as casual tennis court use. There is a bitumen surface multi-court arrangement with markings for 2 Basketball courts, 2 tennis courts and 2 netball courts. Only 1 sport can be played at a time in its current configuration. A small building to the west of the courts houses changeroom/ storage and kiosk facilities.



Bowling Club

Boyanup Bowling club

Bowling club currently operating with 1 synthetic green. Building housing clubrooms with toilets, servery and bar. It is the only licenced premises on the site. No universal access available for the club building. The venue is at capacity with current levels of use.



Boyanup Memorial Park Sport and Recreation Ground Masterplan Report



Football Club building

J&M Kitchen Community Centre

Facilities include: public library, toy library, playgroup, infant health clinic and meeting facilities. The block also contains public toilets that services a lot of activity on the site including the Farmer's Market.

Football Club/ Changerooms/ Oval

Currently used by the Cardinals Junior Football Club. The building contains change facilities, storage, kiosk and hall. The change rooms are in a state of disrepair, and no covered spectator viewing is allowed for. The hall is in fair but serviceable condition. There is a main switch board that appears to service many of the site's electrical services. This will need to be investigated and managed depending on the buildings future use.

The oval is subject to drainage issues, with frequent ponding on the northern side of the oval. The lighting to the field is not to competition standard and does not allow for night time play.



Covered Skate Bowl

Covered Skate Park

Used for casual skate use, the covered area contains a lit, concrete skate bowl.

Primary School/ Shared Playing Field

The Primary School currently has access to the council owned land to the south of the site for their field sports activities. The playing field is also currently used by Junior football for warm-ups and training when the main oval is in use. There is a concrete surface cricket pitch used by the school. The surface of the playing field is plagued by drainage issues, which can limit the suitability of the field for football practice.



Primary School Playing Field

War Memorial/ Gates

To the north of the hockey field are a row of existing peppermint trees that are terminated by a set of pedestrian gates to the west on the Highway and a memorial to the east. This whole arrangement is of historical significance, in particular the memorial which commemorates Boyanup's association with World War II. The row of trees are used for shade during farmer's market operation and are an asset to the landscape amenity of the park.

Playground

Universally accesible playground including 'fort', slides, various individual play structures and a separate swing set.

Hockey Practice Pitch

Practice pitch running East-West adjacent the fence to Lot 1 and the Highway. The field is undersized, underlit and is used only for training purposes.



War Memorial

Lot 1

Vacant land currently used for grazing purposes, its southern boundary adjoining an area zoned for for development. Predominately flat site, cleared of vegetation.



Boyanup Memorial Park Sport and Recreation Ground Masterplan Report

Preston River Foreshore

The largest waterway in the sub-catchment. The bank outside the boundary slopes steeply down to the riverbed. Currently south of the “Preston River Ramble”, the Shire’s Public Open Space Strategy recommends the continuation of the ramble into the memorial park precinct. Presently access to the river is unstructured with a number of steeply graded paths and informal steps.

Vegetation

The site is largely cleared. Notable stands of vegetation include a row of mature trees at the boundary of lots 1 and 46, the avenue of peppermint trees adjacent the memorial and the dense vegetation along the edge of the foreshore.

Refer Engineering report for detailed topographic and preliminary geological information.



Boyanup Memorial Park Sport and Recreation Ground Masterplan Report

5.0 Demographic profile

All figures, growth projections and analysis have been provided by the Shire of Capel.

5.1 Residential Population

According to the ABS the rate of population growth in the Shire of Capel between 2009 and 2010 was 5.4% which was the highest in WA. The Shire's June 2010 estimated resident population (ERP) according to the ABS was 13,370.

The ERP of Boyanup in 2011 is estimated by the Shire to be approximately 900, with an average annual growth rate of 3.2% between 2006 and 2011.

Table 1
Estimated Resident Population 2006-2011

	2006	2007	2008	2009	2010	2011
Boyanup	770	800	825	850	870	900
Annual growth rate	-	3.9%	3.1%	3%	2.4%	3.4%

Source: ABS and Shire of Capel

Notes:

1. Boyanup includes collection district 5050503 and portions of collection districts 5050501, 5050502 and 5050504.
2. The Boyanup ERP is determined from Shire building final inspection data and occupancy rate of all dwellings in Boyanup in 2006 (2.56). The occupancy rate is calculated from Census population figures adjusted for subsequent ERP data and Boyanup dwelling characteristics data.

In 2006, 50.1% of residents in Boyanup were male and 49.9% female compared to the figures for Australia of 49.4% male and 50.6% female.

According to the Census 1.8% of residents in Boyanup were indigenous persons, compared with 2.3% in Australia.

5.2 Age Profile

The population of Boyanup is older than Australia's population with a median age of 42 compared to 37 for Australia.

Table 2 indicates that the proportion of pre-school and school age children in Boyanup is much lower than in Australia. Boyanup exhibits a higher proportion of persons aged over 55 compared to Australia.



Boyanup Memorial Park Sport and Recreation Ground Masterplan Report

Table 2
Age Distribution 2006

	Median Age	Age groups					
		0-4	5-14	15-24	25-54	55-64	65+
Boyanup	42	4.4%	14.3%	13.5%	41.3%	15.1%	11.4%
Australia	37	6.3%	13.5%	13.6%	42.2%	11%	13.3%

Source: ABS Census data

Note: Boyanup data is based on the Boyanup 'urban centre/locality' 'Quickstats' data published by the ABS.

While an ageing population is occurring in Australia generally, the future demographic of Boyanup could include an increasing proportion of younger families which may counteract to some degree the current trend. This outcome assumes that the town's new residential areas will attract a similar demographic to other emerging growth areas e.g. Dalzellup.

Table 3 indicates the likely age profile in 2021 assuming a slightly lower proportion of people over 55, and an increase in the proportion of children aged 17 and under in view of likely attraction of new development in Boyanup to young families.

Table 3
Projected Age Profile 2021

Boyanup	Age Group			
	0-11	12-17	18-54	55+
2006 ERP 770	106 (13.8%)	96 (12.5%)	373 (48.4%)	195 (25.3%)
2021 ERP 2,220	333 (15%)	288 (13%)	1,066 (48%)	533 (24%)

Source: Shire of Capel and ABS

5.3 Education, Labour Force and Income

Table 4 indicates that Boyanup comprises lower proportions of people with higher educational qualifications compared to Australia. However, Boyanup has a much higher proportion of certificate qualified people compared to Australia. This reflects the higher proportion of technicians and tradespeople resident in the area (as indicated in Table 7).



Boyanup Memorial Park Sport and Recreation Ground Masterplan Report

Table 4
Level of Education, 2006 (as a percentage of persons aged 15 & over)

	Boyanup	Australia
Certificate	20.8%	16.7%
Diploma	6.4%	7.1%
Bachelor	5.0%	11.6%
Graduate Diploma	0.6%	1.4%
Post-graduate degree	0%	2.6%

Source: ABS

According to Table 5 Boyanup has a smaller labour force compared to Australia, less of the labour force employed full time and a lower unemployment rate.

Table 5
Labour Force, 2006 (persons aged 15 years and over)

	Boyanup	Australia
Labour force (as a percentage of persons aged over 15 years)	51.2%	60.4%
Employed full-time (as a % of labour force)	57.1%	60.7%
Employed part-time (as a % of labour force)	25.7%	27.9%
Unemployed	4.1%	5.2%

Source: ABS

According to the 2006 Census, Boyanup residents had generally lower individual and household incomes than Australian residents as indicated in Table 6. The median monthly housing loan repayment was significantly less in Boyanup in comparison to Australia.



Boyanup Memorial Park Sport and Recreation Ground Masterplan Report

Table 6
Income, 2006 (persons aged 15 years and over)

	Boyanup	Australia
Median individual income/week	\$439	\$466
Median household income/week	\$900	\$1,027
Median family income/week	\$1,073	\$1,171
Median monthly housing loan repayment	\$953	\$1,300

Source: ABS

Table 7 indicates that Boyanup has a very high percentage of technicians, tradespeople, machinery operators and labourers compared to Australia, possibly reflecting the mining, dairy and other industries in the Shire. Boyanup also had lower proportions of administration workers, managers and professionals compared to Australia.

Table 7
Occupation, 2006 (employed persons aged 15 years and over)

	Boyanup	Australia
Technicians/trades workers	18.9%	14.4%
Labourers	17.5%	10.5%
Machinery operators	13.6%	6.6%
Professionals	10.3%	19.8%
Admin. workers	12.3%	15%
Managers	8.3%	13.2%
Sales workers	9.6%	9.8%
Community/personal service workers	7%	8.8%

Source: ABS

5.4 Household Structure

Boyanup has much higher proportions of family households compared to Australia which reflects the popularity of the area to families. Table 8 indicates the characteristics of Boyanup households and families in relation to Australia. The higher proportion of couple families without children in Boyanup reflects the older age profile however this is likely to change as more families are attracted to affordable housing in new residential developments over the next 20 years.



Boyanup Memorial Park Sport and Recreation Ground Masterplan Report

Table 8
Family and Household Characteristics, 2006

Households	Boyanup	Australia
Family household	77.2%	67.4%
Lone person household	20.2%	22.9%
Group household	0%	3.7%
Families		
Couple families with children	43.9%	45.3%
Couple families without children	45.1%	37.2%
One parent families	11%	15.8%

Source: ABS

5.5 Country of Birth

In the 2006 Census 92.8% of persons usually resident in Boyanup were Australian citizens and 15.1% were born overseas. The equivalent figures for Australia were 86.1% and 22.2%.

Boyanup has a high degree of uniformity with over 80% of Boyanup residents born in Australia compared to 71% of persons in Australia.

Table 9
Country of Birth 2006

Country of Birth	Persons in Boyanup	Persons in Australia
Australia	80.3%	70.9%
England	9.6%	4.3%
New Zealand	2.1%	2.0%
Scotland	1.3%	0.7%
South Africa	0.8%	0.5%

Source: ABS

5.6 Population Projections

Dwelling growth for Boyanup can be used to estimate a reasonably accurate population for 2011 by relating the number of dwellings to the estimated occupancy rate of all dwellings (346 x 2.6).

The projections for 2016 to 2031 are based on assumptions relating to lot production and dwelling construction pursuant to the Boyanup Townsite Strategy. The town's dwelling occupancy rate is anticipated to remain relatively stable or increase slightly



Boyanup Memorial Park Sport and Recreation Ground Masterplan Report

due to an increase in family households before reducing as the population ages.

Table 10

Population Projections 2006-2031

	Census Year					
	2006	2011	2016	2021	2026	2031
Boyanup	770	900	1,070	2,220	3,150	4,525

Source: Shire of Capel

5.7 Observations

1. Boyanup has a 2011 population of approximately 900 residents.
2. The future growth of Boyanup will be significant according to the endorsed Boyanup Townsite Strategy with the population increasing by 500% to approximately 4,500 in 2031.
3. The ultimate population of Boyanup pursuant to current strategic planning outcomes could be approximately 7,000.
4. While Boyanup currently has a relatively high median age, the future demographic of Boyanup could include an increasing proportion of younger families which may counteract to some degree any ageing trend that is currently evident.
5. In 2021 Boyanup could have approximately 620 children aged under 18 and 533 persons aged 55 or over.
6. Demographics indicated in 2006 for dwelling occupancy, family structure, education, income, labour force and employment etc are likely to change significantly as the population grows and approximately 3,500 new residents are attracted to the town by 2031.

Additional to the above observations based on the study of the available data it is worth noting that there is land within the Boyanup town site zoned for use as a retirement village. The site has the potential to yield a minimum of 125 dwellings for use by those in the 55 and over age-group.

It is the Shire's desire to encourage the population of this new development to utilise the shire facilities rather than isolating their recreation needs within the development, fostering community inclusion. This will likely increase the participation in age appropriate recreation within the Boyanup Memorial Park site, such as the bowling club.

5.8 Level of Service and Future Needs

Participation rates in junior sports are difficult to determine. As the site facilities are largely directed toward junior sports the data available from ausport, as it applies to 15 and over, largely cannot be applied in determining future requirements. It is evident that



Boyanup Memorial Park Sport and Recreation Ground Masterplan Report

from the broader demographic picture that there will be a need for recreation facility growth. Future recreation needs/requirements have therefore been assessed through the application of the Shire's recreation level of service requirements, consultation with the local clubs and regional recommendation made in the Greater Bunbury Sports Facility Planning Report.

Shire of Capel - Public Open Space Level of Service

Local Park	Community/District Park	Sports Ground
<ul style="list-style-type: none"> ▪ 1.25ha/1,000 persons ▪ seating ▪ play equipment (1.5 playground equipment sets with shade structure & safe fall area/1,000 persons) ▪ shade trees or structures ▪ litter bins ▪ appropriate safety fencing ▪ pathway ▪ landscaping 	<ul style="list-style-type: none"> ▪ 1.75ha/1,000 persons ▪ seating ▪ 1.5 playground equipment sets with shade structure & safe fall area/1,000 persons ▪ shade trees or structures ▪ litter bins ▪ appropriate safety fencing ▪ sealed car parking ▪ toilets and amenities ▪ BBQ facilities ▪ pathways ▪ landscaping 	<ul style="list-style-type: none"> ▪ 1 oval/3,500 persons ▪ change rooms ▪ toilets and amenities ▪ seating ▪ litter bins ▪ club house ▪ adequate lighting ▪ sealed car parking ▪ appropriate fencing ▪ pathways and dual use paths

The total residential population based on the town's local structure plan lot yield will not be in excess of 7000. The Shire's level of service recommends the provision of 1 oval per 3,500 persons, including clubhouse, change facilities and amenities. The population is expected to surpass the 3,500 persons well within the next 20 years and thus another oval should be allowed for on the site. The site is positioned as one of potentially two sports ground within the town and it should be able to adequately service the towns growth expectations to its projected ultimate size with the provision of another oval, and in the long term an additional changeroom/ amenities block.

The significant increase in residents under the age of 18 will put increased pressure within a shorter timeframe to 2021. Additional sports fields should be planned for closer to this date assuming similar levels of participation.

6.0 Consultation

Consultation was undertaken with representatives from the user groups of the site. The following groups were met with:

- Boyanup School Council
- Boyanup Bowling Club
- Boyanup Farmers Market
- Cardinals Junior Football
- Boyanup Basketball
- Boyanup Netball
- Boyanup Hockey

Additional to meetings with the local user groups the Shire met independently with



Boyanup Memorial Park Sport and Recreation Ground Masterplan Report

representative from various Departments to receive feedback on previous versions of this report, their feedback is also included within the following section.

The purpose of the consultation was to identify the immediate shortcomings of the facilities the groups occupy and to gain an understanding of potential growth and future needs of all groups and users of the site's facilities.

6.1 User Groups

Information sought through formal questions of the sporting clubs and user groups included:

- Description of current facilities including where your facilities are lacking (building size, playing surface etc)
- Description of typical event operation and casual use of the club facilities
- Storage needs
- Current club membership numbers
- Information/ figures/ observations on the growth of the club.
- Foreseeable implications of growth in terms of recreation needs
- Spectator/ visitor volumes
- Parking situation at present
- Parking/ use conflicts with other site activities
- Safety/ Crime issues
- Synergies/ conflicts with adjacent sports uses

A summary of the major items identified during each group's consultation is as follows.

Boyanup School Council

The school currently uses the land to the south of the campus for all of their field sports requirements. The school doesn't currently use the main oval and will not require access to it. One limitation is the location of the cricket pitch, leaving the field undersized with not enough space to establish a boundary. The central hardcourt for the school is undersized and not suitable for competition play, there is opportunity for the future location of hardcourt facilities on their site, however the school doesn't have any immediate desire to use a full size court. Overall the consensus was that their sporting requirements are being met and do not foresee expansion in the short term.

Boyanup Bowling Club

The Boyanup Bowling club has a total of 60 members. The facilities at present are able to cater for the number of playing members through scheduling. The club expressed that the facilities at present particularly the function room are at capacity when catering for special events. With population increase room needs to be allowed for growth of the Bowling club, with an expansion to the club facilities and potentially another playing surface.



Boyanup Memorial Park Sport and Recreation Ground Masterplan Report



Farmer's Market day

Boyanup Farmers Market

The farmer's market currently operates out of the area south of the hardcourts and Boyanup Bowling Club. The farmers market have sought and acquired funding for an open sided shelter (20x10m) and are looking to place it within the space. Representatives from the market expressed that the location is ideally suited for them, with good exposure to the South West Highway, adjacency to the existing playground and access and parking opportunity.

The market is expecting growth, both in terms of operating days and visitor numbers, with long term goals to have a large permanent market. The site at present will satisfy their immediate needs but other locations outside of the Memorial Park precinct will need to be considered in the long term.

