



**Byford Traditional Infrastructure Development
Contribution Plan - Report No.4
February 2017**

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1. Introduction

1.1 Background

The Byford development area is located within the Shire of Serpentine Jarrahdale, and is generally bound by Thomas Road to the north, the existing Byford Townsite to the east, South Western Highway to the southeast, Cardup Siding Road to the south and Hopkinson Road to the west.

The Byford District Structure Plan (BSP) has been prepared to guide the preparation of more detailed local structure plans (LSPs) facilitating subdivision and development within the Byford area. Infrastructure and land for public purposes will be required to cater for this development.

In December 2013 the Shire approved the first Development Contribution Plan Report (DCP Report 1). The second Development Contribution Plan Report (DCP Report 2) was approved on 13 April 2015. The third Development Contribution Plan Report (DCP Report 3) was approved on 9 June 2016.

A copy of the Byford DSP Map is contained in Figure 1.

A copy of the Byford DCA Area is contained in Figure 2.

1.2 Purpose of Development Contribution Plan

This report has been prepared to set out in detail:

- The infrastructure, land and other items for which development contributions are to be collected;
- How land values are calculated and the valuation methodology applied;
- The cost estimates of infrastructure and other items;
- The periodic review of the cost estimates;
- The cost contribution rates applicable to individual precincts within the Byford development contribution area;
- The methodology to calculate development contributions applicable to landowners / developers and the operational aspects of the methodology;
- Principles for the priority and timing of infrastructure provision and land acquisition.
- The period of operation of the DCP;
- Various other operational matters; and
- Examples of how development contributions will be calculated.

1.3 Status

This DCP Report has been prepared pursuant to Clause 10.3.10 of the Shire of Serpentine Jarrahdale Town Planning Scheme No. 2 (TPS 2).

The report should be read in conjunction with Clause 10.3 and Appendix 16A of TPS 2 and any relevant precinct-level LSP. This DCP Report does not form part of TPS 2.

2. Infrastructure, Land and Other Items

This section of the DCP Report identifies the infrastructure, land and other items for which development contributions will be collected in Byford. These items include:

- District distributor and local roads playing a district function;
- Land for public open space and drainage;
- Land for district open space and drainage;
- Water monitoring costs; and
- Administration costs.

2.1 Land Value

Many of these items include a land component. To determine the total cost of the items, an estimate of land value therefore needs to be identified. Land for infrastructure is required in a number of land zones in the Byford Structure Plan, including but not limited to residential, retail, commercial, highway commercial and mixed-use areas. There is a requirement for two separate rates for 'Residential' and 'Mixed Use/Non-Residential'.

Standard Residential/Non-Standard Residential

This rate is based on current valuation advice for an indicative R20 zoned 5 hectare with no servicing constraints within the Byford DCA1 area. An analysis of remaining undeveloped land with DCA1 shows an average lot size of 4.82 in Precinct A thus supporting the continued use of 5 ha for the englobo valuation.

The rate for residential areas will be valued at \$53.50 per m² as from final adoption.

Non-Residential

This rate is based on a Mixed Use R60 zoned area within the planned commercial/town centre precincts within 'The Glades', 'Redgum Brook' and the 'Town Centre'. It has been assumed the typical land parcel is a regular shaped 5 hectare area which requires servicing but within close proximity to services so there are no major servicing constraints and no major geotechnical/environmental issues.

The rate for non-residential/mixed use areas will be valued at \$117.50 per m² as from final adoption.

Pursuant to Clause 10.3.11 of TPS 2, the cost estimate land value will be reviewed at least annually.

The net land value is to be determined in accordance with the definition of "value" in TPS 2 s.10.3.12 and having general regard to the International Valuation Standards Committee's definition of market value as adopted by the Australian Property Institute. To account for the direct transfer of land, the fair market value should be discounted by standard marketing costs including fees, commissions and advertising costs.

2.2 Roads

The upgrading, construction and land acquisition of the following roads is included within the DCP:

- Thomas Road;
- Abernethy Road;
- Orton Road New;
- Kardan Boulevard;
- San Simeon Boulevard;
- Doley Road; and
- Warrington Road.

Figure 3 provides a graphical representation of the general extent to which the roads will be upgraded and/or constructed through the DCP.

2.2.1 Thomas Road – District Distributor

Thomas Road borders a significant portion of the Byford DSP area to the south. Under the Metropolitan Region Scheme (MRS), the road is reserved as an Other Regional Road and is identified as a district distributor. The portion of Thomas Road abutting the Byford DSP is under control of the Shire.

The road currently exists, but will require changes in width, alignment and configuration to support development envisaged under the DSP in addition to increased regional traffic.

The width of the Thomas Road reserve will be 50m and the length for DCP responsibility is 3,280 metres and comprises an area of 16.40 ha.

The upgrade of Thomas Road will occur between the Tonkin Highway Metropolitan Region Scheme (MRS) Primary Regional Road Reserve and the railway reserve to the east. The 85% design of Thomas Road has been undertaken.

The following items are included within the DCP for Thomas Road:

- Land required to achieve a 50 metre wide road reserve;
- Earthworks for the unconstructed carriageway;
- The construction and upgrade of one carriageway;
- Associated drainage works including water sensitive urban design measures;
- Traffic control devices including the following intersection treatments:
 - Kardan Boulevard – construction of a channelised intersection, slip lanes and associated works;
 - San Simeon Boulevard – full cost of signalisation;
 - Plaistowe Boulevard – construction of channelised intersection slip lanes and associated works; and
 - Briggs Road – construction of channelised slip lanes and associated works.
- Shared paths;
- Utility removal, relocation and insertion; and
- Associated costs including design and management.

The total future development cost for Thomas Road is estimated at \$12,333,522. A MRWA grant of \$660,000 has been received towards design costs. It has been estimated that a two-third grant of \$8,222,348 will be provided by MRWA, which is subject to confirmation. A detailed breakdown of the costs is provided in Appendix A.

The following items are not included in the DCP for Thomas Road:

- Modifications to the current railway crossing configuration, as this may change in the future when detailed planning is undertaken by the Public Transport Authority for the future electrification of the railway line to Byford;
- Any upgrades to Thomas Road east of the railway crossing up to the dual carriageway near South Western Highway; and
- Any intersection treatment with Tonkin Highway. Tonkin Highway is a Primary Regional Road under the MRS and is a responsibility of MRWA.

2.2.2 Abernethy Road – Local Road

Abernethy Road is located centrally within the Byford DSP area, providing an east- west connection and linking in with the proposed expansion of the Byford Town Centre. Abernethy Road is a Shire controlled road and is not reserved under the MRS. The existing state of Abernethy Road is rural in nature, with a narrow single carriageway allowing for one lane in either direction. The road is not proposed to provide a direct connection to the future extension of Tonkin Highway and will ultimately become a cul-de-sac at this point.

The width of Abernethy Road will generally be 30m. The total length of the road is 2,800 metres.

The upgrade of Abernethy Road will occur between the Tonkin Highway MRS Primary Regional Road reserve and the railway crossing to the east. The portion of Abernethy Road adjacent to the Byford Trotting Complex will have half the cost of road widening, construction and upgrade borne by the DCP. The portion of Abernethy Road between Kardan Road and the cul-de-sac at Tonkin Highway will be retained as a single carriageway. The overall portion of costs borne by the DCP is 71.25%.

The following items are included in the DCP for Abernethy Road:

- Land required to achieve a road reserve up to 30 metres in width;
- Earthworks for the whole road reserve;
- Complete road construction based on a single lane split carriageway with central median;
- Associated drainage works including water sensitive urban design measures;
- Traffic control devices including the following intersection treatments:
 - San Simeon Boulevard – full cost of signalisation;
 - Kardan Boulevard – full cost of roundabout;
 - Doley Road – full cost of roundabout;
 - Briggs Road – full cost of roundabout; and,
 - Warrington Road – full cost of roundabout.
- Shared paths;
- Utility removal, relocation and insertion; and
- Associated costs including design and management. Completed works include amongst others the Briggs Street intersection.

Works to the value of \$2,913,532 have been completed. The total cost for the remaining section of Abernethy Road is estimated at \$ \$18,827,708. The DCP proportionate share 71.25% is \$ \$13,414,742. A detailed breakdown of the costs is provided in Appendix B.

The following items are not included in the DCP for Abernethy Road:

- Minor intersections treatments into Abernethy Road from the adjoining subdivisional road network. These will be subject to a standard truncation requirement;
- In accordance with normal subdivision cost apportionment, half the cost share associated with the portion of road adjacent to the Byford Trotting Complex is excluded from the DCP as it is the responsibility of future development within the Trotting Complex. The excluded 50% cost share includes the land for widening, earthworks, drainage, construction and associated works; and
- Modifications to the current railway crossing configuration; as this may change in the future when detailed planning is undertaken by the Public Transport Authority for the future electrification of the railway line to Byford.

2.2.3 Orton Road New – Local Road

Orton Road New is located in the southern portion of the DSP area, currently running east-west between Hopkinson Road and Warrington Road. Orton Road New is a Shire controlled road and is not reserved under the MRS.

The existing state of Orton Road New is rural in nature, with a narrow single carriageway allowing for one lane in either direction. The Byford DSP indicates that the road is to be realigned to the west of Doley Road and be extended from Warrington Road to Soldiers Road. Other changes to the alignment of the road are proposed towards Tonkin Highway where the road is proposed to connect into Tonkin Highway.

The width of Orton Road New will be up to 30m and the length to be completed is 2,840 metres. The upgrade and construction of Orton Road New will occur between the Tonkin Highway MRS Primary Regional Road reserve and Soldiers Road. The costs of the land for the Orton Road reserve will take account of the existing road reserve where possible.

The following items are included in the DCP for Orton Road New:

- Land required to achieve a road reserve up to 30 metres in width;
- Earthworks for the whole road reserve;
- Complete road construction based on a single lane split carriageway with central median;
- Associated drainage works including water sensitive urban design measures;
- Traffic control devices including the following intersection treatments:
 - Doley Road – full cost of roundabout;
 - Warrington Road – full cost of roundabout; and,
 - Soldiers Road – full cost of roundabout.
- Shared paths;
- Utility removal, relocation and insertion; and
- Associated costs including design and management.

The total cost for Orton Road New is estimated at \$10,164,238. A detailed breakdown of the costs is provided in Appendix A.