Cardinals Junior Football

The sports hall in use by the club is currently insufficient for their needs, with inadequate storage space, small/ rundown change facilities and kiosk in poor condition. The facility also has no capacity for sheltered viewing, with spectators often crowding within the hall and watching through the open doors.

Operations have a large impact on parking on the site, within the region of 70 players and 100 visitors at a time on a Saturday. Another parking conflict is on tuesdays with 3 teams training whilst the bowls club is operating. When planning for expansion car parking will need to be expanded.

The lighting to the main oval is insufficient for night time match use. The club has expressed that rather than the use of a second oval, which would put additional pressure on both parking and changeroom facilities, that the upgrade of lighting would allow them to schedule games in the evening, effectively extending saturday game operations.

Additionally the club has complained of drainage issues to the northern boundary of the oval and of the shared field to the north.

Boyanup Basketball

Both the basketball and netball clubs operate out of a small pavilion with covered area to the west of the multi-use hardcourts. The changerooms at present are being partially used as storage, highlighting the need for additional storage facilities. The building itself is old and in need of maintenance. The basketball courts require remarking to reflect recent rule changes in the short term but the surface itself is in reasonable condition. The courts are lit to a standard that allows night time games.

Parking is now mostly on the adjoining streets outside of the memorial park, with access through a gate to the northern fence of the hardcourts.



Boyanup Memorial Park Sport and Recreation Ground Masterplan Report

Boyanup Netball

The netball shares the same pavilion as basketball and suffers the same lack in storage issues. The courts are used only for training, with games being played in Bunbury on Saturdays, so there are no requirements for spectators or large numbers of parking, as training operates typically as 'drop and pickup'. The addition of a covered area provided by the farmers market was seen as a potential benefit during rainy periods, with training sessions able to be run undercover. Membership numbers have been steady over the past 10 years, with no discernible growth in participation, more recently an increase in young players has been noticed, suggesting a possible future growth trend.

Boyanup Hockey

The Hockey club currently uses the grass field adjacent the northern boundary of lot 1 for training only. With juniors using the field midweek for training with seniors only training every fortnight in Boyanup and in Bunbury for another 2 sessions a week. The grass surface is in poor condition, with mixtures of species of turf. Games are played on a synthetic surface and as such are never played in Boyanup. The lighting is inadequate for small ball sports and is in need of upgrade. Currently there is an electrified fence to the boundary which needs immediate attention and has already caused injury. There is no undercover area or change facilities for use by the club at present, nor a facility to call "home". There was a general feeling the club's needs are not being met by current amenities.

General

There was general consensus amongst the different user groups that there is support for a shared facility.

6.2 Department of Sport and Recreation

The following recommendations and comments were made to the Shire from the Department of Sport and Recreation upon viewing of the Draft Masterplan of May 2011.

- New sports facility of a similar scale to the Capel sports pavilion supported from a grant funding point of view. More complex facilities not supported.
- Support of appropriate level sports lighting. Lit fields allow for the operation of mid-week and evening competition which distribute activity rather than focusing on Saturday competition, allowing more effective use of limited facilities.
- Possible that a synthetic soccer field would be an appropriate sustainable option to satisfy future soccer needs.
- Because of the existing synthetic hockey facilities in the region it is unlikely DSR would consider funding for a synthetic hockey field. Consideration may be given to a synthetic multi-use hockey/ soccer field.
- Large, rectangular green spaces are supported as they provide greater flexibility with sporting field layout and maintenance options.



Boyanup Memorial Park Sport and Recreation Ground Masterplan Report

6.3 Traffic Consultants

The Shire (at the time of writing) is undertaking a traffic management study for the Town site. The May '11 draft was presented to the traffic consultants (Donald Veal Consultants) engaged by the Shire for the study to assess the suitability of the configuration with respect to access and traffic management.

With future expansion in mind, the current single vehicular entry point off Thomas Street was accepted as appropriate in the long term.

The future road to the south of Lot 1 (refer appendix) will require further traffic studies to assess its suitability.

6.4 Main Roads WA (MRWA)

MRWA was provided an opportunity to comment on the Draft Master Plan dated 08/12/2011 REV D and has advised that it has no objections however has noted that stage 4 indicates that a new road/access connection to South Western Highway is proposed and it will be a requirement that this intersection be designed and constructed to the specification and satisfaction of Main Roads WA.

6.5 Department of Education (DOE)

The DOE has raised no objections to the proposals however has advised that the Boyanup Primary School is on a restricted size lot and the Department would like the opportunity to engage in shared use of facilities should the need arise in the future.

6.6 Department of Indigenous affairs (DIA)

The DIA has advised that there is an aboriginal heritage place on the DIA data base within the eastern portions of the three lots as described in the draft master plan. The aboriginal site is registered site DIA 19795 (Preston River).

The DIA advises that it is possible that there is unidentified Aboriginal heritage within the land the subject to the area of the proposed sport and recreation grounds.

Should cultural material or a new site be found whilst undertaking development there is an obligation under Section 15 of the Aboriginal Heritage Act to report the information to the Registrar of Aboriginal sites.

6.7 Department of Environment and Conservation (DEC)

DEC has advised that lots 67, 40 and 1 are adjacent to a Conservation Category Wetland (CCW) mapped on the DEC's Geomorphic Wetlands Swan Coastal Plain data set.

The Environmental Protection Authority's Draft Guidance Statement No.33 Environmental



Boyanup Memorial Park Sport and Recreation Ground Masterplan Report

Guidance for Planning and Development (June 2005) requires a minimum buffer of 50 metres to be provided between wetlands and proposed developments. The buffer is to provide protection of the wetland from impacts on groundwater quality, water levels, and increased sedimentation, nutrient loads or pollution.

After undertaking consultation with both DEC there has been a need to initiate some refinements to the advertised Draft Master Plan dated 08/12/2011 REV D by:

- Reducing the number of pathways proposed within the buffer area and CCW to a single path;
- Relocating car parking areas adjacent to the football ground and in the south western corner of lot 1 to be located outside the buffer zone;
- Proposing a fence adjacent to the pathway to regulate pedestrian movement along the foreshore and to aid in managing rehabilitation of the foreshore; and
- Ensuring that any expansion of the swale drains and settling ponds occurs within cleared land areas reducing the clearing of vegetation.

In addition to the above modifications the Shire has committed:

- To design drainage systems so as to reduce the transport of nutrients to the CCW;
- To undertake appropriate planting out of swales/ponds to absorb nutrients;
- To ensure the use of fertilisers with reduced phosphates;
- To monitor and maintain drainage infrastructure to ensure no pollution of the surrounding water systems;
- To retain remnant vegetation where possible;
- To rehabilitate cleared areas with native vegetation within the buffer area and any other non sports field areas around the established infrastructure; and
- To retain trees along the northern boundary of lot 1 for shade purposes where possible.

The shire has also acknowledged the advice in respect acid sulphate soils potential, which approvals would be required for dewatering, clearing and fauna impacts.

The DEC has also advised that the Department of Water (DOW) is the lead agency in relation to assessing and providing comment on land use planning proposals that relate to waterways and has recommended that the Master Plan be referred to the DOW for comment.

6.8 Department of Water (DOW)

Following advice from the DEC the Master Plan with intended modifications as proposed to the DEC was referred to the DOW for comment.

The DOW undertook more detailed analysis of the relationship of existing infrastructure and proposals to the CCW and associated buffer confirming the existing football oval and walkway is outside the CCW boundary but within the buffer.

The DOW also recognised that the foreshore areas would remain under the control and management of the Shire of Capel and this it favoured as this insured an increased level



Boyanup Memorial Park Sport and Recreation Ground Masterplan Report

of management of the infrastructure and land uses to reduce impacts on the CCW. The DOW supported the proposed modifications to the Master Plan and in particular the relocation of car parking areas outside the CCW and its buffer. It also supported a hard edge such as a pathway, between development and foreshore protection areas with selected direct access where safe for the public and where impacts will be minimal.

The DOW did however request that Council investigate the real need for fencing particularly in relation to the impact and need for flood flows. It acknowledges some need for temporary fencing in rehabilitation areas and suggests that the location and type of revegetation would also contribute to the control of public access.

The Shire has committed to the following at the detailed design stages of this project:

- Giving closer consideration to the need for fencing;
- To acknowledge that the DOW manages the foreshore adjacent to the school site to the north of lot 67 and that it is prepared to work with the shire to integrate public access within this area; and
- To work with the DOW in detailing the stormwater management infrastructure particularly within the CCW and the buffer areas.

In addition to the above the Shire has committed to pursue the inclusion of lot 40 within the Water Corporation Sewerage Scheme Area with the objective of providing sewerage service to buildings within the Master Plan to assist in improving water quality controls.

7.0 Infrastructure

The implementation of the masterplan will have major implications for the building and service infrastructure of the site. Currently the provision of power, sewer and water are sufficient for the current land use but the following will need to be considered with the expansion of the site (refer Appendix 2 for detailed servicing report).

Power

Stage 1 will require a new site main switchboard to be installed to service the new infrastructure. Further to the stage one works additional sub main cabling required with each additional stage to service the new facilities.

Water

Initial advice from Water Corp suggest that reticulated water supply has capacity to service the all new facilities via extension of internal plumbing.

Stormwater Drainage

Existing stormwater for the site is serviced with a combination of pits and pipes, culverts, open channels and a fenced compensating basin.

The future playing fields and carparking will put increase drainage requirements of the site significantly. There is an opportunity for water treatment to be undertaken at source through the use of drainage swales and retention basins (as per Stormwater Management Manual for WA).



Boyanup Memorial Park Sport and Recreation Ground Masterplan Report

Sewer

Currently Lots 1 and 40 reside outside the scheme boundary, but the Water Corporation have advised that this may be amended and the two lots be included in the scheme area. The proposed location of the new sports facility is potentially unsuited to servicing by gravity sewer. The Water Corp have advised that it will be acceptable to service the future facilities with a pre-packaged pump station and pressure main.

8.0 Masterplan Design

The main goal of the masterplan design is the thoughtful implementation of the knowledge gained through the document review and consultation phase, whilst producing a rationally considered solution to the site planning requirements of the future of the Boyanup Memorial Park sport and recreation ground.

The key design goals for the plan were to:

- Maximise joint-use opportunity
- Maximise sports viewing potential
- Maximise pedestrian and vehicle access and parking
- Maximise re-use and incorporation of existing infrastructure where possible
- Maximise sports growth potential through site planning
- Incorporate the design into the long term planning of the town site

8.1 Site Planning

With the additional land (lot 1) available for development the opportunity for expansion of the site was clearly dictated. Locating a facility to function as the 'heart' of the recreation ground is of the upmost importance in achieving the goals of facility sharing, joint use and spectating.

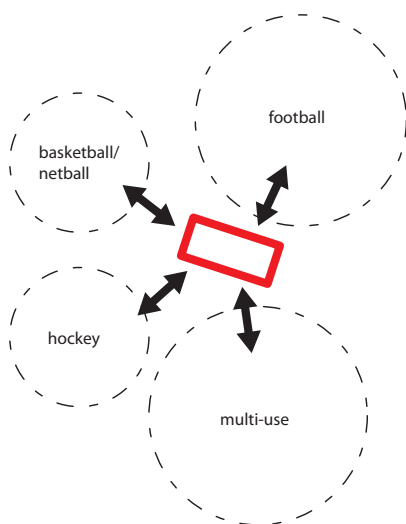
Previous planning investigations of the site, including the Boyanup Memorial Park Development Feasibility Study April 2006, have located the central sporting functions to the north of the existing football oval. With the shifting focus of activity to the south that particular option is no longer feasible.

To enable the best proximity to the future playing fields, whilst maintaining strong connection to the existing consideration has been given to provide a new facility adjacent the southern boundary of the existing football oval.

Strategically this functions as the new 'heart' of the sports ground. It is then important to cluster the maximum sporting functions as close as possible to the new sports facility, enabling convenient use of storage, change and function facilities.

Key opportunities and constraints identified with the site layout of the existing facilities:

- Existing hockey site is undersized and presently constrained by the Highway and the football oval access. Resiting will enable a full sized pitch to be developed in more appropriate orientation (north-south).





Boyanup Memorial Park Sport and Recreation Ground Masterplan Report

- No storage or shelter exists for use by hockey.
- Existing light poles on hockey pitch may be re-used to provide light for future sports on the site.
- Relocation of the hardcourts would enable significant expansion of the bowling club, whilst a new site would enable additional courts to be developed.
- The area to the south of the bowls club is not of sufficient size to allow for expansion of the bowling club, particularly given the historical importance of the existing peppermint trees and memorial.
- Existing football club is detached from any other sports, making shared use difficult.
- Opportunity exists for large multi-use fields to be developed within Lot 1
- No formal traffic control is in place for parking.
- Future residential development to the south of Lot 1 will require legible connection to the park and to the planned facilities.

8.2 Facility Planning

The concept design for the proposed multi-use sports facility has been developed with flexibility at its core. The 1st stage plan consists of 2 pavilions, 1 containing multi-form changerooms and storage, and the other housing function, kiosk and office facilities. (refer drawings in appendix x)

The facility is planned to be placed on a tiered podium, allowing spectator seating on 3 sides. The covered area between the 2 blocks functions as a gathering space for use by spectators and is able to be secured at night.

The multi-form changeroom allows for configuration as either 4 smaller change rooms or 2 larger changerooms through the use of operable walls. This allows for the greatest long term flexibility in providing enough change rooms as dictated by club operations and scheduling. Long term outlook suggests a large increase in sports activity and another multi-form block is planned for the future.

The function pavilion serves as the 'home' for the sports clubs, providing a shared office, display space and function area with kitchen and kiosk facilities. Whilst it is designed to be a shared space between the clubs, club identity is to be fostered by dedicated display areas for use by the different sporting groups to house their trophies and achievements.

The planning of the pavilion is functionally similar to the recently built facility in Capel.



Boyanup Memorial Park Sport and Recreation Ground Masterplan Report

9.0 Staging Plan

This section is to be read in conjunction with Appendix 1: Masterplan Drawings Staging time-frames as shown are as prescribed by the Shire of Capel. Appendix 2 is to be referred to for associated civil works, including servicing requirements for all stages.

9.1 Stage 1 (2012-2116)

The short-term future of the site needs to accommodate the immediate short comings of the existing facilities..

Short Term Location of Farmer's Market Established

Location deemed to be most appropriate short term solution. It enables opportunity for the undercover area to be used for pass-around/ drill training for netball on wet days. Undercover area could provide some benefit to playground area. Any agreement to the provision of BBQ and seating facilities associated with the market will need to be accepted as short term infrastructure that is disposable once the ultimate development occurs. Alternatively it may be considered beneficial to provide any such facilities in a permanent location closer to the playground/ peppermint trees to benefit the future planning of the space. It is anticipated that the Farmers Market will move from the site once expansion is such that the location is no longer tenable. The future location of the market will be subject to future studies. The vacated location will allow for additional parking to service both the immediately adjacent bowls club and the likely increased oval sport.

Stage 1 Sports Facility Building Established

Location determined to provide greatest access to sports fields in the long term, with multi-sided viewing potential to the current oval and future sports fields and courts. The building is to be designed to services Hockey's much lacking storage/ clubroom needs and football's aging facilities as highlighted during consultation. The building will also need to provide storage for Netball and Basketball. The commencement of this facility is subject to a successful Department of Sport and Recreation funding application.

Lighting upgrade to main oval

From advice from both the Department of Sport and Recreation and consultation with the Cardinals Junior Football Club, a lighting upgrade will be of most short term benefit to game operations.

It will enable night games to be played on Saturdays, where as additional field in the short term would put added pressure on access and parking during peak game times.

Carparking and Drainage

Regrading/ resurfacing of the access to the north of the field will help alleviate current drainage issues along the boundary of the oval, with boundary parking access expanded to the west of the oval for greater access to the stage 1 sports facility. It will be crucial for design works to be undertaken for the drainage and eventual future parking configurations to be completed during the stage 1 works to ensure the successful and sustainable growth of the broader recreation facilities.



Boyanup Memorial Park Sport and Recreation Ground Masterplan Report

Basketball/ Netball

Storage for non-immediate items allowed for within new facility. This will satisfy their needs in the short-term but adjacency to their allocated storage will be needed in long run.

9.2 Stage 2 (2017-2021)

Stage 2 of works aims to move sports to locations that will allow their future expansion, primarily Hockey and Basketball/ Netball. Additional parking is to be made available at this stage to service the increase in numbers.

Hockey Relocated to Lot 1

The current site for hockey has limitations both in terms of orientation (loose balls ending up on the Highway) and size. The new site allows for a full size field with orientation optimised for play and safety, whilst maintaining adjacency to the new pavilion building. Sustainable turf options are to be investigated.