The following items are not included in the DCP for Orton Road New:

- Minor intersections treatments into Orton Road New from the adjoining subdivisional road network. These will be subject to a standard truncation requirement; and
- Any intersection treatment with Tonkin Highway. Tonkin Highway is a Primary Regional Road under the MRS and is a responsibility of Main Roads WA.

2.2.4 Kardan Boulevard – Local Road

Kardan Boulevard is located in the north-west portion of the DSP area, providing a north- south connection between Thomas Road and Abernethy Road. Construction of the road was proposed under the Byford DSP as it would provide an important connection for district traffic and public transport movements.

In light of Kardan Boulevard's role, the Shire required a road width of 25 metres from Abernethy Road to Fawcett Road and 30 metres from Fawcett Road to Thomas Road.

The construction of Kardan Boulevard is complete except for the upgrade of a culvert. The following items were included in the DCP for Kardan Boulevard:

- Land required over and above a standard 20 metre road reserve width to achieve a road reserve up to 30 metres in width;
- Earthworks for the whole road reserve;
- Complete road construction based on a single lane split carriageway with central median;
- Associated drainage works including water sensitive urban design measures;
- Shared paths;
- Utility removal, relocation and insertion; and
- Associated costs including design and management.
- Roundabout

Works to the value of \$5,13,444 have been completed. The total remaining cost for Kardan Boulevard is estimated at \$813,728. A detailed breakdown of the remaining costs is provided in Appendix A.

2.2.5 San Simeon Boulevard – Local Road

San Simeon Boulevard is located in the northern portion of the DSP area, providing a northwest-southeast connection between Thomas Road and Abernethy Road. San Simeon Boulevard will play an important district role by providing a direct connection for residents and traffic into the Byford Town Centre. The road will provide a direct access option to and from the Town Centre and assist in limiting vehicle movements through the Byford Trotting Complex.

Subject to final design, this road has a width of 22.5 metres from Thomas Road to Larsen Road and 27.5 metres from Larsen Road to Abernethy Road. The 22.5 metre road reserve is proposed in areas adjacent to public open space and 27.5 metres in built up areas.

The construction of San Simeon Boulevard will occur between Thomas Road and Abernethy Road. The length of the road to be completed is 2,500 metres. The total length is 2,840 metres.

The following items are included in the DCP for San Simeon Boulevard:

Land required over and above a standard 20m road reserve width to achieve a road reserve up to 30 metres in width;

Earthworks for the whole road reserve;

- Complete road construction based on a single lane split carriageway with central median;
- Traffic control devices including the following intersection treatments:
 - Larsen Road – full cost of roundabout; and,
 - Byford Town Centre Main Street – full cost of roundabout.
- Associated drainage works including water sensitive urban design measures;
- Shared paths;
- Utility removal, relocation and insertion; and
- Associated costs including design and management.

Works to the value of \$2,419,747 have been completed. The total remaining cost for San Simeon Boulevard is estimated at \$10,933,390. A detailed breakdown of the remaining costs is provided in Appendix A.

The following items are not included in the DCP for San Simeon Boulevard:

- Minor intersections treatments into San Simeon Boulevard from the adjoining subdivisional road network. These will be subject to a standard truncation requirement;
- Land required to achieve a standard 20m road reserve, which will be ceded free of cost as part of the subdivision process.

2.2.6 Doley Road – Local Road

Doley Road is located in the southern portion of the DSP area, providing a north-south connection between Abernethy Road and Orton Road New. Doley Road will play an important district role by providing vehicle access into the proposed local centre, which will cater for a wide catchment population. The Road is identified in the Byford DSP.

In light of this role, the Shire has, subject to final design, required a road width of 30m for Doley Road.

The construction of Doley Road will occur between Abernethy Road and Orton Road New. The length to be constructed is 1,210 metres. The total length of the road is 1,755 metres.

The following items are included in the DCP for Doley Road:

- Land required to achieve a road reserve up to 30 metres in width;
- Earthworks for the whole road reserve;
- Complete road construction based on a single lane split carriageway with central median;
- Associated drainage works including water sensitive urban design measures;
- Shared paths;
- Utility removal, relocation and insertion; and
- Associated costs including design and management.

Works to the value of \$3,003,952 are completed. The remaining cost for Doley Road is estimated at \$3,632,910. A detailed breakdown of the costs is provided in Appendix A.

The following items are not included in the DCP for Doley Road:

- Minor intersections treatments into Doley Road from the adjoining subdivisional road network. These will be subject to a standard truncation requirement;
- Land required to achieve a standard 20m road reserve, which will be ceded free of cost as part of the subdivision process.

2.2.7 Warrington Road – Local Road

Warrington Road is located in the southern portion of the DSP area, providing a north-south connection between Abernethy Road and Orton Road New. The Road is identified in the Byford DSP and passes through an area of highly fragmented landownership. Warrington Road has been included within the Byford DCP to ensure a coordinated upgrade catering for increased traffic volumes.

The width of Warrington Road, subject to final design, will be 20 metres thus not requiring additional land for road widening.

The upgrade and construction of Warrington Road will occur between Abernethy Road and Orton Road New. The length of road to be completed is 1,295 metres and comprises 2.59 ha. The total length of the road is 1,625 metres.

The following items are included in the DCP for Warrington Road:

- Earthworks for the whole road reserve;
- Complete road construction based on an undivided single carriageway;
- Associated drainage works including water sensitive urban design measures;
- Shared paths;
- Utility removal, relocation and insertion; and
- Associated costs including design and management

Works to the value of \$761,367 have been completed. The remaining cost for Warrington Road is estimated at \$2,868,718. A detailed breakdown of the costs is provided at Appendix A.

The following items are not included in the DCP for Warrington Road:

- Minor intersections treatments into Warrington Road from the adjoining subdivisional road network. These will be subject to a standard truncation requirement;
- Any land required to achieve a standard 20m road reserve, which will be ceded free of cost as part of the subdivision process or use of the existing road reserve.

2.2.8 Road Reserve Improvements

The amenity of urban areas can be substantially enhanced through public realm improvement works such as vegetation, hard landscaping, public art and higher design standards of infrastructure. Road reserves provide significant opportunities for amenity enhancement, especially in the case of wider reserves such as distributor roads and in the instance of split- carriageways.

Within the DSP area, Thomas Road, Abernethy Road, Orton Road New and the other distributor roads have the ability to incorporate significant improvement works.

There is, however, not a clear nexus between development in a new urban area and its associated increase in traffic, and the need for general road reserve improvements.

Nonetheless, it should be noted most developers undertake works to provide attractive streetscapes as a marketing feature, especially in the context of distributor and connector roads leading into new estates. As such, road reserve improvements, such as hard and soft landscaping and higher design standards of infrastructure, are not included in the DCP.

2.2.9 Land for Road Reserves

The DCP takes responsibility for acquiring DCP road reserve land where the existing reserve is widened or where the road is a new road. Each of the Appendices A to B contains an item dealing with land requirements for that road.

The following table brings together the road reserve acquisitions for each road:

Road/Land Acquisition	Requiring Acquisition (Area m2)	Requiring Acquisition (Cost \$)	Acquired (Area m2)	Acquired (Cost \$)	Total (Area m2)	Total (Cost \$)
Thomas Road – Residential	7,939	424,736	11,193	630,564	19,132	1,055,300
Thomas Road – Non-Residential	578	67,915	741	140,180	1,319	208,095
Abernethy Road – Residential	7,398	395,793	20,928	927,000	28,326	1,322,793
Abernethy Road – Non-Residential	270	31,725	2,528	379,000	2,798	410,725
Orton Road	22,100	1,182,350	-	-	22,100	1,182,350
Kardan Boulevard	-	-	11,098	405,500	11,098	405,500
San Simeon Boulevard	12,225	654,038	6,127	355,118	18,352	1,009,156
Doley Road	8,660	463,310	8,831	468,525	17,491	931,835
Warrington Road	-	-	-	-	-	-
All	59,170	3,219,867	61,446	3,305,887	120,616	6,525,754

Land to be acquired is costed at the prevailing englobo values for residential \$53.50 per m² and non-residential \$117.50 per m² as shown in section 2.1.

2.3 District Open Space Improvements

The Shire's Community Facilities and Services Plan (CFSP) states the playing fields required by the community ultimately will need to be provided with field lighting for training purposes, club storage areas, spectator toilets, and in some instances change room facilities complete with umpires and first aid rooms, and clubrooms for clubs to enable them to operate effectively. These will be provided by the Shire through a future shire-wide Community Development Contribution Plan.

These facilities will cater for the rapid growth in population and in memberships with local sporting clubs that are in need of new facilities. An area of district open space has been provided by developers in Byford Central for junior sporting use. Another senior sized playing field has been developed in the West Byford Primary School/ Kalimna District Open Space for which a draft Shared Use Agreement is currently with the State solicitor for review. The Byford South/ Glades District Open Space will also provide a senior sporting field for which a Joint Use Agreement (JUA) is required. In addition, the size of this DOS has been enlarged to accommodate a rectangular field suitable for rugby/soccer/hockey.

Another JUA also will need to be negotiated between the Shire, the Department of Education and the Catholic Education Office for the State High School and the Catholic K-12 School just north of the Recreation Centre. It is likely that at least two, senior sized (165m x 135m), AFL playing fields will be located on these sites along with two Hockey/Soccer/Rugby Pitches. Community consultation has identified the need for playing fields to be designed to cater for codes that are not yet operating in the Shire (such as Soccer, Hockey, and Rugby). This will require the playing fields to be larger than standard size to allow for the different dimensions of different sporting code's playing fields. The DOS facilities at the High School and Catholic school are not covered by this DCP. Such facilities will be covered in the proposed Community Infrastructure DCP.

The rationale for pursuing JUAs is that there are significant economies of scale and efficiencies involved which will allow schools to become a focal point for the community.

The construction of the DOS ovals on land acquired by the DCP is included within the DCP at the following sites:

- Byford Central;
- Kalimna /West Byford Primary School; and
- Byford South /The Glades DOS (senior AFL oval and rectangular field).

The scope of construction included in this DCP is confined to land and below surface works including drainage, irrigation and grassing. Further above ground works will be included in the Shire's proposed Community Infrastructure DCP.

2.3.1 Byford Central District Open Space (Soccer)

The Byford Central DOS is too small for AFL competition (senior or junior) however it is the correct size for Soccer. The DOS has been constructed and the following items were included in the DCP:

- Earthworks;
- Grassing;
- Irrigation; and
- Associated costs relating to construction including design and management.

The total cost for Byford Central DOS (Soccer) eligible works were \$953,532. This is the actual cost as the DOS is fully constructed. This oval is not associated with a school facility.

2.3.2 The West Byford Primary School/ Kalimna DOS Oval

This is a full sized AFL Oval (165m x 135m) partially located on Department of Education land and subject to a JUA. The JUA shares the cost of developing the oval between the Shire and the Department of Education. The oval is now fully constructed.

As with all clubs, the Centrals Senior and Junior Clubs are experiencing rapid growth in their playing membership due to the rapid population increase brought on by new developments. Based on figures provided by the club, the juniors are projected to add two new teams each year for the foreseeable future and the seniors will also add an additional team each year. The Cricket clubs are also experiencing growth. It is because of this growth that these clubs are out-growing their existing facilities and require new facilities to be able to keep up with demand from the increasing population. According to the Youth Strategy, almost a quarter (21%) of young people played football.

The following items were included in the DCP:

- Earthworks;
- Grassing;
- Irrigation; and
- Associated costs relating to construction including design and management.

The cost for Kalimna DOS is based on verified actual costs. The DCP share based on the JUA is \$585,808.

2.3.3 Byford South / The Glades DOS

This will be a junior sized AFL field a JUA will be negotiated with the Department of Education. The JUA will share the cost of developing the oval between the Shire and the Department of Education. It is expected this primary school will be constructed during 2016/17.

As with the revealed demand for the Kalimna DOS, The Glades is expected to experience a similar level of AFL sporting demand. Additional demand for other football codes has been recognised by the Shire. To meet this need, the size of the Byford South/ The Glades DOS was reconfigured and expanded by a further 0.7549 ha. Note, the additional DOS land was formally allocated to POS.

The following items are included in the DCP:

- Earthworks;
- Irrigation;
- Grassing; and
- Associated costs relating to construction including design and management.

The requirement for a junior sized oval has been estimated at \$1,178,252. A detailed breakdown of the costs is provided in Appendix C.

Figure 4 provides a graphical representation of District Open Space within the Byford area.

District Open Space - Area

Local Structure Plan Area	District Open Space Land (ha)	District Open Space Acquired to date (ha)	District Open Space Acquired to date %	Source
Byford Central	2.4979	2.4979	100%	LSP Jan 2006
Byford West	0.4900	0.4900	100%	LSP July 2010
The Glades	3.0363	-	-	LSP April 2011
Kalimna	4.0618	4.0618	100%	LSP Oct 2009
Total	10.086	7.0497		

District Open Space - Value

Estimated amount of District Open Space	Land Area	Land value per hectare	Total estimated cost
To be acquired	3.0363 ha	\$535,000/ha	\$1,624,420
Acquired	7.0497 ha	-	\$2,800,950
Total	10.086 ha		\$4,425,370

2.4 Land for Open Space and/or Drainage

A significant amount of land will be provided within the Byford DSP area for:

- Public open space (POS);
- District open space;
- Dual-function POS and drainage land; and
- Drainage purposes.

This land includes:

- A mix of multiple-use corridors with a dual drainage and recreation function;
- Local and neighbourhood parks;
- Larger district-level playing fields including where provided to complement school playing fields; and
- Land purely for drainage purposes.

In the context of planning undertaken for Byford, it is difficult in many instances to clearly identify and distinguish between land required for recreation and land required for drainage. This is due to:

- The existence of multiple-use corridors and other POS entailing a dual drainage and recreation function.
- Numerous LSPs being prepared based on different POS credit calculation methodologies based on different versions of Liveable Neighbourhoods.
- Deposited plans of subdivision being endorsed containing combined reserves for drainage and recreation.
- Early structure planning and subdivision being based on the adopted Byford Urban Stormwater Management Strategy. This Strategy has now been replaced with the Byford Townsite Drainage and Water Management Plan that is guiding more recent LSPs and subdivision applications.

To ensure compliance with Clause 10.3.6 of TPS 2, all land required for POS and drainage is included in the DCP. This will ensure transparency, equity in terms of land required for district benefit and simplicity of calculation.

2.4.1 Estimated Amount of Land for POS and Drainage

A significant amount of detailed planning has been completed for the Byford DSP area, in the form of LSPs. This level of planning allows for the specific identification of land areas required for drainage and/or POS. More recently the finalisation of the Byford Town Centre has identified additional land for drainage between South Western Highway and George Street and to the east of the high school site.

There are however several areas within Byford which have not yet been subject to the preparation of LSPs, including the Doley Road, Mead Street, Briggs Road and Stanley Road areas (see Figure 8). To ensure that appropriate funds are collected to allow for the future purchase of land required for POS and drainage within these areas, it has been necessary to determine an estimated amount for each precinct.

The following methodology has been applied:

1. A review of LSPs and spatial data has been undertaken to identify the total amount of land covered by each LSP and the total amount of land required for POS and drainage.
2. From these totals, the percentage of land required for POS and drainage has been calculated.

3. Spatial data has been used to identify the total land area of areas in Byford for which LSPs have yet to be prepared.
4. The percentage identified in step 2 has then been applied to the total identified in step 3 to generate an estimated amount of land required for POS and drainage in these areas.
5. The POS and drainage land areas identified in steps 1 and 4 are then added to identify a total estimate of land required for POS and drainage within Byford DCA1.

Based on this methodology, it has been estimated that 123.6344 ha of land will be required for POS and drainage in the Byford DCP.

Table 2.2 POS and Drainage Areas

Local Structure Plan Area	Total Site Area (ha)	Public Open Space Land (ha)	Public Open Space Acquired to date (ha)	Public Open Space Acquired to date (%)	Source
Redgum North & South - Residential	68.5500	9.7250	8.5699	88.12%	LSP May 2015 & LSP Sept 2013
Redgum North – Non-Residential	-	0.9750	-	-	LSP May 2015/GIS
Kalimna	52.6424	5.3269	5.3269	100%	LSP Oct 2009
Byford Meadows – Residential	29.4000	4.2360	-	-	LSP 2014
Byford Meadows – Non-Residential	-	0.5065	-	-	LSP 2014
The Reserve	8.7759	1.1409	-	-	LSP Oct 2009
Byford Central	65.000	5.2303	5.2303	100%	LSP Jan 2006
Marri Park	28.8500	5.8494	5.8494	100%	LSP Nov 2012 & Sept 2013
Town Centre - Residential	78.6857	4.0135	0.9196	-	LSP Feb 2014
Town Centre – Non-Residential	-	4.3265	0.7188	-	LSP Feb 2014 / POS mapping
Byford Green	16.6000	2.1850	0.2546	14.52%	LSP Jan 2013
Byford West	31.0700	3.6254	3.6254	100%	LSP July 2010
The Brook	32.3000	5.1067	4.9042	87.90%	LSP Aug 2014
The Glades	329.1885	45.756	29.334	62.68%	LSP April 2011
Doley Road Precinct	120.5	12.63	-	-	Draft LSP Jan 2016
St Thomas Estate	5.4582	1.1868	1.1868	100%	LSP Aug 2014
Sunrays	6.3500	0.4236	0.4236	100%	GIS
Total LSP Areas	872.8707	112.2435	66.3435		
Percentage of POS to Total Site Area		12.86%	7.60%		

Non-Structure Planned Areas	Total Site Area (ha)	Estimated POS Land (ha)	POS Acquired to date (ha)	POS Acquired to date (%)	Applied % for Estimate
Briggs Road Precinct	18.7700	2.3031	-	-	12.27 %
Stanley Road Precinct	48.8300	2.7000	-	-	5.53 %
Mead Street	4.8000	0.5890	-	-	12.27 %
Total Non-Structured Planned Areas	72.40	5.5921	-	-	
Total POS and Drainage Land Area	945.2707	117.8356	66.3435		

Figure 5 provides a graphical representation of Local Structure Plans and areas of fragmented land ownership.

Notes:

- The St Thomas Estate and Sunrays sites were not subject to LSPs. POS and drainage land calculations were therefore undertaken on the basis of spatial data.
- The existing Byford Townsite (DCP Precinct C) is not subject to POS and drainage land contributions and has therefore not been included in the above calculations. Precinct C is, however, subject to DOS land obligations.
- Lot 7 Abernethy Road (adjacent to the proposed Tonkin Highway reserve) is not included as it has been purchased by Water Corporation.

2.4.2 Estimated Cost

Based upon the land value detailed in section 2.1 of this report and the value of acquired land, the total estimated cost of creditable POS in the Byford DCP is \$63,436,455 as detailed in the table below:

Table 2.3 POS Cost

Estimated amount of Public Open Space	Land Area	Land value	Total estimated cost
To be acquired - Residential	46.4029 ha	\$535,000/ha	\$24,825,552
To be acquired – Non-residential	5.0892 ha	\$1,175,000/ha	\$5,979,810
Acquired	66.3435 ha		\$32,631,093
Total	117.8356 ha		\$63,436,455

Figure 6 shows a graphical representation of POS/drainage subject to a non-residential land value.

Items Not Included

State Policy provides a clear indication that the development of POS to a minimum standard, and maintenance for a minimum period of time, is at the developer's expense. As such, the development and initial maintenance of POS is not included within the Byford DCP and will be the responsibility of the subdivider.

In addition, land identified as having conservation value, for example Bush forever sites, is excluded from the DCP.

It should be noted that the Council has resolved not to require POS contributions from subdivision and development in the existing Byford Townsite, identified as DCP Area C on Plan 16A of Appendix 16 of TPS 2 except for land required for DOS.

While the DCP includes land for drainage purposes, it does not include drainage works themselves (i.e. earthworks, drainage infrastructure such as piping, pits, mechanical treatments, water sensitive urban design treatments or similar). These are considered to be subdivisional works, generally required by local water management strategies and urban water management plans, and are also very difficult to calculate given the varying nature of drainage infrastructure provided and proposed throughout Byford. Developers may treat drainage works in various ways to benefit their development. The requirement to provide optimal certainty in costing DCP items to achieve equity between developers over time reinforces the need to exclude drainage works. The drainage works contained within the proposed roads are permitted to be included in accordance with SPP3.6.

2.4.3 District Open Space

Land identified as DOS occurs in three LSPs. These are Byford Central (2.4979 ha), Kalimna (Australand) (4.0618 ha) and Byford South/The Glades (3.5263 ha)

The total land for DOS is 10.0860 ha. The budgeted cost of DOS land to be purchased is \$1,624,420. To date 7.0497 ha with a value of \$2,800,950 of land has been purchased.