Hardcourts Relocated to old hockey field

With hockey relocated to the site to the south the opportunity exists to move hardcourt operations closer to the new sports facility building, maximising joint use opportunity. The existing lighting to the old hockey field is not to small ball standards but may be suitable for use by basketball and netball. 2 additional courts may be incorporated into the site and should be planned for to enable growth.

Bowls Expansion

As previously noted the bowls club is close to capacity, the vacated hard court site provides room for expansion of another green, with facilities upgraded and extended as required. Existing light poles to the site can service the additional green, with lamp requirements to be assessed.

Grassed Training Area

Training area established in the short term, to be expanded to future oval as population/ club pressure dictates. Lack of sufficient training/ warm up area was highlighted as a priority item during consultation

Path Network

With the focus of the major sporting hub relocated to the northern boundary of lot 1 it is critical that a path network is established to feed pedestrians from the existing heritage gates and Thomas street entry, including the playground, in a safe, legible way.

Parking Expansion

The relocation of the hockey field to its final lot 1 location will enable the parking adjacent the new sports facility to be expanded. The central focus of activity will require greater levels of access that will be provided for with the additional parking area. The relocation of the Farmers market will allow a portion of the land adjacent the bowls club to be developed as additional parking to facilitate expansion generally as well as the expansion of the bowls club.



Boyanup Memorial Park Sport and Recreation Ground Masterplan Report

Cricket Practice nets

Cricket practice nets are to be provided on the northern site adjacent the school. The location allows access from the public as well as use by school groups.

9.3 Stage 3 (2022-2027)

From the conclusions drawn from demographic analysis the number of junior sports participants will likely be in the order of 3 fold assuming similar participation rates by 2021. Dependant on growth, the additional playing fields shown at this stage, particularly those servicing junior football may need to be established early to satisfy demand.

Stage 2 Sports Facility Building Established

The relocation of the hockey field and hardcourts will likely put pressure on change facilities. There will be a need for a additional change rooms to cater for potential evening conflicts between hardcourt sports and oval use. An additional multi-form changeroom is allowed for under the potential second stage development of the sports facility.

The additional land acquired with the relocation of hockey will allow for extra parking adjacent the expanded facility.

Playing fields established

As dictated by the Shire's open space level of service an additional sports field will be allowed for. The final location and size will allow for maximum possibilities for playing field configuration, allowing space for potentially an addition football, cricket or multiple rugby, soccer and hockey fields. The final arrangement is subject to future use determination as dictated by club growth and needs, and as noted may need to be established earlier. The extend shown during stage 3 is approximately half of its potential future extent.

Playground

A playground is established adjacent the new facilities, allowing increased passive surveillance and separation from traffic flows around the new sports pavilion. The new playground is to be established early in stage 3 potentially concurrently with the stage 2 building.

Carparking

The regrading/ resurfacing of the access to the north of the field started in stage 1 is to be continued to the north-east of the oval to expand access and spectator volume increase.

Hardcourts

Dependant on the level of use the hardcourts can be expanded to accommodate likely future increase in basketball and netball participants.

Drainage

The drainage/ civil solution developed during the stage 1 design process is to be implemented concurrently with the development of the additional sports fields. the



Boyanup Memorial Park Sport and Recreation Ground Masterplan Report

plan shows an preliminary configuration of a drainage swale to the east which will need thorough engineering review and input to provide an adequate solution during the early stages of the design process.

Landscaping

Landscape buffers are to be provided along the highway adjacent the established Hockey field to provide both visual amenity from the highway and potentially shaded seating areas.

9.3 Stage 4 (2028-2032)

Southern Access Road

The configuration shown on the plan is only notional. With the area to the south of lot 1 shown in the townsite structure plan as a short to medium term development it is expected that road access will be required to the development site at a location close to Lot 1. The location of this access will need to be subject to future traffic planning, there needs to be a provision for vehicular access to the facilities at the south of the site, with extra parking required for the planned sports activities and passive recreation.

Path Network

A path network is shown connecting the future development lot to the south with the newly activated passive recreation zone running along the east of the park. The path has the potential to connect to future Preston River walk trails and up to a future east west path connection across the river to long term residential development sites. This connection will be beneficial to establishing recreation walking objectives as dictated by the Shire's level of service.

Drainage

The drainage will need to be extended to accommodate the future playing areas as noted in stage 3.

Landscaping

Landscape buffers are to be provided along the highway adjacent the future fields to provide both visual amenity from the highway and potentially shaded seating areas.

Indoor Sports Area

The provision of this facility has been indicatively shown on the plan, however it is subject to greater detailed investigations, both in respect to demand and cost of development and management.

Toilets

Located to the south of the site additional toilets servicing the southern most fields are subject to provision on an as needs basis.



Boyanup Memorial Park Sport and Recreation Ground Masterplan Report

10.0 Funding and Implementation

The identified staging plan and its associated costing will now allow the staging proposals to be included within the Shire's ten year financial plan (Corporate Plan) and also provide financial direction beyond this depending on staging time frames.

In this plan the stage timing will generally be synonymous with 'priority', meaning the projects identified in earlier years should generally be the higher priorities. Budget pressures, changes in participation rates or demographics, population growth rates, grant programmes and other factors may impact upon the implementation of the plan.

The goal of this plan is however to work within the directions of the Corporate Plan and this means implementing all capital recommendations in a timeframe consistent with population growth and within expected sources of funding.

Should additional funding become available, either sooner or in greater amounts, the staging timeframe should be used to guide decisions with an intent to advance projects already identified or meet new and emerging needs.

In implementing this plan Council will consider approaches that are financially and environmentally sustainable. Opportunities to partner with developers and government (schools), build cost effective multi-use facilities and to seek out developer and contributions and grant funding will be a high consideration.

11.0 Monitoring and Review

The proposals within the plan will need to be formally reviewed on an annual. The annual reporting process related to the Plan should also identify which recommendations and stages have been initiated or achieved, where new initiatives have been undertaken, or where timing of staging has been adjusted and why.

It is important to note that changes to staging and timing will result from being proactive in keeping up with; emerging trends, the existing and changing popularity of sports, the changing and developing community demographics, technological advancements in field surface standards and facilities, climate change and broader world issues which will occur over the next 10, 20 and 30 years. Above all the decisions will however be aimed at contributing to a high quality of life for the Boyanup community.

12.0 Recommendations

Sports requirements and staging should be assessed on an ongoing basis to ensure adequate provision of facilities throughout the future of the site.

Where appropriate sustainable turf solutions should be investigated with the provision of sports field .



Boyanup Memorial Park Sport and Recreation Ground Masterplan Report

Lighting infrastructure should be designed to provide maximum and effective multi-use of the sports fields and placement considered to most effectively make use of expensive infrastructure.

The detailed design of the sports facility building should prioritise the provision of shared facilities, ensuring a space that can be effectively managed and occupied by the future users of the facility.

The detailed design of drainage, roads and parking for future stages should be undertaken as part of stage 1 works, to ensure considered and well detailed integration of future works.

Detailed engineering investigations should be undertaken early in the design stage to ensure the provision of an appropriately designed and considered solution to site water management and servicing.

The access to the south of the site (southern access road) should be considered during the early planning phases of the proposed development to the south of lot 1 with issues of traffic management and access off the highway a high priority.



Boyanup Memorial Park Sport and Recreation Ground Masterplan Report

Appendix 1: Masterplan Drawings



Boyanup Memorial Park Sport and Recreation Ground

Stage 1 (2012-2016)

DRAFT



job number: 0811-G
issue date: 06/02/2013
revision: F
drawing number: cd01



pedestrian access
bowls expansion

new cricket practice nets
vehicle entry

heritage tree avenue and pedestrian gates to be retained
pedestrian access
new expanded hardcourts

new parking
expand parking

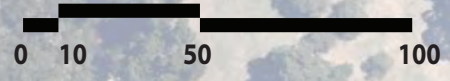
Pathways to be located to provide hard edge separation between development and foreshore protection area.
Selected direct access to be provided to foreshore from path where safe for public and environmental impacts minimal

shallow drain with culverted pedestrian bridges

establish training area grass

existing tree line to be managed to allow viewing opportunity to proposed hockey

relocate hockey to new lit field
sustainable turf options to be investigated





future pedestrian link

Fence to precinct - consider need for and type of fencing in regard to obstruction of flood flows

settlement pond/ drainage collector strategically located within existing cleared area at detailed design stage

perimeter parking expanded

stage 2 sports facility building with multi-viewing opportunity

swale/ culvert

potential hardcourt expansion if required

Pathways to be located to provide hard edge separation between development and foreshore protection area.

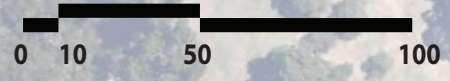
Selected direct access to be provided to foreshore from path where safe for public and environmental impacts minimal

sustainable landscape buffer

new playground

drainage swale strategically located at detailed design stage in consultation with the Department of Water

multi-use sports field subject to future use determination (stage 1)



future pedestrian link

settling pond/ drainage collector strategically located within existing cleared area at detailed design stage

future building expansion

community centre parking expanded as required

indoor/ covered sports area needs considered in future

swale/ culvert

multi-use sports field subject to future use determination

drainage swale strategically located at detailed design stage in consultation with the Department of Water

0 10 50 100

sustainable landscape buffer

Fence to precinct - consider need for and type of fencing in regard to obstruction of flood flows

future soccer

sustainable turf options to be investigated future soccer

Pathways to be located to provide hard edge separation between development and foreshore protection area.

future toilets/ changerooms

Selected direct access to be provided to foreshore from path where safe for public and environmental impacts minimal

future access road (to be determined)

sustainable landscape buffer, to be implemented in regard to spectator shade, visual amenity and turf growing requirements

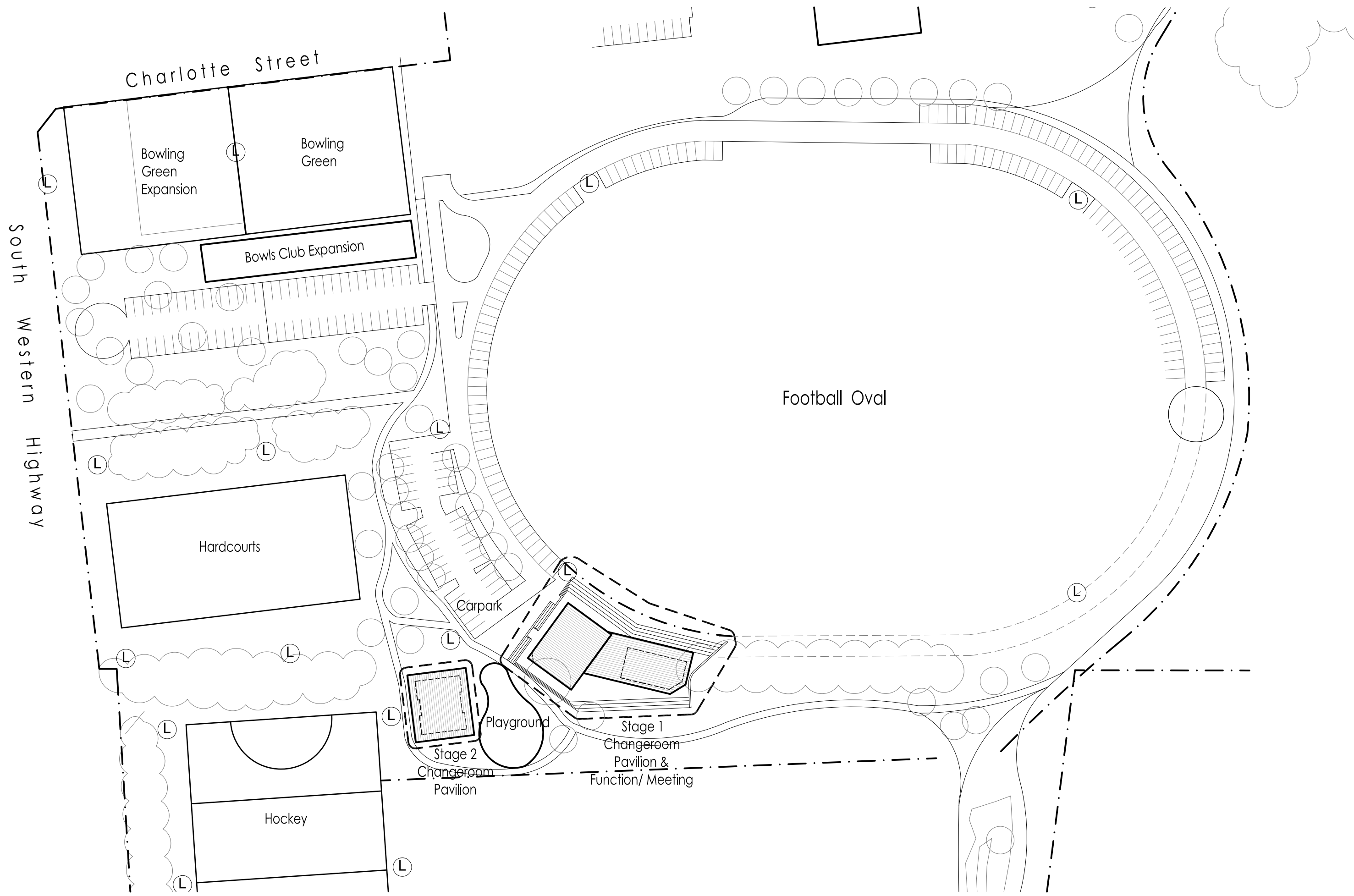
Boyanup Memorial Park Sport and Recreation Ground

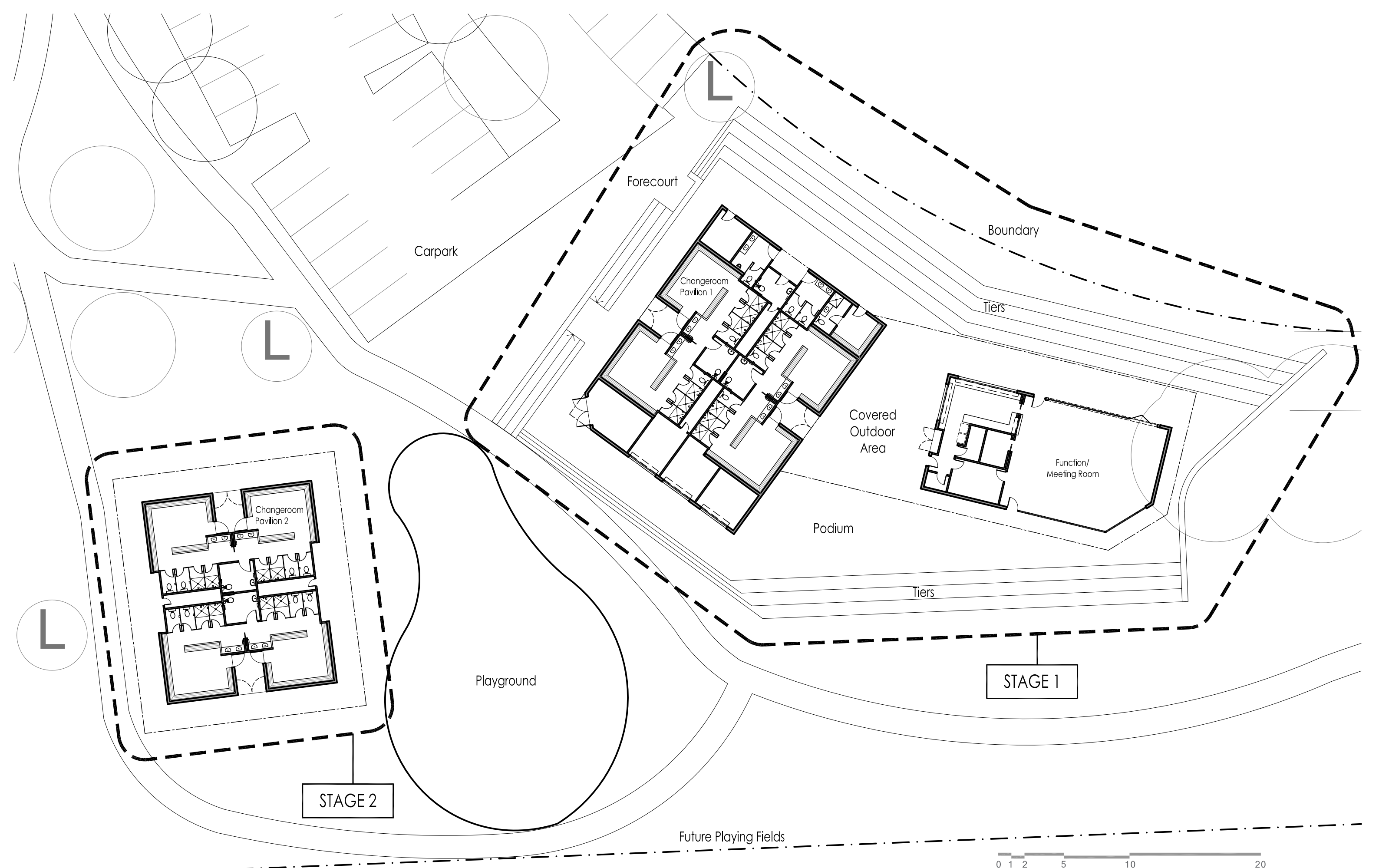
Stage 4 (2028-2032)