2.5 Water Monitoring

The Byford Townsite Drainage and Water Management Plan (DWMP) establishes a framework for water management in new urban development. This ensures that water quantity and quality design objectives can be achieved and the concerns and risks identified by the Department of Water (DoW) and the Water Corporation can be addressed. The DWMP reinforces the Shire's commitment to ensuring that water sensitive urban design principles are incorporated into new urban development.

During the course of the review of the Byford DSP in September 2006, the Water Corporation raised a number of concerns regarding regional drainage planning for the Byford area. In November 2006, a "round-table" forum was convened with the then Department for Planning and Infrastructure, DoW, the Shire and the Water Corporation to discuss regional drainage requirements and to determine an appropriate path forward. The DoW subsequently engaged consultants SKM to prepare the Byford Flood Plain Management Strategy and then later engaged consultants GHD to further progress this work in the form of a DW MP. In February

2008, a draft DWMP for Byford was released by the DoW for public comment. The DW MP was published as a final document in September 2008.

Since the publishing of the final DW MP, all LSPs, detailed area plans, subdivision and engineering drawing applications have been assessed against the water quantity and quality design objectives outlined in the DWMP.

The DWMP provides a summary of monitoring requirements and responsibilities (an extract is provided on the following page):

Table 2.4

Responsible Agency	Timing	Monitoring Requirement
Developers	Period of 3 years pre-development (minimum of 18 months with at least 2 winters with approval of DoW)	Monitor key criteria for maintenance of hydrologic regimes, buffers and ecological corridors/linkages of environmental assets Monitor local superficial aquifer groundwater levels Monitor flow and water quality (including nutrients, TSS, and gross pollutants) at regular intervals (monthly) Monitor peak flows (snapshots) within developments and wetlands
	Period of 3 years post-development, including at least 1 year following completion of the majority (80%) of developments	Monitor key criteria for maintenance of hydrologic regimes, buffers and ecological corridors/linkages of environmental assets Monitor local superficial aquifer groundwater levels Monitor flow and water quality (including nutrients, TSS, and gross pollutants) at regular intervals (monthly) Monitor peak flows (snapshots) within developments and wetlands Monitor behavioural patterns with respect to non-structural measures for water quality management Monitor performance of new drainage systems
DoW	Ongoing	Monitor efficacy of water conservation measures and achievement of water consumption targets Monitor regional surface water flows and quality Monitor confined aquifer groundwater levels and regional superficial aquifer groundwater levels and quality Monitor groundwater abstraction in the DSP area Monitor surface water quality and flows at strategic locations in main drains and waterways Monitor structural BMPs for efficacy with advice from the BMP technical reference group Monitor performance of new drainage systems across catchments and property boundaries
SJ Shire – with funding from developer contributions scheme	From 3 years post-development	Monitor key criteria for maintenance of hydrologic regimes, buffers and ecological corridors/linkages of environmental assets Monitor local superficial aquifer groundwater levels Monitor water quality and flows within developments and wetlands Monitor behavioural patterns with respect to non-structural measures for water quality management
DEC	Ongoing	Evaluate health of significant environmental assets

Water quality and quantity monitoring within developments and wetlands will be implemented by the Shire. The Byford DSP Area Sampling and Analysis Plan prepared by the Shire identifies the sampling and analysis requirements. It is proposed that monitoring be carried out over the life of the DCP. There will be 5 monitoring events run over an annual period with monthly sampling. Monitoring will be completed in year 0, 4, 8, 12 and 16 or alternatively as a percentage of build-out (i.e. 0, 25, 50, 75 and 100 percent). No monitoring has been carried out to date.

Both approaches will allow longer-term trends in water quality and quantity to be identified and monitored as the Byford DSP area is fully developed. Suitable remediation works or structural controls may be implemented to rectify any identified problems.

It is likely that subdivision and development would not be approved within the Byford area without the approval and ongoing implementation of the Byford Townsite DWMP. As such, it is considered reasonable that the all costs of, and associated with, the required water monitoring be funded by developers within Byford.

The DCP will assume funding responsibility for the post development water-monitoring program required by the Byford DWMP.

The total cost for required water monitoring is estimated at \$1,045,139. A detailed breakdown of the costs is contained at Appendix D.

2.6 Outstanding Costs

Cost estimates relate to future works only. A cost to be recognised is the outstanding cost of completed works less contribution payments received.

Completed works cover all infrastructure works, land transfers and administration including water monitoring. The value of these works reduces the cost estimates applying to future works.

It is important to note that pre-funded works, where a credit has been given, constitute completed works. In the same vein, credits used to offset contribution payments become contribution payments received.

Outstanding costs are therefore the net of the cost of completed works less the value of paid contributions.

DCP lot numbers also will be revised at each review to account for lots developed.

2.7 Administrative Items

There is no obligation on the Shire to prepare and administer a DCP other than to support good and orderly development. The existence of a DCP is, however, important to landowners and developers where there are district level works that need to be provided as a precursor to subdivision.

Administrative items include all expended and estimated future costs associated with administration, planning and development of the Byford District Structure Plan, District Water Management Plan/s, preparation and implementation of the Byford Development Contribution Plan and any technical documents necessary for the implementation of the above, including:

- Planning studies;
- Traffic studies;
- Drainage studies (including water management strategies);
- Road design costs were not allocated to specific roads;
- Other related technical and professional studies;
- Borrowing costs (including loan repayments); and
- Scheme Management Costs (including administration and management of the DCP).

Statutory planning costs are not included in the DCP except where directly benefitting the Byford DCP. The total administration costs expended from 21 January 2014 up to 28 February 2017 is \$2,215,557.

The total cost forecast for administrative items over the remaining 17 year life of the DCP is estimated at \$3,390,096. A detailed breakdown of the costs is provided in Appendix E.

2.8 Cost Review Reconciliation

At each Cost Review, net contributions will be calculated. The net contribution is arrived at after accounting for all contributions due from the clearance of the lots created in the previous development period i.e. DCP Report 3 less offsets for works and land transferred and administration costs. No account is taken of contributions paid i.e. cash received.

Table 2.5 Annual Cost Review Outcomes to 28 February 2017

Lots Cleared	738
Gross Contributions Due	\$9,977,344
Costs Incurred:	
Land settled	\$7,373,860
Works settled	\$394,295
Administration Costs incurred	\$240,630.04
Total Costs	\$8,008,785.04
Net Contribution Surplus/Deficit	\$1,968,558.96

In the case of the current review period from 1 July 2015 to 28 February 2017, net contributions of \$1,968,558.96 are attributable to the DCP. This surplus means the contributions arising from lots developed exceeded the DCP costs incurred. Future DCP contribution rates take account of net contributions and future works and lots yet to be developed.

A Cost Review can result in a surplus or deficit given it represents only the time between review periods. . Over the life of the DCP, the methodology employed in this DCP will see the annual surpluses and deficits cancel out.

2.9 Total Cost

The following table provides a summary of the total cost for all infrastructure, land and other items within the DCP.

Table 2.6 Summary of Costs

Item	Completed \$	Future \$	Total Cost \$
Thomas Road	1,508,048	12,333,522	13,841,570
Abernethy Road	2,913,532	18,827,708	21,741,240
Orton Road	-	10,164,238	10,164,238
Kardan Boulevard	5,315,444	813,728	6,129,172
San Simeon Boulevard	2,419,747	10,933,390	13,353,137
Doley Road	3,003,952	3,632,910	6,636,862
Warrington Road	761,367	2,868,718	3,630,085
District Open Space – Improvements	1,539,340	1,178,252	2,717,592
Land for roads	3,305,887	3,219,867	6,525,754
Land for District Open Space	2,800,950	1,624,420	4,425,370
Land for Public Open Space & Drainage	32,631,093	30,805,362	63,436,455
Water Quality Management	-	1,045,139	1,045,139
DCP Administration	2,215,557	3,390,096	5,605,653
	-		
Total (Gross)	58,414,917	100,837,350	159,252,267
MRWA Grant for Thomas	660,000	8,222,348	8,882,348
MRWA Grant for Abernethy	-	-	-
Abernethy Road share by Shire	-	5,412,966	5,412,966
Cost Review Reconciliation - Surplus	1,968,559	-	1,968,559
Total (Net)	55,786,358	87,202,036	142,988,394

2.10 Cost Escalators

Three cost escalators are used as described in 3.4.2.

2.10.1 Administration Escalation Rate (AER)

The Administration Escalation Rate (AER) is the rate used for wages and salaries in the Local Government Cost Index based on WA State Treasury forecasts. For the period 2016/17, the forecast is for a rise of 1.75%. This is a reduction of 1.05% from the 2015/16 escalation.

2.10.2 Infrastructure Escalation Rate (IER)

The Infrastructure Escalation Rate (IER) of 1.75% 2016/17 forecasts is taken from a cost series produced by the WA Local Government Association (WALGA). The Road and Bridge Construction forecast is seen as the most appropriate index for infrastructure costs. This index is based on Construction Forecasting Council forecasts. This is an increase of 1.45% from the 2015/16 escalation.

2.10.3 Land Value Escalation Rate (LVER)

The Land Value Escalation Rate (LVER) of 0% is a forecast provided by the land valuer who assessed the englobo land value rate for this Report. The escalation remains the same as 2015/16.

3. Development Contribution Methodology

This section of the DCP Report sets out the methodology for determining the development contributions applicable within certain precincts of the Byford development contribution area. In a general sense, the development contribution area is divided into precincts and development contributions for each precinct will be made on a ‘per lot’ or dwelling basis. Additional detail and clarification on the operation of the methodology is provided in the following sections.

3.1 Precincts

The Byford development contribution area is divided into four precincts, as indicated in Plan 16A of Appendix 16A of TPS 2. Development within each precinct will be required to contribute to a certain set of infrastructure and land items based on the perceived need for and use of those items within the precinct.

The following matrix identifies the precincts and what items they are required to contribute toward:

Table 3.1 Precinct Contribution Items

Item/Precinct	A	B	C	D
Thomas Road	X	X	X	X
Abernethy Road	X	X	X	X
Orton Road	X	X	X	X
Kardan Boulevard	X			
San Simeon Boulevard	X			
Doley Road	X			
Warrington Road	X			
Land for Roads (district)	X	X	X	X
Land for Roads (local)	X			
District Open Space Improvements	X	X	X	X
Land Acquisitions for District Open Space	X	X	X	X
Land Acquisitions for Public Open Space & Drainage	X	X		X
Water Quality Management	X	X	X	X
DCP Administration	X	X	X	X
Cost Review Reconciliation	X	X	X	X

Figure 7 provides a graphical representation of the precinct areas.

Precincts B, C and D will not be required to contribute towards Kardan Boulevard, San Simeon Boulevard, Doley Road or Warrington Road. All of these roads are located within Precinct A and are considered to predominately cater for vehicular traffic within new development areas west of the railway reserve.

Council has resolved not to require POS contributions from subdivision and development in the existing Byford Townsite, identified as DCP Precinct C. This is due to the absence of a POS strategy or

LSP identifying strategic locations for additional recreation lands. A strategy or LSP is necessary as it is difficult to achieve reasonably sized and consolidated areas of POS in the context of small and fragmented landholdings. Precinct C will, however, be required to contribute to DOS land and associated below surface improvements.

Furthermore, in the absence of an LSP and detailed drainage investigations, it has not been possible to determine the drainage requirements for Precinct C. The area, therefore, will not be required to contribute toward land for drainage purposes. This situation may be reviewed in the future pending further detailed planning and detailed investigations into drainage requirements.

Precincts A, B and D will be required to contribute toward land for POS and/or drainage. This land is required to cater for the recreational and drainage demands of development and has been identified in the Byford DSP and LSPs.

Due to the district function of Orton Road New linking with Tonkin Highway, Abernethy Road providing access to the Town Centre and Thomas Road providing a connection between South Western Highway and Tonkin Highway, all precincts are required to contribute towards these items.

All precincts will be required to contribute towards water monitoring and administrative costs. These items are required to facilitate the preparation of the Byford DSP and subsequently facilitate the preparation of LSPs and allow for subdivision and development to occur.

3.2 Estimation of Lot / Dwelling Potential

The development contribution methodology is based on a per lot/dwelling basis. Therefore it is necessary to estimate the potential number of additional lots/dwellings to be created in the Byford area. This estimate will be used to determine the development contribution rates per lot/dwelling for standard/non-standard residential, non-residential and mixed use development.

The following methodology has been applied:

1. A review of LSPs and spatial data has been undertaken to identify the estimated total lot/dwelling yield for each area covered by an LSP or approved subdivision application.
2. The lot/dwelling estimates for greenfield areas not yet subject to LSPs have been determined through identifying their total land area, deducting 40 percent of this land area (accounting for land required for public purposes such as roads, POS and drainage), and then determining the subdivision/development potential of the remaining land area based on its residential density coding.
3. The lot/dwelling estimates for infill sites (ie. existing urban) not yet subject to LSPs were determined through manual calculations of the development potential of each landholding based on the relevant residential density.
4. By adding the lot/dwelling yields calculated in steps 1-3, the total estimated lot/dwelling yield for the Byford DCP area has been identified.
5. A 'Parent lot' deduction has been included within the total lot count. Parent lots do not generate a DCP contribution.

Based on this methodology, it has been estimated that 11,646 lots/dwellings will be created within the Byford DCP area during the life of this DCP. As lots extinguish their liability to pay contributions, the future lot count is revised at each cost review (see Table 3.3).

Table 3.2 Estimated Lot Yield by Estate and Precinct

Table 3.2a - Structure Planned Areas

Local Structure Plan Areas	Total Site Area (ha)	Estimated Dwelling Yield				Lot/ D	Source
		A	B	C	D		
Redgum North & South	68.5500	704					LSP Sept 2013 & May 2015
Kalimna	52.6424	352					LSP Oct 2009
Byford Meadows	29.4000	359					LSP Jun 2014
The Reserve	8.7759	116					LSP Oct 2009
Byford Central	65.0000	743					LSP Jan 2006
Marri Park	28.8500	316					LSP Nov 2012 & Sept 2013
Byford Town Centre	78.2900	415					L1 Abernethy Rd Sub Approval (WAPC 145778) LWP Lot Estimate 2015
L15 Abernethy Road		73					Subdivision Approval (WAPC 148939)
Byford Green Private	16.6000	216					LSP Jan 2013
Byford West	31.5600	377					LSP July 2010
The Brook	32.3000				425		LSP Aug 2014
The Glades	329.4532	3,638					LSP April 2011
Doley Road Precinct	120.5	1,900					Draft LSP Jan 2016
Stanley Road	24.41		320				LSP Draft Jan 2017
St Thomas Estate	5.4582		60				LSP Aug 2014
Sunrays	6.3500		83				GIS
Total	873.7297	9,209	463	-	425		

Table 3.2b - Non-Structure Planned Areas

Non-Structure Planned Areas	Total Site Area (ha)	Estimated Lot / Dwelling Yield				Source
		A	B	C	D	
Briggs Road Precinct	18.7700	200				Total area minus 40% (land for public purposes) divided by 450 m ² (R20)
Stanley Road Precinct	24.42		320			Total area minus 40% (land for public purposes) divided by 450m ² (R20)
Mead Street	4.8000	106				Total area (no land for public purposes) divided by 450 m ² (R20)
Old Quarter	98.6370			630		Manual Calculations
Total	171.037	306	320	630	-	

Table 3.2c - Mixed Use / Commercial / Town Centre Development

Local Structure Plan Areas	Developable Area (ha)	Total Lot Equiv. Based on R20/450 m ²	Mixed Use Developed (ha)	Lots Developed Based on R20/450 m ²	Mixed Use Remaining Balance (ha)	Lots Remaining Based on R20/450 m ²	Precinct
The Glades	2.5219	54.6	2.5219	54.6	-	-	A
Redgum	0.9294	20.66	0.9294	20.66	0	0	A
Byford Town Centre	9.2323	205.16	2.2917	49.93	6.9406	154.23	A
L15 Abernethy Rd	0.5510	12.24	-	-	0.5510	12.24	A
Total	13.2397	292.66	3.4513	75.26	9.7833	217.40	

Table 3.2d - Total Lot Yield by Precinct

Lots/Dwelling Total Yield	DCP 1	A	B	C	D	Total
Residential	7,926	9,209	463	-	425	10,097
Non-Structure Planned Areas	3,012	306	320	630	-	1,256
Mixed Development		292.66	-	-	-	292.66
Total Lot Yield	10,938	9,807.66	783	630	425	11,645.66

Notes:

- Land for public purposes (i.e. POS, drainage and similar) is expected to be provided within the Doley and Briggs Road precincts. As such, a 40 percent deduction has been applied to the total site area of each precinct.
- It is assumed that no land will be provided for public purposes within the Mead Street precinct given its existing development pattern. As such, a 40 percent deduction has not been utilised.
- In the absence of finalised LSPs depicting residential densities, an R20 code has been utilised to determine the lot/dwelling estimates for the Doley Road, Briggs Road and Mead Street precincts.
- Due to the nature of infill development proposed for the Stanley Road and Old Quarter precincts, lot/dwelling estimates have been made on the basis of manual calculations of the subdivision/development potential of each lot.
- DCP1 did not separate lots yields to include non-residential or mixed use development.
- The yield estimate calculated for mixed development is based on 15 lots per gross hectare to provide for infrastructure of subdivision works such as roads and drainage facilities to be transferred to the state / local government as per clause 3.4.5. However, where individual lots do not require land to be transferred to the state / local government, 20 lots per gross hectare will be applied.

The following table identifies the current total estimated lot/dwelling yield for each of the Byford DCA precincts:

Table 3.3 Estimated Future Lot Yield Totals By Precinct

DCA1 Precinct	Lots Created (as at 28 February 2017)	Future Lots	Estimated Lot/Dwelling Yield
A	4,247	5,560.66	9,807.66
B	96	687	783
C	64	566	630
D	254	171	425
Total	4,661	6,984.66	11,645.66

3.3 Identifying the Contribution Rate for Each Precinct

As previously identified, the Byford development contribution area is divided into four precincts. Each precinct will contribute toward certain infrastructure and cost items. Each precinct will therefore have a different contribution rate.

To determine the contribution rate for each precinct, it is first necessary to identify the current total number of lot/dwellings which will be contributing to each item. From this, the contribution rate per lot/dwelling for each infrastructure item or cost can be determined. A breakdown is provided in the following table.

Table 3.4 Contribution Rate per Lot by Cost Item

Item/Precinct	Remaining Cost (\$)	Precinct	Future Lots Contributing	Contribution Per Lot (\$)
Thomas Road *	4,111,174	All	6,985	589
Abernethy Road *	13,414,742	All	6,985	1,920
Orton Road	10,164,238	All	6,985	1,455
Kardan Boulevard	813,728	A	5,561	146
San Simeon Boulevard	10,933,390	A	5,561	1,966
Doley Road	3,632,910	A	5,561	653
Warrington Road	2,868,718	A	5,561	515
Land for Roads (district)	920,169	All	6,985	131
Land for Roads (local)	2,299,698	A	5,561	413
District Open Space Improvements	1,178,252	All	6,985	168
Land Acquisitions for District Open Space	1,624,420	All	6,985	232
Land Acquisitions for Public Open Space & Drainage	30,805,362	A, B & D	6,419	4,799
Water Quality Management	1,045,139	All	6,985	149
DCP Administration	3,390,096	All	6,985	485
30 June 2015 Reconciliation Surplus	(1,968,559)	All	6,985	(281)
Total				13,340

* Reduced by value of MRWA grants

The infrastructure and cost contribution rates per lot/dwelling applicable to each precinct can then be calculated, by adding the cost of each applicable item. The table below identified the development contribution rate per lot/dwelling for each precinct.

Table 3.5 Contribution Rate per Lot by Precinct

Item/Precinct	Contribution per lot	A	B	C	D
Thomas Road	589	X	X	X	X
Abernethy Road	1,920	X	X	X	X
Orton Road	1,455	X	X	X	X
Kardan Boulevard	146	X			
San Simeon Boulevard	1,966	X			
Doley Road	653	X			
Warrington Road	515	X			
Land for Roads (district)	131	X	X	X	X
Land for Roads (local)	413	X			
District Open Space Improvements	168	X	X	X	X
Land Acquisitions for District Open Space	232	X	X	X	X
Land Acquisitions for Public Open Space & Drainage	4,799	X	X		X
Water Quality Management	149	X	X	X	X
DCP Administration	485	X	X	X	X
30 June Reconciliation Credit	(281)	X	X	X	X
Total Contribution Per Lot	13,340	13,340	9,647	4,484	9,647

3.4 Calculating the Contribution Rate for Landowners/Developers

At any point in time, the contribution rate/lot will vary according to Precinct and number of days since the last Cost Review.