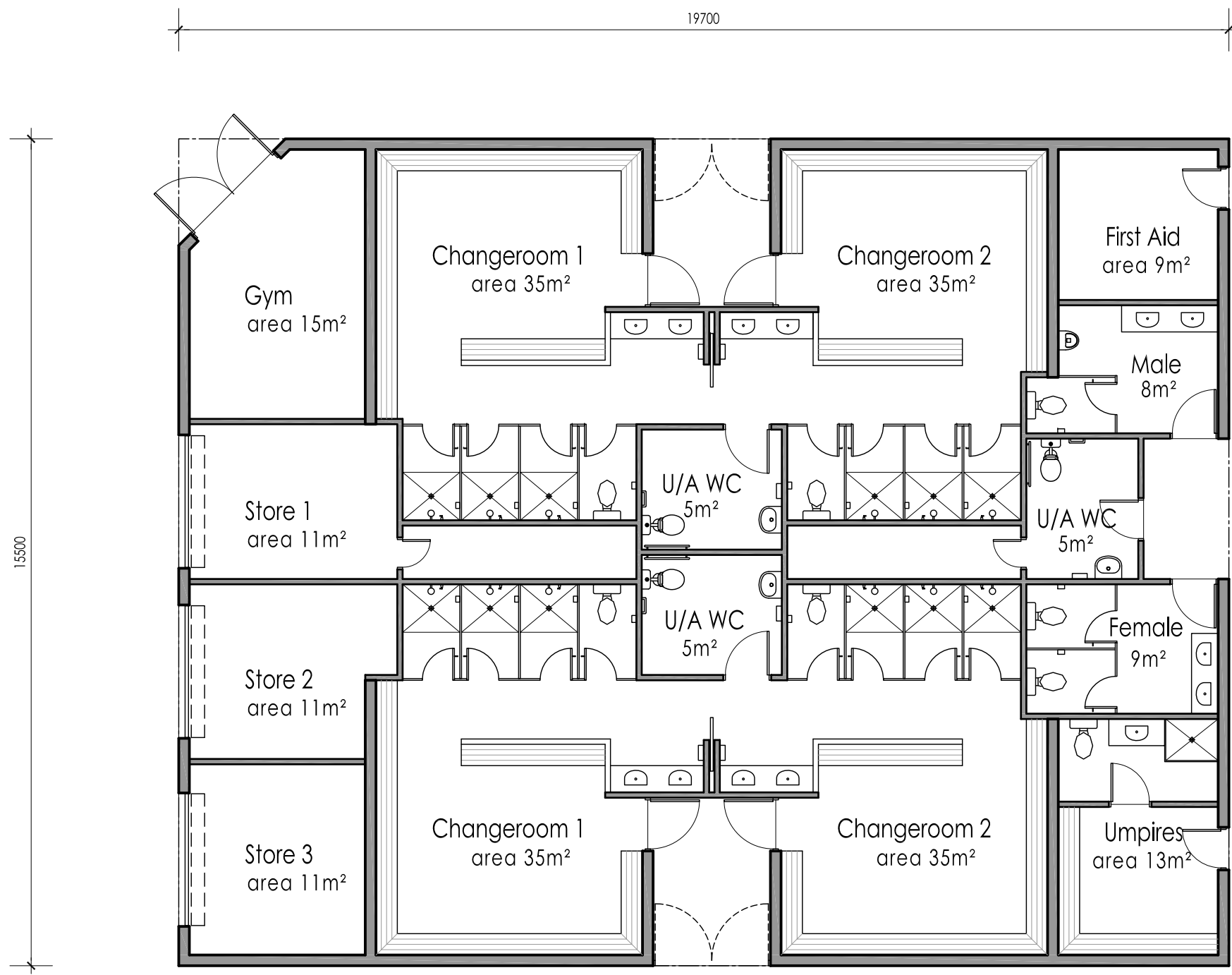
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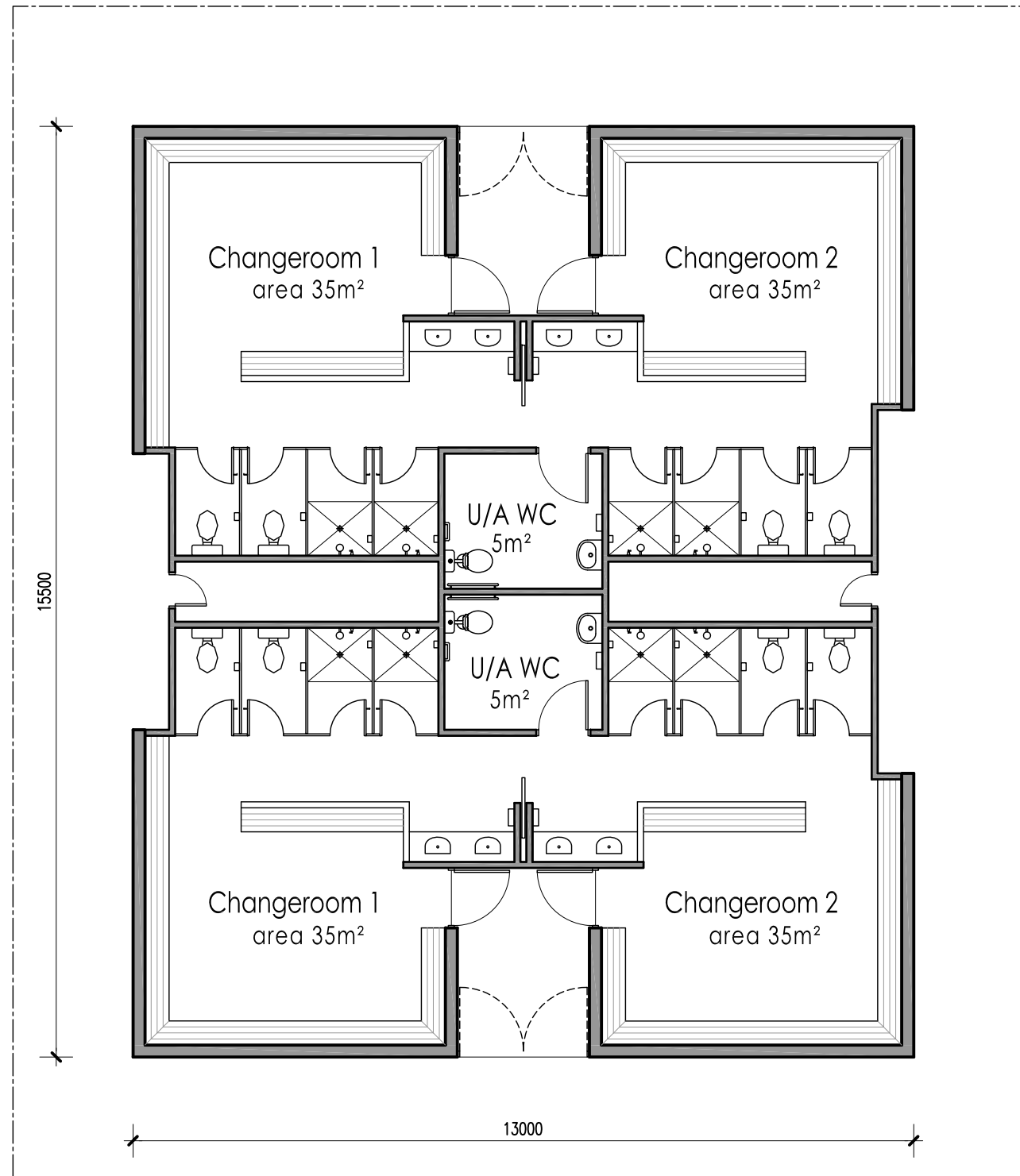


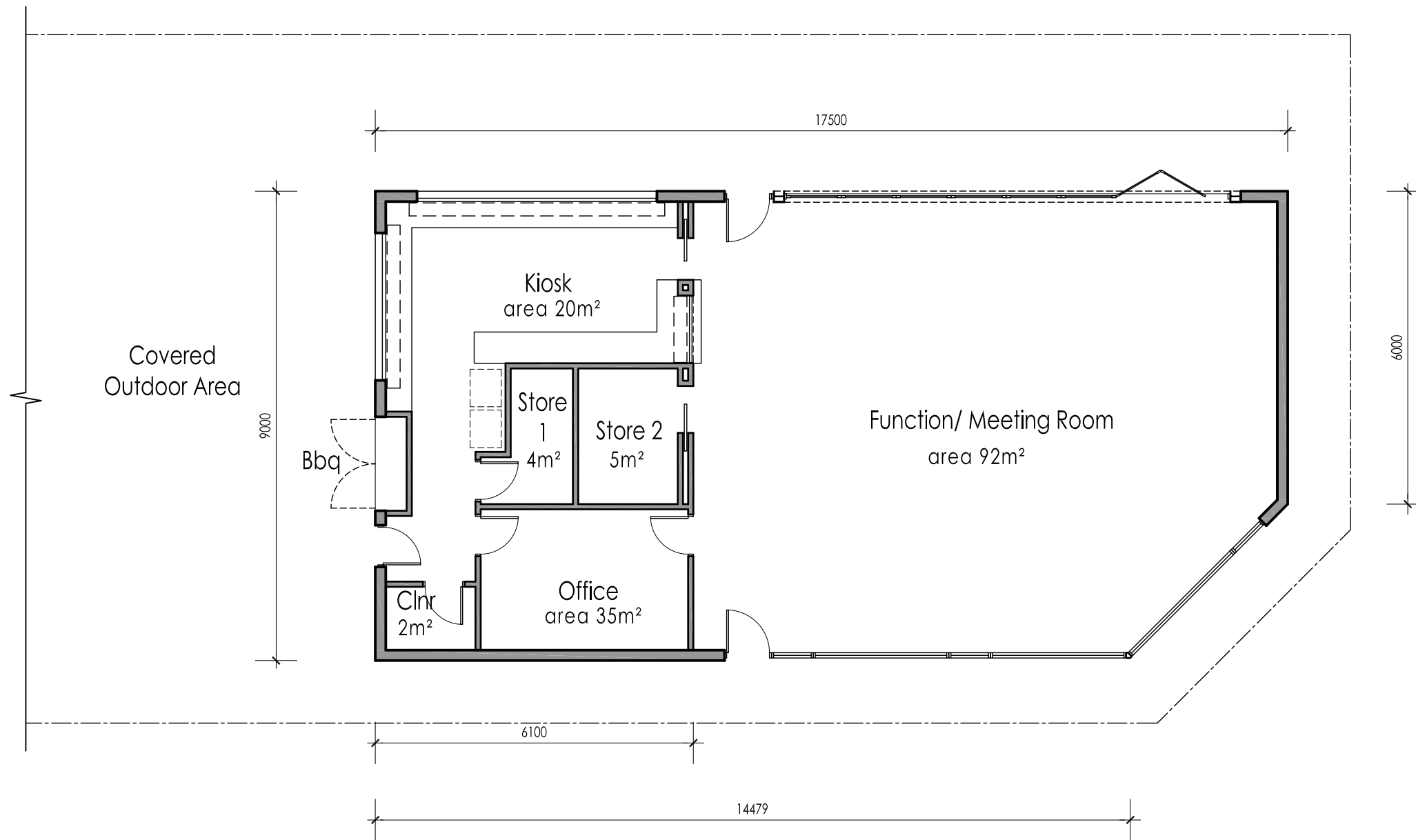
job number: 0811-G
issue date: 06/02/2013
revision: F
drawing number: cd04













Boyanup Memorial Park Sport and Recreation Ground Masterplan Report

Appendix 2: Civil Engineering Report



For:

Gresley Abas

Attention: Ben Price

21 September 2011

VITAL EXPERIENCE IN

acoustics / civil / electrical / ESD /
fire / hydraulic / lifts / mechanical /
property asset management /
structural / underground power



**Boyanup Recreational Ground
Preliminary Engineering Report**

1	INTRODUCTION	1
2	SITE DESCRIPTION	2
2.1	LOCALITY	2
2.2	TOPOGRAPHY & LAND USES	2
2.3	GEOLOGY	5
2.4	HYDROLOGY	5
3	EARTHWORKS	6
4	SEWER	7
4.1	EXISTING	7
4.2	RETICULATED SEWER	7
4.3	ON-SITE EFFLUENT DISPOSAL	8
5	STORMWATER DRAINAGE	9
5.1	DRAINAGE REQUIREMENTS OF AUTHORITIES	9
5.2	EXISTING DRAINAGE	10
5.3	LOT 1 – DRAINAGE SWALE	10
5.4	LOT 40 – DRAINAGE SWALE, ROAD DRAINAGE, OVAL DRAINAGE & HARD STAND AREAS	10
5.5	LOT 67 – SETTLING POND / DRAINAGE COLLECTOR (BASIN)	11
5.6	GENERAL	11
6	ROADWORKS	12
6.1	EXISTING	12
6.2	PROPOSED UPGRADE OF OVAL ROAD (LOT 40)	12
6.3	PROPOSED CARPARKS	12
6.4	MISCELLANEOUS	12
7	WATER	13
7.1	EXISTING	13
7.2	RETICULATED WATER	13
8	POWER SUPPLY	14
8.1	GENERAL	14
8.2	STAGE 1	14
8.3	STAGE 2	14
8.4	STAGE 3	15
8.5	STAGE 4	15
9	SUMMARY	16

- FIGURE 1 Gresley Abas, Draft Master Plan (Stages 1, 2, 3 & 4)
FIGURE 2 Thompson Surveying Consultants, Feature Survey
FIGURE 3 Department of Water, 0.5m Contours Plan
FIGURE 4 Water Corporation, Sewer Scheme Plan
FIGURE 5 Water Corporation, Sewer As-Constructed Plan
FIGURE 6 Water Corporation, Water As-Constructed Plan
FIGURE 7 Shire of Capel, Drainage As-Constructed Plans

APPENDIX A District Water Management Strategy for Shire of Capel
(Extract)



1 Introduction

Wood and Grieve Engineers (WGE) have been engaged by Gresley Abas to provide generic engineering advice on the proposed staged development of Lots 1, 40 and 67 of the Boyanup Memorial Park site.

Based on discussions with the Shire of Capel, we understand the following developmental timelines have been proposed for this project:

- Stage 1: Year 2012 – 2016
- Stage 2: Year 2017 – 2021
- Stage 3: Year 2022 – 2027
- Stage 4: Year 2028 – 2032

WGE has undertaken preliminary investigations into existing servicing infrastructure and within this report we address the major civil engineering servicing aspects consisting of earthworks, sewer, stormwater drainage, roadworks, water and power for the proposed three stages of development (Figure 1).

The information provided herein is current only at the date this report was produced. Future developments in the Boyanup area and the timing of this development may impact on infrastructure capacity and should be re-evaluated once planning has progressed sufficiently. In addition, the findings presented are of preliminary nature and are subject to formal review and approvals by relevant authorities and undertaking detailed engineering design.

2 Site Description

2.1 Locality

The subject site is located within the Shire of Capel, and is bound by Boyanup Primary School to the north, Preston River to the east, undeveloped land to the South and South Western Highway to the west.

The site is located less than 1km south east of the Boyanup Town centre.



Locality Plan (Source: WhereIS.com, 2011)

2.2 Topography & Land Uses

For ease of referencing, discussions within this report have been categorised in accordance to their respective lot numbers and are based on desktop review of the Feature Survey by Thompson Surveying Consultants (Figure 2) and site inspection undertaken by WGE.

Lot 1

This lot exhibits levels that range from approximately 39.9m AHD to 40.9m AHD and generally slopes in a westerly direction down to South Western Highway. Although the existing survey extent terminates at the eastern lot boundary, site inspection confirmed that the vegetated ground east of the boundary grades steeply down to Preston River with slopes up to 20%.

Several localised depressions exist within this lot and appear to be frequently inundated during the wet seasons. These depressions are typically found along the western site boundary and in particular within the north western portion of the lot. A photo taken in August 2011 of a depression adjacent the common boundary of Lots 1 and 40 is enclosed below, where a 150mm deep inundation area was observed.