The contribution rate is adjusted after each cost review in terms of contributions received, expenditure, cost estimates for each cost item and number of lots with paid contributions.

Various types of residential and non-residential subdivision and development will occur within Byford. The following sections identify how the methodology applies to each of these scenarios. For the purposes of calculating an R20 equivalent a minimum area of 450m² will be implemented, as per State Planning Policy 3.1 (The Residential Design Codes).

3.4.1 Cost Review Input into Contribution Rate Revisions Cost Reviews will be undertaken at least annually

At the time of adoption of a cost review, the following contribution rate inputs will be revised:

- Table 2.1 Road Reserve Acquisitions
- Table 2.3 POS Costs
- Table 2.5 Cost Review Outcomes
- Table 2.6 Summary of Costs
- Table 3.3 Estimated Future Lot Yield Totals by Precinct
- Table 3.4 Contribution Rate Per Lot by Cost Item
- Table 3.5 Contribution Rate Per Lot by Precinct
- Outstanding Cost of Completed Works (Expenditure on all Cost Items – Value of all Contributions Received)
- Infrastructure Cost Escalator
- Land Value Escalator
- Administration Cost Escalator
- Precinct Daily Escalation Rate

3.4.2 Calculating the Contribution Rate between Cost Reviews

To ensure costs are current during the time between cost reviews, all costs will be escalated on a daily basis calculated from an annual escalation rate. Escalation rates will separately apply to infrastructure costs, land costs and administration costs. The escalation rates will be set at each cost review. The starting point for daily escalation is the approval date for the prevailing cost review.

Given that each Precinct cost entail a different bundle of items, it is necessary to calculate a weighted escalation rate for each precinct.

Precinct ER = (%IC/TC x IER) + (%LV/TC x LVER) + (%AC/TC x AER) Where for each precinct:

- ER - is the weighted Escalation Rate;
- DER - is the daily escalation rate (ER/365); IC - is the estimated Infrastructure Cost;
- LV - is the estimated Land Value;
- AC - is the estimated Administration Cost (Administration Cost includes Water Monitoring and Outstanding Cost of Completed Works); TC - is the Total Cost being IC + LV + AC;
- IER - is the Infrastructure Escalation Rate; LVER - is the Land Value Escalation Rate;
- AER - is the Administration Escalation Rate; and
- D - is the number of days since the last cost review.

3.4.3 Standard Residential Subdivision or Development

In the instance of standard residential subdivision or development, development contributions for each precinct will be determined in the following manner:

Precinct contribution rate per lot/dwelling x DER x D x number of additional lots or dwellings being created

= Required development contribution

The calculation methodology works on the additional number of lots/dwellings being created. This approach is based upon each original lot either having, or having the potential to entail a single dwelling without the requirement for substantial infrastructure upgrades. The creation of the first dwelling or lot would therefore in effect, retain the status quo and not necessitate a contribution toward infrastructure upgrades, land and other items. For the avoidance of doubt, the original lot is the parent lot for the subdivision. Where subdivision is being undertaken in stages on a parent lot, there is one lot credit only for that lot. In other words, each subdivision stage does not receive a one lot credit.

3.4.4 Non-Standard Residential Subdivision or Development

There may be instances in the Byford DSP area where the large-scale permanent residential development of a site is proposed without any standard residential subdivision and/or development (i.e. a lifestyle village, retirement village, caravan park, park home estate or similar).

Development contributions will be required from such forms of non-standard residential subdivision/development as for Standard Residential Subdivision or Development shown in 3.4.3 above.

3.4.5 Non-Residential Subdivision or Development

Portions of land within the Byford DCA 1 will be developed for non-residential purposes, including retail/commercial, community purpose (or similar) and private schools. All forms of development contribute toward a need for new and improved infrastructure including roads. Non-residential development is no different in this regard.

Non-residential subdivision or development will be required to contribute toward land for public open space and drainage. The multiple use corridors in Byford provide both a drainage and recreation function, and will provide a means of access to non-residential developments.

Development contributions for non-residential subdivision or development will be calculated based upon the number of dwellings/lots that could have been created/developed at an R20 density (i.e. the R20 subdivision/development potential of the site), minus the equivalent of the first lot created in a subdivision or first dwelling created in a development. Note, the one lot credit can be claimed only once in any multi-staged development based on the parent lot or single lot paid as part of an earlier subdivision.

The R20 development potential of the site will be determined according to the site size minus any land needed for additional infrastructure/subdivision works such as roads and drainage facilities to be transferred to the state or local government.

The lot/dwelling equivalent is calculated in accordance with net site size 450m² for sites or portions of sites covered by a DA where 450m² represents the minimum lot size within an R20 zone. Since the calculation of dwelling/lot equivalents is a hypothetical yield based on an area, the resulting number of dwellings or lots in non-residential zones may not be a whole number thus allowing for partial dwellings/lots to be used in the calculation of contribution liability.

For each precinct:

Precinct contribution rate per lot/dwelling x DER x D R20 subdivision/development potential of the site –
the equivalent of one lot or one dwelling where applicable

= Required development contribution

Land for primary and secondary public schools use will be exempt from paying development contributions. For secondary public schools, exemption only occurs where the land is already in state ownership. In other cases, the land is purchased from private owners at full market value that includes the DCP liability.

For private education establishments and associated development, development contributions will be levied at 0.3 per cent of the total development costs of the site, as agreed with the Shire based on the building licence application.

For the purposes of determining the total development contribution amount of the DCP, the following estimates have been made for each private school site based on developer advice:

Abernethy Road private school proposal - \$15,000,000.00 based on Building Licence submission.

This 0.3 percent calculation method will only be applied where the private education establishment has entered into a joint use agreement with the Shire and/or Department of Education regarding the co-location and use of district open space and school ovals and associated facilities. The joint use agreement must ensure that the co-located and used facilities are publically accessible. Based on this approach, the discounted DCP contribution amounts to \$45,000 for the Catholic K - 12 school.

Where a joint use agreement is not in place as described above, development contributions will be levied based on the R20 subdivision/development potential of the site.

3.4.6 Mixed Use Development

In the preparation of this DCP Report it has become apparent the approach to mixed use development does not accommodate residential and non-residential development on the same footprint. This issue will be addressed in a separate item to the Council. In the interim, this Report is confined to using the definition in TPS 2 Appendix 16A.

In the context of mixed use development, there are residential and non-residential components. Mixed use therefore can combine standard residential (3.4.3), non-standard residential (3.4.4) and non-residential (3.4.5) forms of development. The contribution rate is based upon the number of dwellings/lots equivalents that could have been created/developed at an R20 density on the site or stage area, or the actual number of residential dwellings/lots being created at the time of subdivision/development, whichever is the greater, minus the equivalent of the first dwelling/lot created in the first stage of development.

For each site (and for each stage if appropriate):

Precinct contribution rate per dwelling x DER x D x (R20 development potential of the site/development area) or (actual number of dwellings), whichever is greater, less one dwelling/lot equivalent for the first development on the existing lot.

= Required development contribution

It is recognised development can be staged on a site. Therefore the calculation of contribution liability will be calculated for each stage. It is important to note that where the land use is non-residential, a DCP liability will be incurred only once on any site area (footprint) provided the liability discharged is based in the full R20 potential of 450m² per dwelling or lot. Subsequent non-residential development will not be liable for additional DCP contributions. For example, multilevel non-residential development or ongoing development on the non-residential site will be exempt from further DCP liability – liability is based on the non-residential

land “footprint”. However, should there be subsequent residential development over the non-residential development footprint, additional contribution liability will be incurred should the actual number of dwellings constructed exceed the R20 development potential used to calculate the non-residential contribution liability.

Calculation examples are provided in section 7 of this report.

3.5 Future Subdivision/Development Potential

It is acknowledged that land within the Byford area may be developed to a residential density lower than that envisaged by the Byford DSP. Such development may however allow for additional subdivision and/or development in the future.

Contributions will be required for the creation of additional lots/dwellings post-initial development at the time that those additional lots/dwellings are created. Such additional contributions will be required in accordance with the DCP.

This section should be read in conjunction with the references to staging in 3.4.6 and 6.3.

It should be noted that future lot yield is the base for calculation of contribution/lot. At each cost review the future yield will be adjusted to account for lots on which contributions have been paid.

4. Priority and Timing of Provision

The following key principles are utilised to guide the identification of priorities for the provision of infrastructure and land acquisition, including:

- Ensuring a constant turnover of funds – By managing the cash flow of the DCP, the Shire can optimise the use of funds between land acquisition and civil works and recoupment of developer pre-funding.
- Prioritising the purchase of land identified for public purposes that encompasses all of, or a substantial portion of, one landholding – such landholdings are essentially “quarantined” from subdivision and/or development and would be difficult to sell to a private buyer.
- Constructing infrastructure on an “as needs” basis to facilitate development – This is especially apparent in the context of road upgrades.
- Undertaking works and land acquisition in areas of fragmented ownership – this assists in the successful and coordinated development of these areas. In areas of consolidated ownership, most infrastructure and land is provided by the developer as offsets to cost contributions.
- Grant funding opportunities – the Shire will actively seek grant funding to assist in the provision of DCP infrastructure. In most instances, the use of grant funding is reliant on the Shire providing a matching or partial contribution. The Shire may utilise DCP funds and elevate the priority and timing of an infrastructure item to capitalise on grant funding opportunities. This approach is beneficial to the long-term financial viability of the DCP.

The following items have been determined by the Shire as current priority items. Work on the construction of Abernethy Road is a first priority and will commence in early 2015. Thomas Road scheduling will be linked to the availability of funding

- Abernethy Road; and
- Thomas Road design, second carriageway and intersections.

The identification of priorities will be undertaken as part of the annual cost estimate review and associated DCP Report update.

Only items of infrastructure that have been prioritised by Council through review of this DCP Report can be paid out from the DCP restricted cash account. All other DCP credits will be held on account and the value will be held as at that point in time, until such time as the item has been prioritised in the DCP Report or surplus funds are available for payment. All credit refunds are to be paid at the Shire’s discretion.

5. Period of Operation and Review

The DCP will operate for a period of 20 years from 20 January 2014, being the date of gazettal of the related scheme amendment to incorporate the DCP into TPS 2 as Appendix 16A.

The DCP will be reviewed when considered appropriate, having regard to the rate of subsequent development in the area since the last review and the degree of development potential still existing, but not exceeding a period of 5 years.