Inundation Photo A (Source: WGE, 2011)

Lot 1 is typically cleared of significant vegetation except along the common boundary of Lots 1 and 40 where there is a row of well established trees. Existing electric fencelines are identified on the feature survey along the western, northern and through the central portion of the lot.

Present lot use consists of cattle farming.

LOT 40

Majority of the site has levels ranging from approximately 38.6m AHD to 39.8m AHD, except along the eastern site perimeter where the terrain has levels between 32.1m AHD and 38m AHD. The average slope of the terrain grades down steeply to Preston River with an average slope of 20%.

Based on desktop review and site inspection, a tree line exists along the southern boundary with thick vegetation also observed on the steep eastern edge.

Various sporting facilities / fields reside within this lot and include:

- Football Oval and Changerooms
- Hockey Field
- Basketball / Netball Courts
- Bowling Green and Club
- Skate Park
- Playground

In addition to above, an asphalt carpark and a cracker dust oval road (surrounding the football oval) were observed on site.

Based on advice from the Shire of Capel (SoC), the area adjacent the playground is prone to surface water inundation. This occurrence was confirmed after a heavy downpour during WGE's site inspection. A roughly formed cut off drain was observed (Inundation Photo B) where it directs surface runoff to an existing drainage gully pit.



Inundation Photo B (Source: WGE, 2011)

Lot 67

Majority of the site has levels ranging from approximately 37m AHD to 38.7m AHD where it generally grades down in an easterly direction to the Preston River. However, there is a low lying area east of the 38m AHD contour line where the ground grades steeply at an average 10% gradient down to approximately 31.6m AHD. This low lying area is where the passive settling pond / drainage collector has been proposed on the Stage 3 master plan.

SoC advised a Pony Club used to be located in this low lying area. WGE notes that there may be a high level of nutrients given its previous land use and as such, geotechnical investigation will be required to confirm its suitability for the proposed development.

Based on desktop review and site inspection, existing lines of trees were observed along the western boundary and along the 38m AHD contour line.

The following presently reside within the site:

- Community Centre with public toilets
- Carpark
- Playground
- Cricket Pitch
- Abandoned old buildings
- Drainage open channel and basin

2.3 Geology

At the time of preparing this report a geotechnical investigation had not been undertaken, therefore site specific geological constraints have not been determined.

Based on anecdotal evidence from SoC, clayey soil typically exists within this locality. This soil type is generally impermeable and may result in the perching of surface runoff or sub-surface groundwater. In addition, construction may be difficult due to the nature of the soil to swell when exposed to moisture.

For the purpose of this report, it has been assumed that a clay soil type is prevalent across the entire site.

WGE recommends a site investigation is undertaken by a geotechnical specialist to ascertain the existing ground conditions where earthworks, open excavations and stormwater drainage have been proposed to assist when detailed engineering design is required. A specific geotechnical report will investigate and advise on soil strata, site permeability, subsoil drainage techniques, building footing requirements and general earthworks methodology particular to the site. Due to the clay nature of the area the consultant should also advise on proximity of mature trees to the proposed buildings as this may influence structure design and earthwork planning.

2.4 Hydrology

WGE liaised with the Department of Water (DoW) to obtain floodplain information for the Boyanup area. Unfortunately, DoW advised there was no formal flood mapping of the Preston River at Boyanup. However, based on anecdotal advice from DoW, a large flood event (greater than 100 year ARI) occurred in August 1964 where the peak flood level at a location roughly 600m downstream of the site (i.e. north of development) was measured at approximately 33m AHD.

Reviewing the 0.5m interval contours plan supplied by DoW (Figure 3), the eastern fringe of the current site has levels that range from 37m AHD to 39m AHD which indicates there is an approximate 4m to 6m vertical freeboard. Given that the majority of the current and proposed recreational infrastructure is going to be located west of the fringe line and on higher ground, it is envisaged that there should be adequate protection of buildings to 100 year ARI flood events.

WGE notes that a hydrological investigation has not been undertaken at the time of preparing this report. As such, site specific hydrological constraints are presently unknown.

3 Earthworks

Based on the Stage 4 concept design, it is envisaged that earthworks will be required in areas where roadworks, stormwater drainage and building pads have been proposed. In addition, the existing low depressions within Lot 1 will require minor earthworks to address water ponding issues.

As described within Section 2.2, the existing surface of Lot 1 typically slopes down in a westerly direction forcing surface water away from the proposed drainage catchment areas. As such, earthworks will be required to redirect surface runoff to flow into the drainage swale / basin proposed along the eastern boundary as shown on the Stage 4 plan.

Rather than bulk earthworking the entire site to grade in an easterly direction it may be possible to reduce the extent of earthworks via the provision of a cut-off drain along the northern boundary of Lot 1. However, this will require modification of the master plan to accommodate this drain which may include but not be limited to the relocation of the proposed playground and addition of drainage culverts where access across the drain is required. If SoC deem this as an acceptable solution, the extent of the eastern drainage swale and the earthworks requirements of Lot 1 may be potentially reduced subject to undertaking final engineering and hydrological investigations.

The problem with cut-off drains is that they will deter from the visual and physical linkage between the Sports Facility Building and the Multi-Purpose Oval. It may be possible that the length of the cut-off drain could be reduced to along the line of trees south of the Football Oval subject to undertaking earthworks to grade the north western section of Lot 1 down to the drain or installation of sub-soil drains.

WGE notes that any earthworks proposed within clayey areas shall ideally be undertaken during dry seasons to ensure site workability. If this is not possible, the exposure of the clayey surface to extended periods of moisture shall be limited through carefully planned out construction. In addition, the clay surface shall be shaped to ensure any trapped sub-surface water grades out where earthworks have been proposed (and install a network of subsoil drainage to assist with draining perched water away where required).

Changing the hydrological nature of the site and redirecting previous drainage flow paths may impact on existing vegetation within the site. WGE recommends that a Landscape Consultant should also be involved in the planning process if significant vegetation is to be retained on the site, adjacent drainage features.

4.1 Existing

Based on discussions with SoC and a review of sewer as-constructed information (Figure 5), we understand the Football Changerooms and the Bowling Club (existing sport facilities) are being serviced with on-site septic sewer systems and leach drains, and the Community Centre is serviced via the 150mm diameter gravity sewer located within Thomas Street.

4.2 Reticulated Sewer

A review of the Water Corporation (WC) Preliminary Wastewater Scheme Plan (Figure 04) shows that only Lot 67 is within their Waste Water Treatment Plant (WWTP) Catchment area (its land use is currently classified as Parks and Public Open Space.) Although both Lots 1 and 40 reside outside of the scheme boundary, WC has advised that this plan is currently being reviewed and may be amended which may see these two lots being included within the scheme area. SoC may wish to investigate further with WC to include these lots during the review process.

For the purpose of this report, we have assumed this plan is current and have based our investigations on the current scheme boundary.

EXISTING FOOTBALL CHANGEROOMS & BOWLING CLUB (LOT 40)

Preliminary servicing advice from WC indicates that the existing sport facilities may be serviced by gravity sewer via the extension of existing 150dia sewer within Thomas Street down to Charlotte Street, subject to undertaking detailed engineering design. For this servicing option to work, WC advised either the scheme boundary needs to be extended south to include Lot 40 or Lot 40 be amalgamated with Lot 67 to share a 150dia sewer lot connection.

As an alternative, WC advised it may be possible to service both existing facilities through a private pre-packaged pumpstation and pressure main where the effluent will be discharged to the existing 150dia gravity sewer lot connection that currently services Lot 67. This option may be cheaper than the extension of 150dia gravity sewer as costly reinstatement may be required within the established Thomas Street.

The above servicing strategies will enable the connection of existing sport facilities to gravity sewer during Stage 1 works (if required) and accommodate the re-purposing of the Football Changerooms to Youth Facility in Stage 2 subject to confirmation of capacity of existing sewer system at the time of development.

PROPOSED SPORTS FACILITY BUILDING (AT COMMON BOUNDARY OF LOTS 1 AND 40)

Based on preliminary assessment of site contours, it appears this building will not be serviceable at current ground levels with gravity sewer as it is too low.

WC advised that it will be acceptable to service this building with a private pre-packaged pumpstation and pressure main subject to the amalgamation of Lots 40 and 67. Depending on the adopted sewer solution for the existing sporting facilities, effluent from this proposed clubroom may either be discharged directly to Lot 67's lot connection or downstream to the potential private pre-packaged pumpstation site shared between the facilities.

The master plan currently shows that the building is to be staged (i.e. Stages 1 & 3) based on the level of public demands. When selecting a private pre-packaged pumpstation, the sewer flows generated by each stage of the development need to be taken into consideration to ensure operating serviceability of the selected pumping system. WGE notes further that the proposed finished floor level will need to be determined to assist with the selection of a suitable pumpstation system which includes pump/s, sump and a rising pressure main.

FUTURE TOILETS/CHANGEROOMS (LOT 1)

Based on the sewer as-constructed information, there is no existing sewer infrastructure surrounding Lot 1 that can facilitate a point of connection to reticulated sewers. The closest point is located at Lot 67 approximately 550m away.

WC advised it will be acceptable to service this isolated facility with a private pumpstation and pressure main with the intention of discharging effluent to either Lot 1 or 67. However given the length required for the pressure main and the relatively small sewer flows, it will be uneconomical to adopt this servicing strategy. As such, on-site effluent disposal such as ATU's should be investigated as a solution.

Discussions with SoC indicate that Lot 100 (south of Lot 1) may be developed in the future where there could be potential to connect into their sewer system. However as its development timing is unknown, alternate sewer servicing is required in the short term, or consider relocating the structure closer to the Sports Facility Building.

As advised by Gresley Abas, WGE has assumed the development of Lot 100 would have progressed ahead of Stage 4 and as such, a suitable gravity sewer connection will be available when Stage 4 works commence. However, we would still recommend investigation of on-site treatment for this location if the development of Lot 100 did not proceed as assumed.

4.3 On-site Effluent Disposal

SoC advised that they generally prefer reticulated sewers over on-site effluent disposal due to the prevalent clayey soils found within the Boyanup region and the installation issues encountered to date. The main concern they have is that clays are generally impermeable and as such, majority of the systems installed have not functioned as designed and/or lacking the required technical supports from the manufacturers.

SoC further advised that if on-site effluent systems are proposed a Land Capability Assessment would need to be undertaken to confirm its suitability.

5 Stormwater Drainage

5.1 Drainage Requirements of Authorities

SHIRE OF CAPEL

The District Water Management Strategy (DWMS) prepared for SoC provides general guidance for developments within the Shire where it outlines the design criteria in terms of water conservation, groundwater management and stormwater management (refer to Appendix A for extract of the DWMS).

The following items broadly discuss the relevance of these requirements on the development:

(Water Conservation)

All the objectives are relevant to this development as they relate to Public Open Space, with the exception of the last objective where it relates to household water consumption.

(Groundwater Management)

Key points of this section are to ensure that all developments have adequate freeboard to known groundwater levels and that the risk of nutrient enrichment to downstream receiving surface water bodies are kept minimal as a result of groundwater movements.

Based on discussions with SoC, we understand there is currently no groundwater information available for the site and as such we are not able to comment on the effects of groundwater on proposed buildings or downstream receiving environments. However, SoC did advise that the majority of the playing fields are intended to be grassed (with the exception of the future hockey and soccer fields that abut South Western Highway proposed to be synthetically turfed) and as such, the effects of nutrients enrichment should be considered at planning stage especially if fertiliser is to be used on grassed areas.

(Stormwater Management)

All the objectives are relevant to this development.

In addition, SoC has advised that the proposed drainage swales should be designed with a minimum 10 year ARI serviceability.

DEPARTMENT OF WATER

As part of our investigation, we approached DoW for preliminary comments on the draft master plan. Key points of importance are:

- The proposed vegetated drainage swale and a series of detention basins are compliant with the Stormwater Management Manual for WA
- Drainage basins to be designed to empty within 96 hours during mosquito risk season and should not be aesthetic water features
- Water treatment is encouraged to be undertaken at source if possible
- Water quality from grassed areas should be managed by source control through the development and creation of a Nutrient and Irrigation Management Plan
- The management of water flows for interim Stages 1, 2 and 3 needs to be considered

5.2 Existing Drainage

Based on site assessment and a review of drainage as-constructed information (Figure 7), the site drainage presently consists of:

- pits and pipes (within Lots 40 & 67 at carparks and existing roads)
- culverts (within Lots 40 & 67)
- open channels (within Lots 40 & 67), and
- a fenced compensating basin (north of Lot 67)
- SoC has confirmed that all existing buildings are not connected to soakwells as roof runoff is allowed to enter into adjacent drainage systems via overland flows. WGE site inspection has confirmed this.

5.3 Lot 1 – Drainage Swale

It is our understanding that this drainage system has been proposed in Stage 4 with the intention of collecting, treating and conveying surface runoff from Lot 1. Due to the natural terrain this drainage system does not function as intended as runoff presently sheets away from the swale in a westerly direction. As noted within Section 3, earthworks will be required to alter the natural surface to encourage runoff to enter the proposed swale if its location is retained.

As an alternative (and to reduce the earthworks requirements of Lot 1), a cut off drain may be provided to intercept and convey surface runoff eastwards along the northern boundary of Lot 1 to a drainage basin for detention and/or treatment. Subject to undertaking final earthworks and geotechnical investigations, the length of the drain may be reduced by incorporating sub-soil drains.

5.4 Lot 40 – Drainage Swale, Road Drainage, Oval Drainage & Hard Stand Areas

DRAINAGE SWALE (STAGE 3)

Based on a review of feature survey, it appears the linkage swale requested by the SoC will serve as an overflow for Lot 1 drainage system where it will also collect and convey runoff generated from the eastern half of the football oval's drainage catchment. In order to confirm the suitability of its proposed location, WGE notes that detailed drainage modelling and final design of the adjacent access road (with carbays) would be required to determine if it can adequately fit within the space provided.

Bioretention function should also be incorporated into the drainage design in accordance with the DWMS and relevant statutory requirements.

ROAD & CAR PARK DRAINAGE (STAGES 1, 2, 3 & 4)

The existing oval road surrounding the oval contains sparsely located drainage pits along the western half and a drainage culvert and open channel at the eastern edge of the oval. As part of the development, proposed drainage should be designed to have minimum 5 year ARI serviceability with appropriate flood routing path/s allowed to safely convey 100 year ARI overland flows away from proposed infrastructure. Considerations should be given to service the drainage catchments generated by proposed car parks.

WGE notes that the above needs to be finalised at Stage 1 to enable future works to integrate efficiently.

OVAL DRAINAGE (STAGE 1)

Assuming the oval levels remain unchanged as part of the development, feature survey shows that runoff from the oval presently sheets away from the centre to its perimeter. For the northern half of the oval's catchment, the design of the drainage proposed within the adjacent oval road should allow to accommodate this catchment to ensure runoff can be safely conveyed away from the oval's edge. For the southern half of the oval, a shallow cut off drain may be allowed to intercept and convey runoff to the eastern linkage swale, subject to undertaking engineering design.

Assuming that clayey soil is prevalent, WGE advises that subsoil drainage may be required to assist with draining perched water around the perimeter of the oval to approved drainage discharge points.

HARDSTAND AREAS (STAGES 1, 2, 3 & 4)

Various hard top/stand areas have been proposed where considerations should be given to address runoff generated from impervious areas either via the provision of drainage lot connections (that connect into existing drainage infrastructure) or acceptable overland flow path/s to approved drainage discharge points.

For Stages 1 & 2, WGE believes the majority of the facilities can be serviced via the extension of existing drainage infrastructure and retaining the use of existing drainage channel/outlet system along the boundary of Lots 40 & 67 for runoff discharges, subject to undertaking detailed engineering design.

For Stage 3, WGE notes that detailed engineering design is required to enable a suitable drainage outfall to be selected to discharge Lot 40's runoff into the proposed settling pond/drainage collector (east of Lot 67).

5.5 Lot 67 – Settling Pond / Drainage Collector (Basin)

The drainage basin has been proposed within a low lying area where there should be sufficient change in levels to enable proposed upstream drainage to convey runoff into.

Preliminary review of existing contours indicates this area typically grades out to Preston River. WGE notes that geotechnical and hydrological investigations will be required to enable the sizing of basin and to assist with the integration of future pedestrian footpaths and landscaping applications.

Bioretention functions should also be incorporated into the drainage design in accordance with the DWMS and relevant statutory requirements.

SoC envisaged that this drainage basin will replace the existing fenced compensating basin (located north of Lot 67) and potentially some or the entire open channel that runs east-west along the southern boundary of this lot as part of Stage 3 works.

5.6 General

Due to the potential of working in a clay area it is highly recommended that any drainage designs / construction is carried out at least 6 months (to be confirmed by Geotechnical investigation) in advance of adjacent building construction. This will allow the moisture content of the adjacent soil to stabilise and minimise shrinking / expansion which can be detrimental to buildings.

6.1 Existing

The site currently has a main gated entrance off Thomas and Charlotte Streets which is a kerbed and sealed (with black asphalt) road pavement. Two existing carparks of the same treatments were observed on-site situated east of the main entrance.

The entrance road joins into an existing cracker dust oval road that runs around the periphery of the Football Oval within Lot 40. This track is presently unkerbed and has been finished with cracker dust on clayey subgrade. SoC was not able to comment on the depth of the clayey subgrade.

6.2 Proposed Upgrade of Oval road (Lot 40)

Based on preliminary discussions with SoC, the existing cracker dust road would require upgrade to a sealed road pavement (similar to entrance road) that conforms to the relevant Shire standards and requirements when Stage 1 works proceed.

Due to the presence of clay, WGE recommends that a geotechnical specialist is engaged to ensure a suitable road pavement is designed to suit ground conditions.

6.3 Proposed Carparks

Preliminary advice from SoC indicates that proposed car parks should be designed and constructed to the same treatments as per the existing ones. This applies to all car parks proposed within the draft master plan.

6.4 Miscellaneous

TRAFFIC STUDY BY DONALD VEAL CONSULTANTS

Preliminary discussions with Donald Veal (Donald Veal Consultants) confirmed that the impacts of this recreational ground on traffic have not been considered in the draft traffic study that is currently in with SoC for comments. Based on this, we have not allowed to discuss any traffic related issues or potential upgrades to the existing road network.

WGE recommends traffic generation from the ultimate Stage 4 development is investigated to ensure safe movement of vehicles during peak times to / from the sports grounds.

SOUTHERN ACCESS ROAD

Based on WGE understanding, an access road is to be provided within the future short to medium term development located south of Lot 1.

WGE advises that the location of this access road should be subject to future traffic planning. In addition, WGE notes that the impacts of traffic generated off the proposed car parks should be assessed in conjunction to future traffic movements if shared access is proposed.

7.1 Existing

Based on WC Water As-constructed information (Figure 6), there is an existing 100mm diameter water main within Thomas Street and Charlotte Street that currently supplies reticulated water to the site. Subsequent discussions with SoC confirmed that all existing facilities (Bowling Club, Football Changerooms and Community Centre) are currently being serviced with metered scheme water. SoC has also confirmed that they presently own and use the standpipe located within Charlotte Street.

7.2 Reticulated Water

Preliminary servicing advice from WC indicates that there is capacity to service both the Proposed Sports Facility Building and the Future Toilets/Changerooms via extension of internal water plumbing, subject to formal approvals, timing and ensuring there is adequate operating water pressure.

8 Power Supply

8.1 General

It is our understanding that the 3 lots that make up the precinct (Lots 67, 40 & 1) will be amalgamated into 1 lot. We have consulted the Western Power Distribution Facilities Infrastructure System (DFIS), which seems out of date as the system does not indicate the switchgear and transformer on the site. We have therefore made use of site photographs and our knowledge of WP design and construction practices.

The stages referred to below are based on GA drawings number CDo1 to CDo4 (Revisions D) dated 22/11/2011.

As per discussion with GA, WGE notes that the estimated costs provided below omit lighting supply and installation costs (as significant input are required from the various sporting clubs to determine their lighting requirements with respect to the level of competition etc). As such, only the costs to upgrade power capacity to service the proposed lighting have been allowed.

Existing Power Supply and Demand

Lot 40 is currently supplied by a recently installed 315KVa (430A/ph) "sole use" Transformer. The transformer supplies the Site Main Switchboard (SMSB) adjacent to the Football Clubrooms which in turn supplies several sub-circuits. We estimate the existing power demand to be in the vicinity of 80A/ph. For the purposes of this report, it is assumed that the full capacity of the Transformer is available to the Sports Precinct. Whilst the capacity may be available to the precinct, there may be some minor capacity upgrade costs payable to Western Power when future stages require energisation.

Lot 67 is current supplied from the overhead low voltage network in Thomas Street. This supply terminates in a free standing Site Main Switchboard, which supplies the Community Centre. We estimate the existing power demand to be in the vicinity of 100A/ph.

8.2 Stage 1

Assuming the lots will be amalgamated, the existing supply to Lot 67 will have to be removed, as per Western Australia Electrical Requirements.

The additional infrastructure proposed for Stage 1 of the development, present an additional load of approximately 100A/ph. The additional load as well as the removal of the supply to Lot 67, will require that a new SMSB be established contiguous with the Transformer/Switchgear site. The new SMSB will supply the existing SMSB'S on lots 40 and 67.

Assuming a diversity factor of 80%, the max demand for the site will be approximately 225A/ph, which is well within the transformer supply capacity.

In addition to the new SMSB, new sub-main cabling will be required to supply the old SMSB's. It is also recommended that a pit and conduit network be established, which would provide a suitable route for future cabling to other areas of the site.

The cost estimate for the above will be in the vicinity of \$ 50 000 to \$60 000, and includes possible WP charges of \$ 10 000.

8.3 Stage 2

The additional infrastructure proposed for Stage 2 of the development, presents an additional load of approximately 135A/ph. New sub-main cabling will be required, to supply the new infrastructure, but the cost thereof will be included in the new building and lighting costs.

Assuming a diversity factor of 75%, the max demand for the site will be approximately 310A/ph, which is well within the supply capacity.

8.4 Stage 3

The additional infrastructure proposed for Stage 3 of the development, presents an additional load of approximately 150A/ph. New sub-main cabling will be required, to supply the new infrastructure, but the cost thereof will be included in the new building and lighting costs.

Assuming a diversity factor of 70%, the max demand for the site will be approximately 400A/ph, which is within the supply capacity.

8.5 Stage 4

The additional infrastructure proposed for Stage 4 is likely to be in the vicinity of 100 to 150A/ph. This will largely depend on the nature and size of the proposed indoor sports centre. Whilst the additional load is likely to exceed the supply capacity, the proposed timeframe (17 to 20 years) does not allow for an accurate prediction of the likely upgrade costs. In today's terms however, the likely costs of upgrading the transformer, are in the vicinity of \$30,000 to \$50,000. This cost is likely to be subsidised by WP, but this depends on the supply capacity in the adjacent area, as well as the likely power usage of the facility.

In summary, majority of the infrastructure proposed on the draft Master Plan appear to be adequate.

Wood and Grieve suggest the following points be considered when finalising the design:

1. Earthworks requirements of Lot 1 shall be examined if the proposed drainage swale along the eastern edge of Lot 1 is to be retained.
2. Investigate the interim and ultimate sewer servicing of the Future Toilets / Changerooms proposed in Lot 1.
3. Undertake geotechnical, groundwater and landscape investigations prior to detail design.



Figure 1 – Gresley Abas, Draft Master Plan (Stages 1, 2, 3 & 4)



Boyanup Memorial Park Sport and Recreation Ground

Stage 1 (2012-2016)

DRAFT



job number: 0811-G
issue date: 06/02/2013
revision: F
drawing number: cd01



pedestrian access
 bowls expansion

new cricket practice nets
 vehicle entry

heritage tree avenue and pedestrian gates to be retained
 pedestrian access
 new expanded hardcourts

new parking
 expand parking

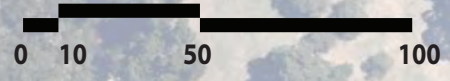
shallow drain with culverted pedestrian bridges

Pathways to be located to provide hard edge separation between development and foreshore protection area.
 Selected direct access to be provided to foreshore from path where safe for public and environmental impacts minimal

establish training area grass

existing tree line to be managed to allow viewing opportunity to proposed hockey

relocate hockey to new lit field
 sustainable turf options to be investigated



Boyanup Memorial Park Sport and Recreation Ground





future pedestrian link

Fence to precinct - consider need for and type of fencing in regard to obstruction of flood flows

settling pond/ drainage collector strategically located within existing cleared area at detailed design stage

perimeter parking expanded

stage 2 sports facility building with multi-viewing opportunity

potential hardcourt expansion if required

swale/ culvert

Pathways to be located to provide hard edge separation between development and foreshore protection area.

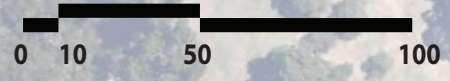
Selected direct access to be provided to foreshore from path where safe for public and environmental impacts minimal

sustainable landscape buffer

new playground

drainage swale strategically located at detailed design stage in consultation with the Department of Water

multi-use sports field subject to future use determination (stage 1)



future pedestrian link

settling pond/ drainage collector strategically located within existing cleared area at detailed design stage

future building expansion

community centre parking expanded as required

indoor/ covered sports area needs considered in future

swale/ culvert

multi-use sports field subject to future use determination

drainage swale strategically located at detailed design stage in consultation with the Department of Water

0 10 50 100

sustainable landscape buffer

Fence to precinct - consider need for and type of fencing in regard to obstruction of flood flows

future soccer

sustainable turf options to be investigated future soccer

Pathways to be located to provide hard edge separation between development and foreshore protection area.

future toilets/ changerooms

Selected direct access to be provided to foreshore from path where safe for public and environmental impacts minimal

future access road (to be determined)

sustainable landscape buffer, to be implemented in regard to spectator shade, visual amenity and turf growing requirements





Figure 2 – Thompson Surveying Consultants, Feature Survey

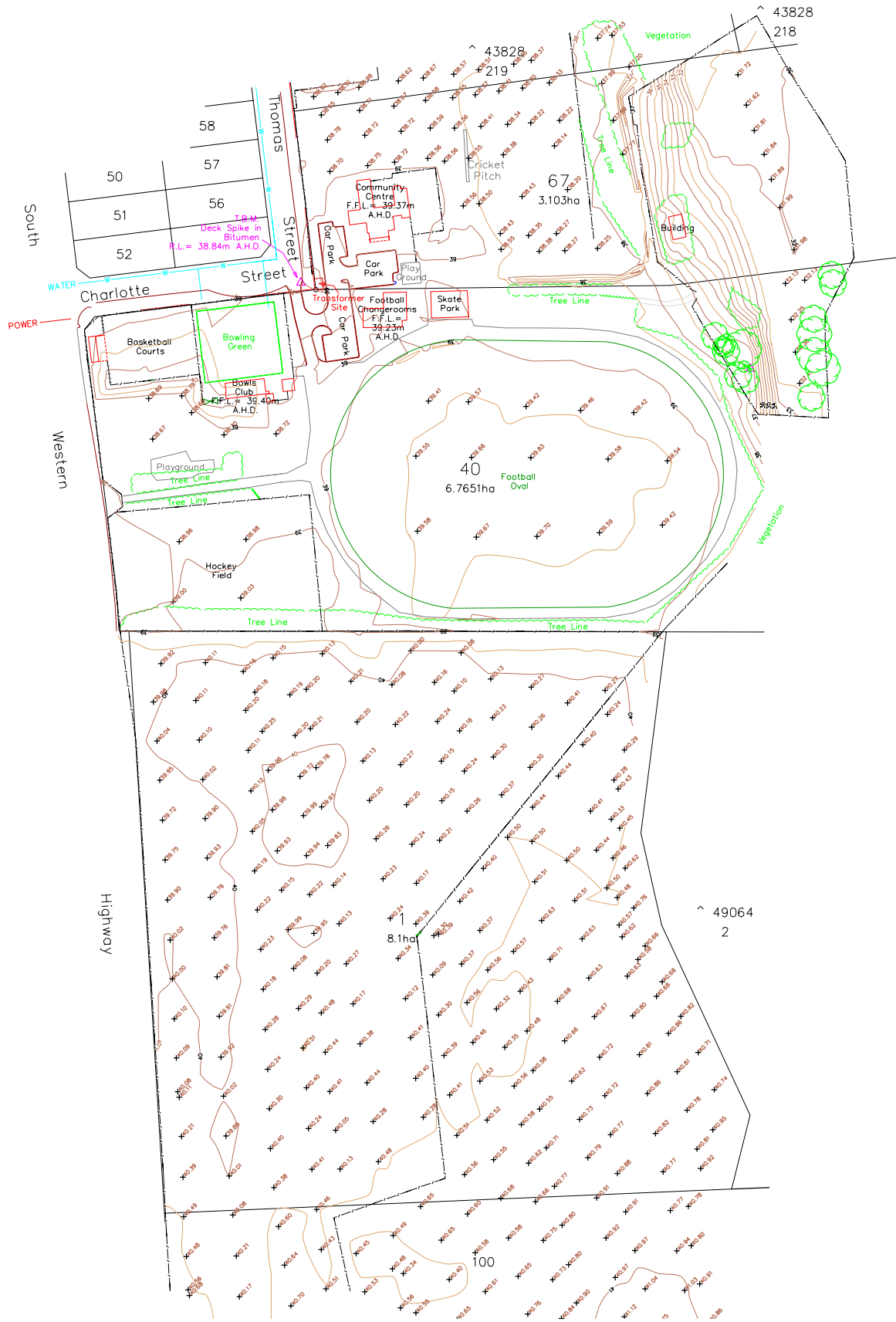


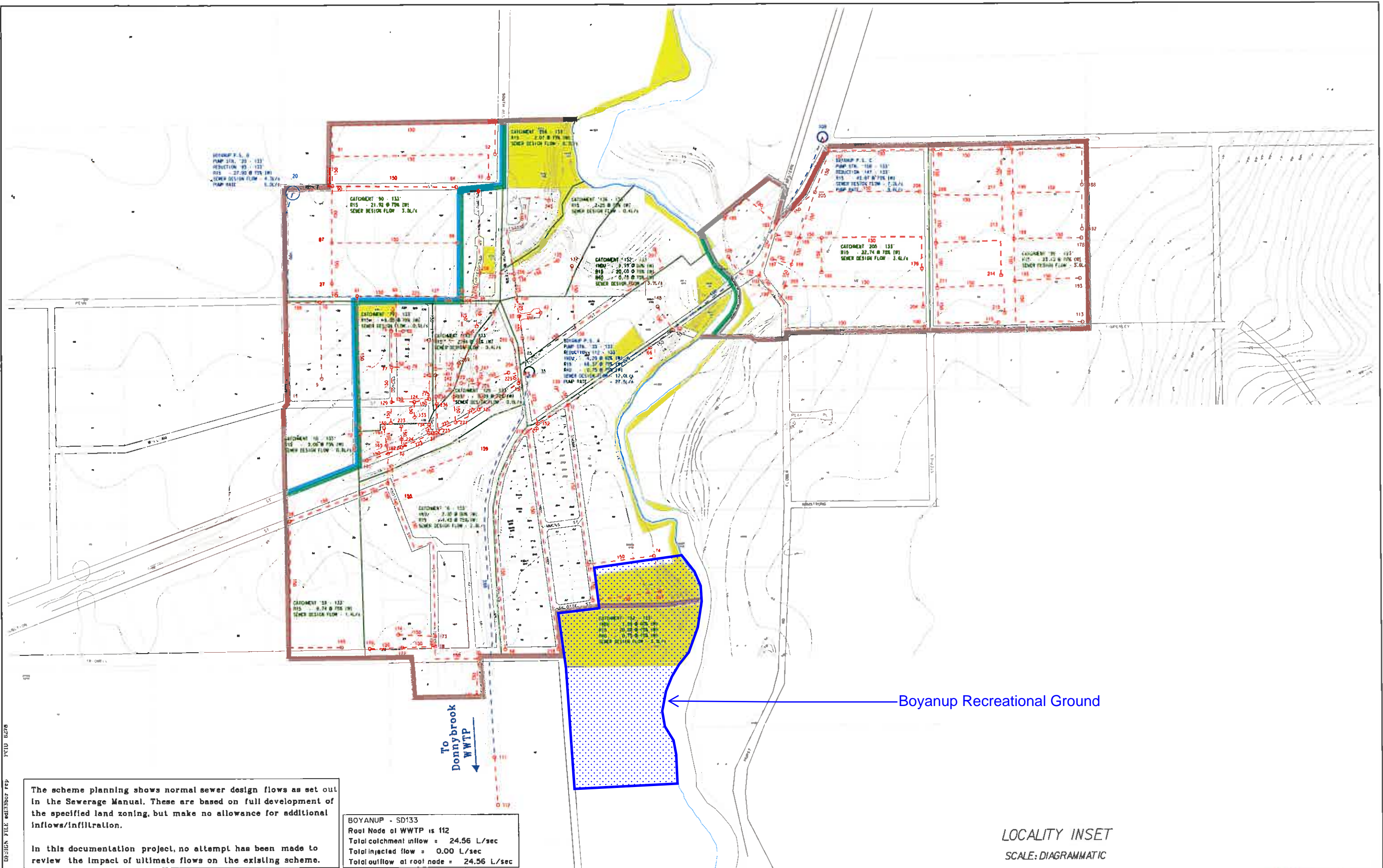


Figure 3 – Department of Water, 0.5m Contours Plan





Figure 4 – Water Corporation, Sewer Scheme Plan



Boyanup Recreational Ground

The scheme planning shows normal sewer design flows as set out in the Sewerage Manual. These are based on full development of the specified land zoning, but make no allowance for additional inflows/infiltration.