The DCP Report, incorporating cost estimates and cost escalators, will be reviewed at least annually, allowing for more frequent reviews to be completed on an as- required basis having regard to cost volatility and development priorities. The view of the Byford Infrastructure Reference Group will be sought when revising the cost estimates.

Where the costing and details of the DCP Report are:

- revised based on accounting for completed works;
- revised based on construction cost increases/decreases;
- revised based on land value increases/decreases; and
- revised based on revisions to the anticipated undeveloped lot yield; and
- not subject to other material change, the revised DCP Report may not be advertised for public comment, but will remain available for public inspection. All landowners with current subdivision approvals will be automatically advised of each revision of the DCP Report. The Byford Industry Reference Group (BIRG), comprising all major landowners, will be consulted as part of its regular agenda.

6. Operational Matters

This section of the DCP Report addresses various operational matters associated with the Byford DCP.

6.1 Estimation of Costs

This matter is dealt with in Clause 10.3.11 of TPS 2.

6.2 Land Valuation

The definition of value is dealt with in Clause 10.3.12 of TPS 2. The valuation base is further refined to cover the process in the Byford DCA whereby:

The net land value is to be determined in accordance with the definition of "value" in cl.10.3.12 and having general regard to the International Valuation Standards Committee's definition of market value as adopted by the Australian Property Institute. To account for the direct transfer of land, the fair market value should be discounted by standard marketing costs including fees, commissions and advertising costs and by the prevailing DCP contribution liability which otherwise would have applied to the land.

Market Value shall be determined by methodology primarily based on comparable sales evidence. Analysis of comparable sales shall account for all circumstances that might affect value, either advantageously or prejudicially, and that development contributions or other statutory charges are not attributable to the Land.

Market Values of Land shall include GST.

Valuations should have due regard to the characteristics of the Land including:

- highest and best use, zoning, development density and efficiency;
- physical characteristics such as size, topographical, aesthetic, geological and environmental factors;
- location, access and surrounding amenities;
- market conditions and the then present demand for land; and
- development levies.

6.3 Liability and Timing for Contributions

This matter is dealt with in Clause 10.3.13 of TPS 2. In particular, 10.3.13.2 covers timing of payment.

10.3.13.2 An owner's liability to pay the owner's cost contribution to the local government arises on the earlier of:

- the Western Australian Planning Commission endorsing its approval on the deposited plan or survey strata plan of the subdivision of the owner's land within the development contribution area;
- the commencement of any development on the owner's land within the development contribution area;
- the approval of any strata plan by the local government or Western Australian Planning Commission on the owner's land within the development contribution area; or
- the approval of a change or extension of use by the local government on the owner's land within the development contribution area.

The liability arises only once upon the earliest of the above listed events.

The intent of s.10.3.13.2 appears to be that payment should be tied as far as possible to the condition clearance of the development to be marketed. As in the case of liability to pay under (a) above, liability is not triggered by the approval to subdivide but rather by the actual completion of subdivision works and condition compliance. It is not uncommon for such a subdivision to be staged, in which case the development contribution is payable, only on stages cleared. The use of condition clearance of deposited plans to determine timing for DCP contribution payment supports this point.

S.10.3.13.2 (b) and (c) are initiated by a development approval. Within a site there may be a number of development approvals due to staging. Continuing the intent of 10.3.13.2 (a), liability to pay contributions, where development approval condition clearance is the payment trigger, is tied to issue of clearance.

This section should be read in conjunction with section 3.4.6.

6.4 Payment of Contributions

This matter is dealt with in Clauses 10.3.14 of TPS 2.

6.5 Arbitration

This matter is dealt with in Clause 10.3.19 of TPS 2.

6.6 Implementation

Development contributions may be calculated and applied as conditions of subdivision, strata subdivision and development.

6.7 Form of Contributions

Pursuant to Clause 10.3.14 of TPS 2, conditions relating to development contribution requirements can, to the satisfaction of the Shire, be satisfied by:

- The ceding of land;
- The construction of infrastructure works which are transferred to public authorities on completion;
- The provision of monetary contributions to acquire land or undertake works by the Shire, public authorities or others were covered by the DCP; or
- A combination of the above.

6.8 Pre-funding of Infrastructure Items

6.8.1 Context

Where:

- The Developer wishes to undertake works specified in Appendix 16A;
- The works are necessary for the progression of an approved subdivision; and,
- The Shire does not hold sufficient DCP funds to undertake the works and/or has not prioritised such works, the Shire will support pre-funding and delivery of the infrastructure provided there are good reasons for doing so.

6.8.2 Pre-funding Agreement

By way of an exchange of letters, the Shire and the Developer will agree the extent, composition and timing of the infrastructure works to be pre-funded. Once agreed, the works become the Approved Works. The Approved Works must be identified sufficiently to ensure the cost and quantities of remaining works in that item can be quantified. This is particularly relevant where linear rates are involved.

6.8.3 Principles for Cost Recoupment

The recoup is to be based on the Current Cost Estimate in Accordance with TPS 2 clause 10.3.11 whereby:

- The current cost estimate (excluding contingency allowance) as described in the prevailing DCP Report shall constitute the claimable amount for the completed Approved Works;
- The cost estimate will be subject to escalation at the rate prescribed from time to time in the
- DCP Report up to the time of agreed practical completion of the works;
- The cost estimate may be revised due to the periodic Cost Review in which case the updated cost estimate will prevail;

- If the actual cost of the works exceeds the escalated cost estimate, the developer may claim an additional amount not exceeding the contingency allowance provided for this item of work. Such a claim shall be independently substantiated to the satisfaction of the Shire;
- Credit for land will be at valuation in accordance with 10.3.13 of TPS 2 where the valuation is current at time of transfer.

Note: Grants or other external Funding shall be deducted from any recoup or credit to the account of the developer.

6.8.4 Acceptance of Works

The Developer shall ensure the works are:

- Undertaken in a proper and workmanlike manner;
- In accordance with plans and specifications constituting the Approved Works;
- Completed within the agreed period.

Following written notification from the Developer that the Approved Works are complete as above, the Shire will confirm the delivery of the Approved Works to its satisfaction.

The Shire can modify, accept or reject the claim where justified, following review of standard and cost. Referral to the Byford Industry Reference Group for comment should be made where rejection of the claim is proposed.

6.8.5 Accounting for Recoupment

On acceptance of the approved Works by the Shire, the cost of the works shall be credited to the DCP account **of the Developer**.

The balance in this account may be used to offset any cost contribution liabilities owed by the Developer.

Any balance owed to the Developer on completion of all subdivision on land held by the

Developer within the Byford DSP area shall be paid to the Developer within 90 days of the condition clearance of the final subdivision in the DSP area subject to:

- there being sufficient funds available in the DCP account; and
- having regard to the business plan by the Shire for delivery of outstanding DCP works.

7. Examples of Calculation

The following examples are provided to explain the method of calculating the development contribution applicable to a certain development scenario.

7.1 Precinct A

Example 1

A residential subdivision creating 50 additional lots within precinct A.

Precinct	Development contribution rate per lot/dwelling	Number of additional lots/dwellings	Total development contribution
A	\$13,340	50	\$667,000

Example 2

A residential subdivision creating 100 additional lots within precinct A and providing 1 hectare of public open space adjacent to residential development.

Precinct	Development contribution rate per lot/dwelling	Number of additional lots/dwellings	Total development contribution
A	\$13,340	100	\$1,334,000
Public open space credit	Amount of public open space and drainage land being provided	Land value per hectare	Credit amount
A	1ha	\$535,000	\$535,000
		Total net development contribution	\$799,000

7.2 Precinct B

Example 3

A commercial development on a 4000m² lot within precinct B.

4500m² (lot size) / 450m² (average lot size under the R20 residential density code) –one lot

=

9 lots/dwellings (yield calculation for the purposes of determining development contribution for commercial development – 4500/450 = 10 less original lot = 9)

Precinct	Development contribution rate per lot/dwelling	Number of additional lots/dwellings	Total development contribution
B	\$9,647	9	\$86,823

7.3 Precinct C

A mixed-use development on a 9,000m² lot incorporating seven residential dwellings within precinct C.

In the context of mixed use development, the contribution rate is based upon the subdivision/development potential of the subject site based on a residential density code of R20 or the number of lots/dwellings created, whichever is the greater.

Calculation 1 – Subdivision/development potential of the site based on a residential density code of R20:

9000m² (lot size) / 450m² (average minimum lot size under the R20 residential density code)

= 20 lots/dwellings

Or

Calculation 2 – The number of dwellings created.

= 8 residential dwellings

The contribution rate will be based upon 19 lots/dwellings being created, as this is the greater of calculations 1 and 2 (minus original one lot/dwelling).