In this documentation project, no attempt has been made to review the impact of ultimate flows on the existing scheme.

BOYANUP - SD133
 Root Node of WWTP is 112
 Total catchment inflow = 24.56 L/sec
 Total injected flow = 0.00 L/sec
 Total outflow at root node = 24.56 L/sec

LOCALITY INSET
 SCALE: DIAGRAMMATIC

THE INFORMATION ON THIS PLAN IS BASED ON THE BEST DATA AVAILABLE AT DATE OF PRINTING AND IS SUBJECT TO ONGOING REVIEW AND AMENDMENT. NO RESPONSIBILITY IS ACCEPTED BY THE WATER CORPORATION FOR ACCURACY OF DATA SUPPLIED BY EXTERNAL AGENCIES.

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PRELIMINARY

LEGEND	
	EXISTING PUMPING STATION
	EXISTING PRESSURE MAIN
	EXISTING GRAVITY SEWER
	PROPOSED PUMPING STATION
	PROPOSED PRESSURE MAIN
	PROPOSED GRAVITY SEWER
	PARKS AND PUBLIC OPEN SPACE
	EXISTING SEWERED AREAS
	EXISTING NODE CATCHMENT
	P.S. AND SEWER CATCHMENTS
	SEWER DISTRICT CATCHMENT
	WWTP CATCHMENT

NOTATION	
	R15 100 x 4 @ 75% (W)
	R15 150 x 4 @ 75% (W)
	R15 200 x 4 @ 75% (W)
	R15 250 x 4 @ 75% (W)
	R15 300 x 4 @ 75% (W)
	R15 350 x 4 @ 75% (W)
	R15 400 x 4 @ 75% (W)
	R15 450 x 4 @ 75% (W)
	R15 500 x 4 @ 75% (W)
	R15 550 x 4 @ 75% (W)
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	R15 750 x 4 @ 75% (W)
	R15 800 x 4 @ 75% (W)
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Figure 5 – Water Corporation, Sewer As-Constructed Plan

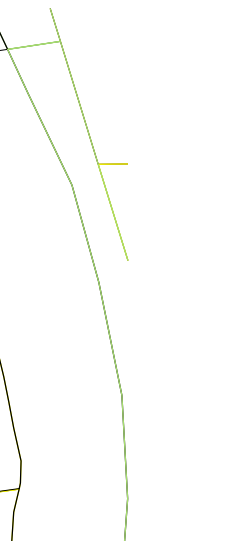
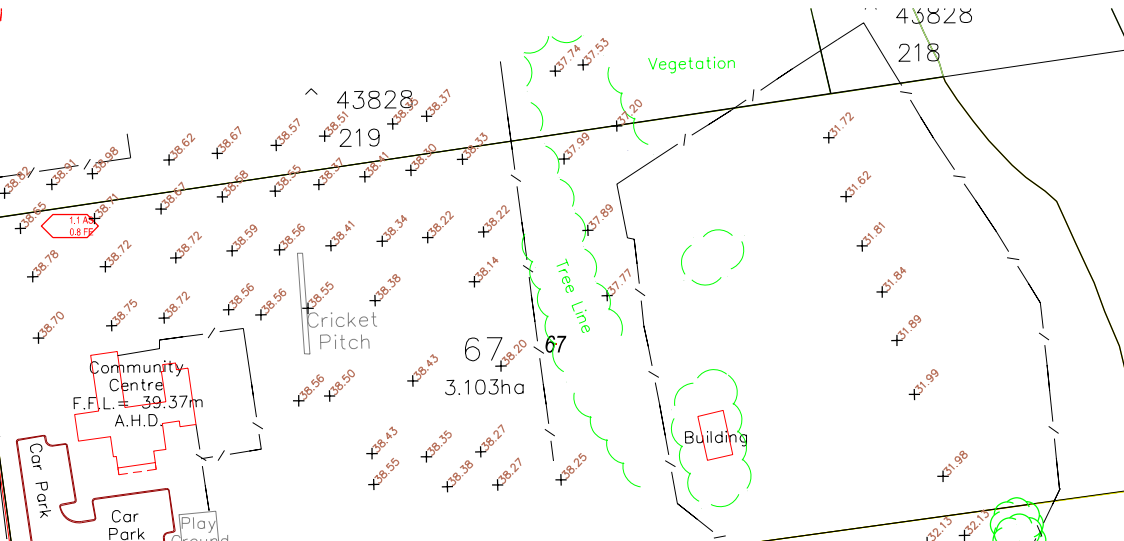
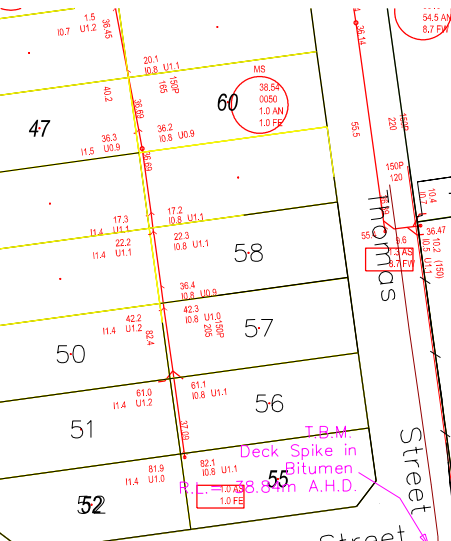




Figure 6 – Water Corporation, Water As-Constructed Plan





Figure 7 – Shire of Capel, Drainage As-Constructed Plans



Appendix A – District Water Management Plan for Shire of Capel (Extract)

4.3.1.1 Design Criteria

The key design criteria that will be adopted to maintain stormwater quality include:

- Treat all runoff prior to discharge by retaining the 1 year – 1 hour ARI events on site as close to source as possible.
- Apply appropriate structural and non-structural measures to reduce applied nutrient loads.
- Where surface water quality treatment is used, the surface area of bio-treatment structures should be a minimum of 2% of the connected impervious area.
- Surface water quality treatment structures should not be located within the foreshore reserve.

In addition to the general criteria above, all Greenfields developments and the industrial Greenfield developments are required to treat runoff with Gross Pollutant Traps (GPTs) prior to discharge to basins or offsite. Commercial infill developments are required to treat runoff with sediment traps prior to discharge into the council system.

4.3.2 Stormwater Quantity

Stormwater retention and detention structures must be designed in accordance with the *Stormwater Management Manual for Western Australia* (DoW 2007) and *Australian Rainfall and Runoff* (Engineers Australia 1997). In addition, structures must comply with current SoC Drainage Policies.

4.3.2.1 Design Criteria

The key design criteria that will be adopted to manage stormwater quantity include:

- Retain the 1 year – 1 hour ARI event on site, preferably as close to source as possible.
- Detain flows from the 5 year ARI storm event through to the 100 year ARI storm event to maintain pre-development peak flow rates.
- Minor roads remain passable in the 5 year ARI storm event.
- Major roads remain passable during 100 year ARI storm event.
- Habitable floor levels should have a clearance from the 100 year ARI water level in flood detention structures and the Capel River of 0.5m.
- Habitable floor levels should have a clearance from the 100 year ARI water level within roads of 0.3m.

Small urban infill developments, some smaller urban infill developments and commercial infill developments are not anticipated to contain POS areas and are unlikely to accommodate flood detention structures within the development area. Those developments that do not contain POS are consequently not required to “detain flows from the 5 year ARI storm even through to the 100 year ARI storm event.” Stormwater quantity criteria regarding the possibility of minor roads and major roads are not applicable to developments that do not contain any road reserves.

land has the potential to mobilise nutrients introduced by former land uses, it is important that groundwater is adequately managed to minimise the risk to downstream receiving environments.

The *Stormwater Management Guidelines - Capel Townsite* (Opus 2007) has provided an overarching philosophy for groundwater management in the Capel Townsite. These have been considered during development of the criteria proposed in **Section 4.3.1**.

4.2.1 Design Criteria

The adopted principles for best practice management of groundwater levels and quality are:

- Minimise changes to the underlying groundwater levels as a result of development.
- Habitable floor levels should have a clearance from the Annual Average Maximum Groundwater Level (AAMGL) or Controlled Groundwater Level (CGL) of at least 1.2m.
- Where subsoil drainage is proposed, the CGL can be set equal to the AAMGL or at the clay layer where the AAMGL is below the clay layer.
- Habitable floor levels should have a clearance from the phreatic groundwater surface of at least 0.8m.
- Minimise the risk of nutrient enrichment of the Capel River and other downstream receiving surface water bodies from groundwater sources.
- The groundwater leaving the study area should at least be the same, or better, than the water entering the study area.

As indicated, small urban infill developments of less than five lots, some urban infill developments and some commercial infill developments are not anticipated to include POS. Additionally, it is unlikely that groundwater monitoring bores will be installed for small scale and single lot developments making it difficult to demonstrate compliance with criteria concerning groundwater quality (see **Section 10** for more information regarding groundwater monitoring). Therefore, whilst these developments are not required to demonstrate compliance with the design criteria that requires groundwater leaving the study area to be "at least the same, or better, than the water entering the study site," developers must be able to demonstrate that treatment of groundwater runoff and/or groundwater leaving the site has been considered.

4.3 Stormwater Management

The overall guiding document for development of stormwater management strategies within urban areas is the *Stormwater Management Manual for Western Australia* (DoW 2007); with the *Decision Process for Stormwater Management in WA* (DoW 2009) providing guidance as to how urban development can achieve compliance with the objectives, principles and delivery approach outlined in the *Stormwater Management Manual of WA*. The above documents and the *Stormwater Management Guidelines - Capel Townsite CBD* (Opus 2007) provide guidance to define the specific objectives and design measures for stormwater management within the townsite.

4.3.1 Stormwater Quality

Water quality treatment systems and water sensitive urban design structures must be designed in accordance with the *Stormwater Management Manual for Western Australia* (DoW 2007) and *Australian Runoff Quality* (Engineers Australia 2006). *Better Urban Water Management* (WAPC 2008) advocates a water quality management principle where existing surface and groundwater quality be maintained as a minimum, and preferably improved prior to discharge from the development area. Through consideration of these guidelines, the primary objective for the Capel Townsite is to avoid further deterioration of water quality within the Capel River.

4 Design Criteria and Objectives

This section outlines the objectives and design criteria that this DWMS and future management strategies must achieve. The objectives and design criteria are both general water management philosophies that reflect state-wide principles and are site specific, taking into account the local environment. The water management strategy covers all aspects of water use, including stormwater management, groundwater management and water consumption.

4.1 Water Conservation

It is widely thought that the local climate is undergoing a drying trend, and that as the Shire's population grows and demands for potable water sources increase, significant attention should be focused on the manner in which the resources currently available are utilised.

This consideration is acknowledged and therefore use of water within the development will be minimised wherever possible. This can be accomplished through minimising water requirements within POS areas. In this regard, the DoW recommends a target of 7500kL/ha/year of water be adopted for irrigation of POS areas.

Individual households can also contribute to water conservation. The state water strategy has set a water consumption target of 100kL/person/year (total household consumption). Compliance with this target is required by the Shire of Capel and further detail concerning the implementation of this target is provided in **Section 5**.

4.1.1 Design Criteria

The design objectives for water conservation are:

- Minimise water requirements for establishment of POS.
- Minimise water requirements for POS maintenance.
- Achieve a target of 7500kL/ha/year of water is used for irrigation of POS areas.
- Minimise net use of water by maximising fit-for-purpose use.
- Achieve a water consumption target of 100kL/person/year (total household consumption).

Small urban infill developments of less than five lots and some urban infill developments are not anticipated to contain POS areas. In this instance, all design criteria pertaining to water conservation within POS are not applicable. These criteria are also not applicable for commercial infill developments that do not contain POS areas. The household water consumption target applies to all development categories, though demonstration of compliance for small urban infill developments, commercial developments and the industrial Greenfield development shall differ, as detailed in **Section 5**.

4.2 Groundwater Management

Developments have the potential to alter groundwater levels through a combination of reduced infiltration capacity (more impermeable areas such as roads and houses) and altered extraction rates (bores used for irrigation and reduced uptake due to tree clearance). It is important that the pre-development groundwater levels are maintained as any alteration could impact on the environment; particularly for downstream surface water body recharge and to support groundwater ecosystems.

Given that residential developments can have implications for the types and quantity of pollutants released to the local surface water and groundwater, and that the work undertaken to develop the

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Boyanup Memorial Park Sport and Recreation Ground Masterplan Report

Appendix 3: Cost Plan



mcgarry associates

Quantity Surveyors & Construction Cost Consultants

MGA11030

01 December 2011

Attn: Ben Price (by email: Ben@gresleyabas.com.au)

Gresley Abas
1/816 Hay Street
Perth WA 6000

Dear Ben

**BOYANUP MEMORIAL PARK SPORTS AND RECREATION GROUND - MASTERPLAN
PROPOSED 'ORDER OF MAGNITUDE' ESTIMATE OF COSTS – REVISED STAGING**

Further to your request, we have amended our 'order of magnitude' estimate of cost dated 23.09.11 for the Boyanup Recreation Ground Masterplan proposals so as to reflect the Client's revised staging requirements as shown on your masterplan drawings, numbered cd01 – cd04, all revision D.

This revised estimate should be considered as a revision to our earlier estimate and as such should be read in conjunction with our letter and estimate dated 23.09.11

Basis of Estimate

Our estimate of costs has been based upon measurements and information extracted in as much detail as possible from the aforementioned drawings.

However, we wish to emphasise that the estimate is a 'high level' estimate which results in indicative order of magnitude costs. Although measurement has been undertaken, and estimate rates and prices compiled by reference to similar recent projects, published cost guides and industry enquiries, the items included in this estimate are presented as global items for work sections within each stage of the intended works.

We therefore recommend that detailed elemental estimates should be prepared for each work section within the proposed stages of the masterplan as the design is developed so as to provide more accurate cost estimates of the proposed works.

Scope of Works

The scope of work is described in detail under the heading of each proposed stage in the attached estimate. In summary, the scope of the work comprises:

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1. Stage 1:
 - i. Construction of new Pavilion No 1 (change rooms, gym, stores, etc) and new Function / Meeting Room Building; both buildings built off a raised podium;
 - ii. Provision of site services to the above buildings. Services comprise water supply, sewer extension and connection including pump station, and power connection from site switchboard (see next);
 - iii. Upgrading the site switchboard located at the corner of Charlotte and Thomas Streets, arising from the consolidation of the various land Lots on which Memorial Park is located and the increased power loads due to the proposed works within the current and future stages of the masterplan;
 - iv. Upgrading the floodlights to the Football Oval to a semi-professional lighting standard (Note: existing poles to be retained on instruction of the Client);
 - v. Provision of a bitumen paved access road and parking to part of the perimeter of the Football Oval
 - vi. Stormwater drainage to the new road and parking areas, upgrading existing stormwater infrastructure, forming a cut-off drain around the Football Oval and forming a drainage basin in Lot 1;
 - vii. Limited landscape development, including tree removal as required and new planting;
 - viii. A provisional budget allowance for civils works that are undefined at this time including re-contouring of site, excavation and replacement of road sub-grades, dewatering, management of any acid sulphate soils that are encountered, etc
2. Stage 2:
 - i. Extend bowls clubhouse, including re-furbishing existing building;
 - ii. Construction of new synthetic bowls green (in location of former basketball courts), including floodlighting to a mid-level standard;
 - iii. Construction of a bitumen paved parking area adjacent to the bowls club house, including stormwater drainage;
 - iv. Construction of 2No multi-marked synthetic courts, including floodlighting to mid-grade standard;
 - v. Establishment of a new grass hockey pitch including sub-soil drainage and irrigation. Also includes for floodlighting to amateur standard.
 - vi. Forming a grassed training area south of the Football Oval, including sub-soil drainage and irrigation;
 - vii. Upgrading bore pumps, providing storage capacity and laying primary reticulation to serve hockey pitch / training area;
 - viii. Expand bitumen paved parking area adjacent to new pavilion buildings and hockey pitch, including stormwater drainage;
 - ix. Lay concrete footpath from entrance to Park at corner of Charlotte and Thomas Streets through to new pavilion buildings and around Oval;
 - x. Construction of 2No cricket practice nets;
 - xi. Landscape development, including tree pruning/removal as required and new planting;
 - xii. A provisional budget allowance for civils works that are undefined at this time including re-contouring of site, excavation and replacement of road sub-grades, dewatering, management of any acid sulphate soils that are encountered, etc



Quantity Surveyors & Construction Cost Consultants

3. Stage 3:
 - i. Construction of new Pavilion No 2 (change rooms)
 - ii. Provision of site services to the above building, comprising water supply, sewer connection, upgrading of pumps to pump station previously installed, and power connection;
 - iii. Construction of a fenced playground, including provision of play equipment;
 - iv. Construction of 1 No additional multi-marked synthetic court, including floodlighting to mid-grade standard;
 - v. Extend bitumen paved access road and parking to part of the perimeter of the Football Oval including associated stormwater drainage;
 - vi. Extension of the concrete footpath to a pedestrian entrance off the South West Highway, from the Football Oval part way to new parking on the Southern boundary (see later) and from the Football Oval northwards through 'wet-land' development (see later) to a pedestrian link;
 - vii. Extension of the grassed sports field, including sub-soil drainage and irrigation, to provide for a multi-use field, including floodlighting to an amateur standard;
 - viii. Extension of the power infrastructure to the Southern end of Memorial Park to provide power for floodlighting and future toilets/change rooms (see next Stage);
 - ix. Establishing sustainable landscape buffer zone to part of the Western boundary;
 - x. Establishing native vegetation planting, 'wet-land' development, drainage swales and settling ponds to the Eastern boundary of the Park, both South and North of the Football Oval, together with a linking swale around the part perimeter of the Oval;
 - xi. A provisional budget allowance for civils works that are undefined at this time including re-contouring of site, excavation and replacement of road sub-grades, dewatering, management of any acid sulphate soils that are encountered, etc
4. Stage 4:
 - i. Extension of the grassed sports field, including sub-soil drainage and irrigation, to provide for 2 No soccer pitches and extended multi-use field. Also includes floodlighting of the pitches and field to an amateur standard;
 - ii. Establishing new borehole, complete with pumps and storage, and laying primary reticulation to serve new multi-use field and soccer pitches;
 - iii. Construction of new toilet / change rooms building
 - iv. Provision of site services to the above building, comprising water supply, sewer connection, and power connection;
 - v. Construction of a bitumen paved road and parking area to the Southern boundary, including stormwater drainage;
 - vi. Extension of the concrete footpath Southwards to new parking on the Southern boundary;
 - vii. Establishing sustainable landscape buffer zones to the Southern and Western boundaries;
 - viii. Extending native vegetation planting, 'wet-land' development and drainage swales to the Eastern boundary of the Park;
 - ix. Expand bitumen paved parking area adjacent to current club house building, including stormwater drainage;
 - x. A provisional budget allowance for civils works that are undefined at this time including re-contouring of site, excavation and replacement of road sub-grades, dewatering, management of any acid sulphate soils that are encountered, etc



Staging

The following dates have been indicated for the proposed staging:

- Stage 1 – 2012 to 2016. Escalation has been calculated to an assumed average 'tender' date of June 2014. It is noted that the first aspects of the construction of Stage 1 (being the Pavilion No 1 and Function buildings plus associated infrastructural works) is planned for commencement earlier than June 2014 and accordingly escalation for this early construction works has been calculated to an assumed 'tender' date of September 2012 in the attached funding application estimate summary.
- Stage 2 – 2017 to 2021. Escalation has been calculated to an assumed average 'tender' date of June 2019.
- Stage 3 – 2022 to 2027. Escalation has been calculated to an assumed average 'tender' date of June 2025.
- Stage 4 – 2028 to 2032. Escalation has been calculated to an assumed average 'tender' date of June 2030.

Estimate

We advise that our estimate of the indicative order of magnitude costs for the proposed masterplan works is as follows:

Item	Stage 1	Stage 2	Stage 3	Stage 4
Net construction costs	\$ 2,216,000	\$ 2,697,000	\$ 1,791,000	\$ 2,955,000
Construction contingency (10%)	222,000	270,000	180,000	296,000
Professional fees (10%)	244,000	297,000	198,000	326,000
Predicted escalation (see 'Staging' above)	296,000	1,241,000	1,540,000	3,577,000
Total estimated cost (excl GST):	\$ 2,978,000	\$ 4,505,000	\$ 3,709,000	\$ 7,154,000

We have allowed a 10% design and construction contingency allowance at this time. Once design of individual sections of the works is developed further the percentage allowed for the contingency allowance may be progressively reduced. It would be normal at the time that the construction contract is entered into, for the budgeted contingency to be at the level of approximately 5%.

We have also allowed 10% for professional fees. It is intended that this allowance includes for all construction consultancy disciplines that will be required for the proposed scope of works.

Please note that both the additions for the contingency and professional fees have been applied across all items within the estimate at this time thus representing an 'averaged' allocation. We fully appreciate that some of the estimated items may not eventually attract either fees or contingencies; however there will be other estimate items that should attract higher allowances than have been made. Accordingly, it is important for the Client to appreciate that, at this very preliminary stage of estimating, the 'averaged' approach that we have adopted should not be adjusted by focusing on specific estimate items.



Clarifications and Exclusions

Please note the following clarifications, qualifications and exclusions to our estimate, as follows:

1. GST is **not** included in the estimated amount.
2. The estimate allows for the Boyanup location. Current market conditions suggest that traditional location factors are less significant due to the extremely competitive conditions. In future, market conditions may become less competitive again and location loadings may become more pronounced – this would require a re-evaluation of our estimate.
3. The estimates for the various buildings do **not** include any allowances for loose furniture, fittings and equipment.
4. The allowances for professional fees are for those fees associated with the design and construction of the buildings. The allowances do **not** include any other consultancy fees (such as, for example, legal or valuation fees), building licence fees, or any statutory charges.
5. No allowance has been included for significant unforeseen ground conditions, abnormal founding conditions, excavating in rock, contaminated soils, and the like over and above the provisional budget allowances made
6. The estimate assumes that contracts will be awarded following the receipt of competitive tenders.

We trust that we have interpreted your masterplan requirements accurately however should you have any queries or comments please contact the undersigned.

Yours sincerely

Kevin Parker
Associate

Encl

**BOYANUP MEMORIAL PARK SPORT AND RECREATION GROUND
MASTERPLAN ESTIMATE - SUMMARY**



Item No	Description	Unit	Indicative quantity	\$\$	Amount, \$
	<u>STAGE 1 (2012 - 2016)</u>				
1.1	Changerooms Pavilion No 1, including gym, stores, etc	m2	290	756,900	
1.2	Function/meeting room building	m2	155	359,600	
1.3	Roof over outdoor area	m2	205	56,300	
1.4 - 1.7	Form raised podium, approx 600mm high, for building platform; including retaining walls, ramps and tiered seating	m2	1,320	347,100	1,519,900
1.8 - 1.11	Provision of site services for new buildings, including water main sewer, sewer pump station and power supply from site switchboard	Item	1		173,600
1.12	Upgrade of site switchboard (per WGE estimate)	Item	1		66,000
1.13	Upgrade existing floodlights to football Oval to semi-pro standard (Note: based on advice received, upgrades usually involve new poles, foundations and cabling. However, Client advises that existing poles are suitable to be retained)	Item	1		108,600
1.14	New bitumen road and parking to part perimeter of oval; includes kerbing, road markings, etc	m2	2,150		178,500
1.15	Stormwater drainage to new roads and carparking to part perimeter of football oval, cut-off drains, drainage basin in Lot 1 and sundry other items (per WGE estimate).	Item	1		77,000
1.16	Landscaping, planting and tree removal/ pruning	Item	1		12,400
1.17	Budget allowance for civils works including site re-contouring, replacement of road sub-grades, dewatering, ASS management, etc	Item	1		80,000

**BOYANUP MEMORIAL PARK SPORT AND RECREATION GROUND
MASTERPLAN ESTIMATE - SUMMARY**



Item No	Description	Unit	Indicative quantity	\$\$	Amount, \$
1.18	Possible change of use for existing changerooms - not included	Item	1		excluded
	Sub-total:			\$	2,216,000
	Add Contingency		10%		222,000
				\$	2,438,000
	Add Professional fees		10%		244,000
				\$	2,682,000
	Add Predicted escalation to tender (Sept 11 - June 2014)		11%		296,000
	TOTAL - STAGE 1 (excluding GST):			\$	2,978,000

**BOYANUP MEMORIAL PARK SPORT AND RECREATION GROUND
MASTERPLAN ESTIMATE - SUMMARY**



Item No	Description	Unit	Indicative quantity	\$\$	Amount, \$
<u>STAGE 2 (2017 - 2021)</u>					
2.1	Extend bowls clubhouse, including changeroom/toilet areas. Allow for re-furbishing existing clubhouse. (Stated area is both new and existing)	m2	600		942,000
2.2	Construct new synthetic bowls green in area formerly occupied by multi-courts, including breaking-up and removing old hard surfaces	m2	1,800	216,000	
2.3	Floodlights to new bowls green to mid-level standard, including poles, foundations and cabling	Item	1	49,500	265,500
2.4	Synthetic multi-marked court, including base preparation, in location of old hockey field	No	2	100,000	
2.5	Upgrade existing floodlights to 2No new multi-purpose courts to mid-grade standard, including new poles, foundations and cabling	Item	1	45,000	145,000
2.6	Establish new grassed area for hockey pitch, including sub-soil drainage and irrigation	m2	8,800	264,000	
2.7	New floodlights to new hockey pitch to amateur standard, including new poles, foundations and cabling	Item	1	152,500	416,500
2.8	Establish new grassed area for training, including sub-soil drainage and irrigation	m2	10,850		325,500
2.9	Upgrade pumps to existing borehole; provide storage and lay primary reticulation to serve new hockey pitch / training area	Item	1		110,000
2.10	Expanded bitumen parking adjacent to Stage 1 Pavilion; includes kerbing, road markings and drainage	m2	1,090	94,900	
2.11	Stormwater drainage to carpark (per WGE estimate)	Item	1	16,500	111,400
2.12	New bitumen parking adjacent to bowls clubhouse; includes kerbing, road markings and drainage	m2	1,520	126,100	
2.13	Stormwater drainage to extended carpark (per WGE estimate)	Item	1	11,000	137,100

**BOYANUP MEMORIAL PARK SPORT AND RECREATION GROUND
MASTERPLAN ESTIMATE - SUMMARY**



Item No	Description	Unit	Indicative quantity	\$\$	Amount, \$
2.14	1.4m wide concrete footpath from entrance to around pavilions and around Oval	m	930	93,000	
2.15	Culverted bridge for pedestrian footpath crossing over cut-off drain	No	3	6,000	99,000
2.16	Landscaping, planting and tree removal/ pruning	Item	1	17,000	17,000
2.17	Cricket practice nets	No	2	15,000	30,000
2.18	Budget allowance for civils works including site re-contouring, replacement of road sub-grades, dewatering, ASS management, etc	Item	1		98,000
	Sub-total:			\$	2,697,000
	Add Contingency		10%		270,000
				\$	2,967,000
	Add Professional fees		10%		297,000
				\$	3,264,000
	Add Predicted escalation to tender (Sept 11 - June 2019)		38%		1,241,000
	TOTAL - STAGE 2 (excluding GST):			\$	4,505,000

**BOYANUP MEMORIAL PARK SPORT AND RECREATION GROUND
MASTERPLAN ESTIMATE - SUMMARY**



Item No	Description	Unit	Indicative quantity	\$\$	Amount, \$
<u>STAGE 3 (2022 - 2027)</u>					
3.1	Changerooms Pavilion No 2	m2	196	511,600	
3.2 - 3.5	Provision of site services for Pavilion No 2, including water main, sewer, upgrading sewer pumps, and power supply from Pavilion No 1 local switchboard	Item	1	12,900	524,500
3.6	Budget allowance for new fenced playground area, including play equipment	Item	1		120,000
3.7	Synthetic multi-marked court, including base preparation, in location of old hockey field	No	1	50,000	
3.8	Extend upgrade of existing floodlights to new multi-purpose court to mid-grade standard, including new poles, foundations and cabling	Item	1	25,000	75,000
3.9	New bitumen road and parking to part perimeter of Oval; includes kerbing, road markings and drainage	m2	2,230	185,100	
3.10	Stormwater drainage to new roads and carparking to part perimeter of football oval (per WGE estimate).	Item	1	16,500	201,600
3.11	1.4m wide concrete footpath from existing pathway to new entrance on Western boundary	m	110	11,000	
3.12	1.4m wide concrete footpath network from existing Oval pathway, in Southern direction	m	250	25,000	
3.13	1.4m wide concrete footpath network from existing Oval pathway to new pedestrian link North of site	m	1,090	109,000	145,000
3.14	Extend new grassed area for balance of multi-use sports field, including sub-soil drainage and irrigation	m2	2,720	70,800	
3.15	Extend primary reticulation to increased sportsfield area	Item	1	8,300	
3.16	Floodlights to new multi-use field to amateur standard, including new poles, foundations and cabling	Item	1	126,000	

**BOYANUP MEMORIAL PARK SPORT AND RECREATION GROUND
MASTERPLAN ESTIMATE - SUMMARY**



Item No	Description	Unit	Indicative quantity	\$\$	Amount, \$
3.17	Power connection from upgraded site switchboard located on corner of Charlotte and Thomas Streets to floodlighting including provision of local switchboard	Item	1	97,300	302,400
3.18	Sustainable landscaped buffer zone to West boundary of new hockery field	m2	1,000	26,000	
3.19	Native vegetation, drainage swales and 'wet-land' planting to East side of site	m2	1,800	42,000	
3.20	Form linking swale around Eastern side of Football Oval	m	230	11,500	
3.21	Native vegetation, settling ponds and 'wet-land' planting to North-East side of Oval	m2	11,700	293,000	372,500
3.22	Budget allowance for civils works including site re-contouring, replacement of road sub-grades, dewatering, ASS management, etc	Item	1		50,000
	Sub-total:			\$	1,791,000
	Add Contingency		10%		180,000
				\$	1,971,000
	Add Professional fees		10%		198,000
				\$	2,169,000
	Add Predicted escalation to tender (Sept 11 - June 2025)		71%		1,540,000
	TOTAL - STAGE 3 (excluding GST):			\$	3,709,000

**BOYANUP MEMORIAL PARK SPORT AND RECREATION GROUND
MASTERPLAN ESTIMATE - SUMMARY**



Item No	Description	Unit	Indicative quantity	\$\$	Amount, \$
<u>STAGE 4 (2028 - 2032)</u>					
4.1	Establish new grassed area for balance of multi-use sports field and soccer pitches, including sub-soil drainage and irrigation	m2	34,100	886,600	
4.2	Establish additional borehole, complete with pumps, storage and extend primarily reticulation to completed sportsfield area	Item	1	275,000	
4.3	Floodlights to soccer pitches to amateur standard, including new poles, foundations and cabling	Item	1	210,000	1,371,600
4.4	Future toilets & changerooms	m2	290	757,000	
4.5 - 4.6	Provision of site services for future toilets and changerooms, including water main, sewer and power	Item	1	14,000	771,000
4.7	Future bitumen road and parking to part Southern boundary; includes kerbing, road markings and drainage	m2	4,140	344,000	
4.8	Stormwater drainage to road and carpark on Southern boundary (per WGE estimate)	Item	1	16,500	360,500
4.9	1.4m wide concrete footpath network extension down to new parking on Southern boundary	m	380	93,000	38,000
4.10	Sustainable landscaped buffer zone to South and West boundaries of new sports field	m2	5,550	144,400	
4.11	Extension of native vegetation, drainage swales and 'wet-land' planting to East side of sportsfield	m2	6,600	152,000	296,400
4.12	Expanded bitumen parking North of existing clubrooms; includes kerbing, road markings and drainage	m2	430		37,500
4.13	Indoor / covered sports area - not included				0

**BOYANUP MEMORIAL PARK SPORT AND RECREATION GROUND
MASTERPLAN ESTIMATE - SUMMARY**



Item No	Description	Unit	Indicative quantity	\$\$	Amount, \$
4.14	Budget allowance for civils works including site re-contouring, replacement of road sub-grades, dewatering, ASS management, etc	Item	1		80,000
	Sub-total:			\$	2,955,000
	Add Contingency		10%		296,000
				\$	3,251,000
	Add Professional fees		10%		326,000
				\$	3,577,000
	Add Predicted escalation to tender (Sept 11 - June 2030)		100%		3,577,000
	TOTAL - STAGE 4 (excluding GST):			\$	7,154,000