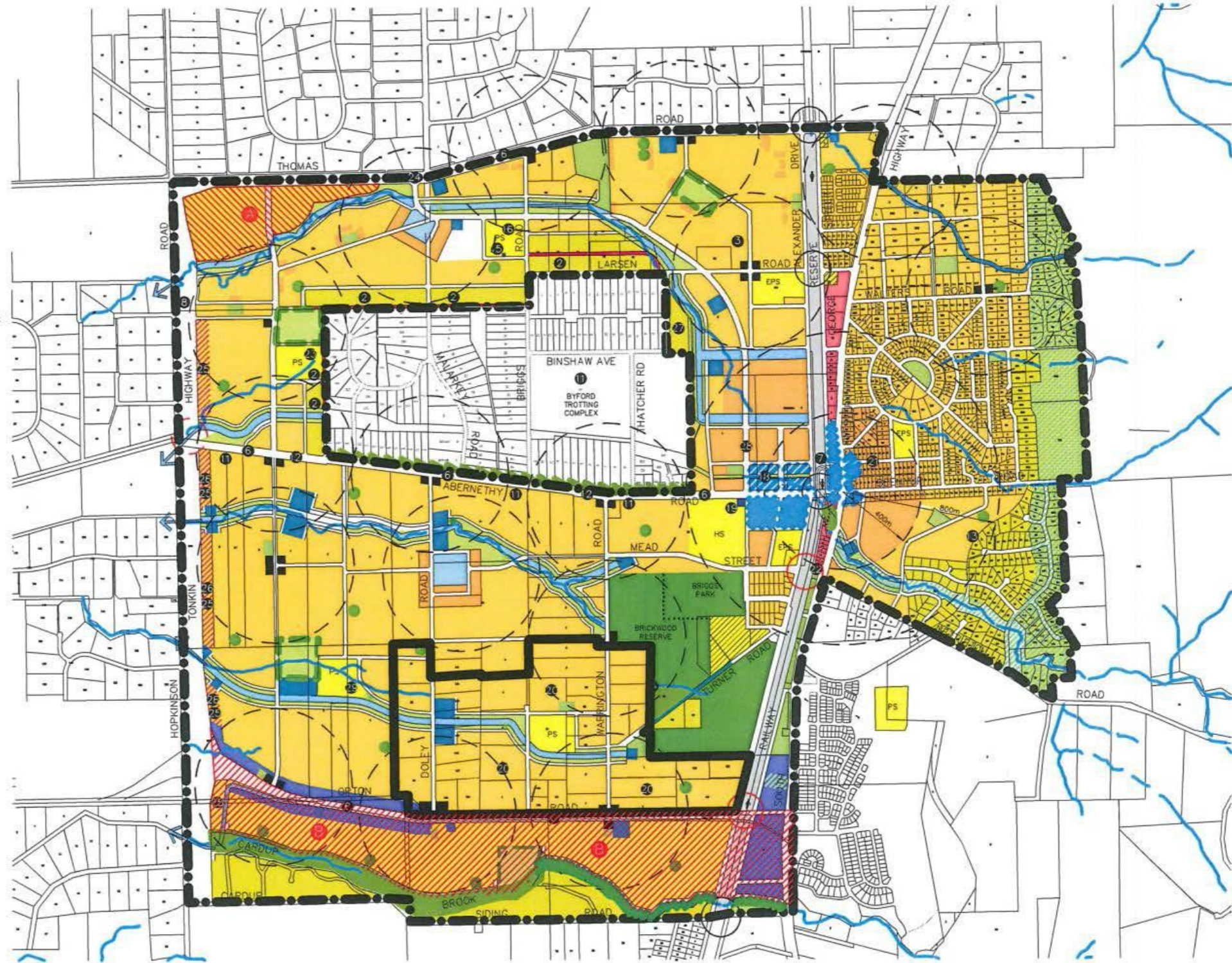
Precinct	Development contribution rate per lot/dwelling	Number of additional lots/dwellings	Total development contribution
C	\$4,484	19	\$85,196

8. Figures

8.1 Figure 1 - Byford DSP Map

Figure 1 – Byford District Structure Plan Map

- LEGEND**
- STRUCTURE PLAN AREA
 - DOLEY/WARRINGTON ROAD PREDICT BOUNDARY
 - RURAL RESIDENTIAL
 - RESIDENTIAL (R20)
 - RESIDENTIAL (R30-60)
 - LAND SUBJECT TO FURTHER STUDY. SEE NOTES 25 & 26 WHERE APPLICABLE
 - TOWN CENTRE
 - TOWN CENTRE SUBJECT TO LOCAL STRUCTURE PLAN AND DETAILED AREA PLAN AND DESIGN GUIDELINES
 - NEIGHBOURHOOD CENTRE
 - HIGHWAY COMMERCIAL
 - COMMUNITY PURPOSE
 - NEIGHBOURHOOD NODE
 - SCHOOLS
 - EPS – Existing Primary School
 - PS – Primary School
 - HS – High School
 - MIXED BUSINESS
 - MULTIPLE USE CORRIDOR (MUC)
 - WATERWAY
 - DRAINAGE BASIN INDICATIVE LOCATION
 - FUTURE ROADS
 - EXISTING MRS REGIONAL PARKS AND RECREATION RESERVE
 - EXISTING LOCAL PUBLIC OPEN SPACE
 - PROPOSED LOCAL PARK (Approx. 3000m²)
 - PROPOSED LOCAL PARK WITHIN MUC
 - PROPOSED NEIGHBOURHOOD PARK (Approx. 4000m²)
 - PROPOSED NEIGHBOURHOOD PARK WITHIN MUC
 - DISTRICT RECREATION (Approx. 4ha)
 - CONSERVATION
 - FORESHORE RESERVE
 - PUBLIC PURPOSES
 - BUFFER BETWEEN TROTTING COMPLEX/EQUESTRIAN RELATED ACTIVITIES AND RESIDENTIAL AREA INCLUDED WITHIN LISTING LOTS
 - AREA OF LANDSCAPE SENSITIVITY
 - DRAINAGE DIRECTION FLOW
 - UNCONSTRUCTED ROAD / BRIDLE PATH
 - SHARPER ROAD – POSSIBLE CLOSURE SUBJECT TO FURTHER INVESTIGATIONS BY COUNCIL
 - RAILWAY CROSSINGS
 - POTENTIAL RAIL CROSSING SUBJECT TO FURTHER INVESTIGATIONS
 - POSSIBLE FUTURE GRADE SEPARATED CROSSING
 - POSSIBLE FUTURE RAILWAY STATION
 - LAND SUBJECT TO FURTHER STUDY TO ADDRESS THE REQUIREMENTS FOR DRAINAGE AND DETAILED STRUCTURE PLANNING. CONSIDERATION TO BE GIVEN TO THE PROPOSED ALIGNMENT OF THE TOWNKIN HIGHWAY PRIMARY REGIONAL ROAD RESERVATION.
 - LAND SUBJECT TO FURTHER STUDY – PLANNING TO BE FINALISED SUBJECT TO RESOLUTION OF ALIGNMENT OF OPTION ROAD



This is a District Structure Plan and shall be used as a basis for more detailed planning when read in conjunction with other documents and the Byford Structure Plan report

This Plan should be read in conjunction with Schedule 1 - Operative Part

FIGURE 1: BYFORD DISTRICT STRUCTURE PLAN

DATE 10.08.2010
DWG NO 004

REV B
SCALE NTS



8.2 Figure 2 – Byford Development Contribution Area

Figure 2 – Byford Development Contribution Area

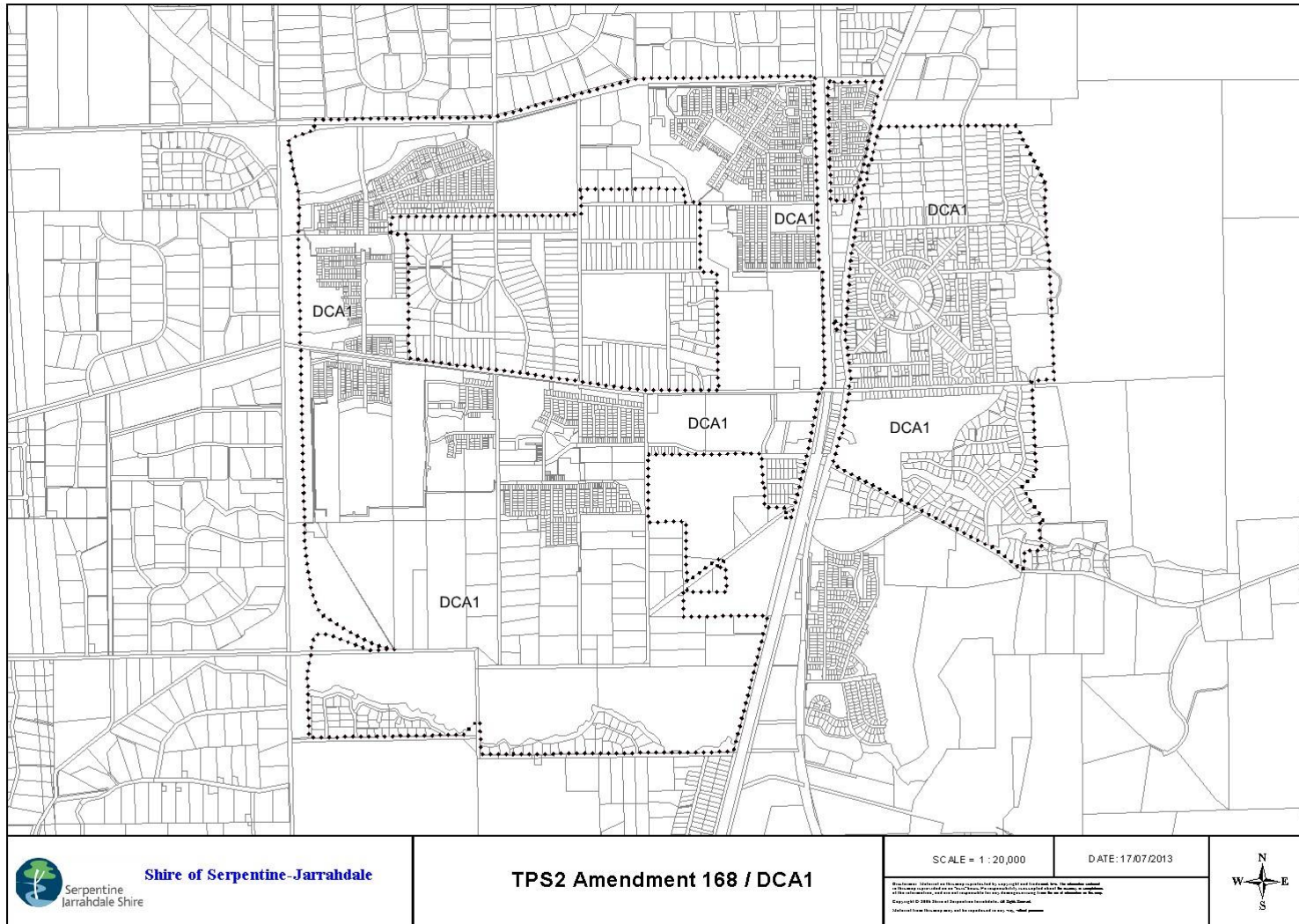


Figure 3 – Roads to be upgraded and/or constructed through DCA1

LEGEND:

GENERAL EXTENT OF ROAD UPGRADE AND/OR CONSTRUCTION

-  THOMAS ROAD 50m road reserve
-  ABERNETHY ROAD 30m road reserve
-  ORTON ROAD 30m road reserve
-  KARDAN BOULEVARD 30m road reserve
-  KARDAN BOULEVARD 25m road reserve
-  SAN SIMEON BOULEVARD 25m road reserve
-  DOLEY ROAD 30m road reserve
-  WARRINGTON ROAD 20m road reserve

TRAFFIC CONTROL DEVICES

-  TRAFFIC LIGHT
-  ROUND ABOUT
-  INTERSECTION TREATMENT
SLIP LANES AND ASSOCIATED WORKS

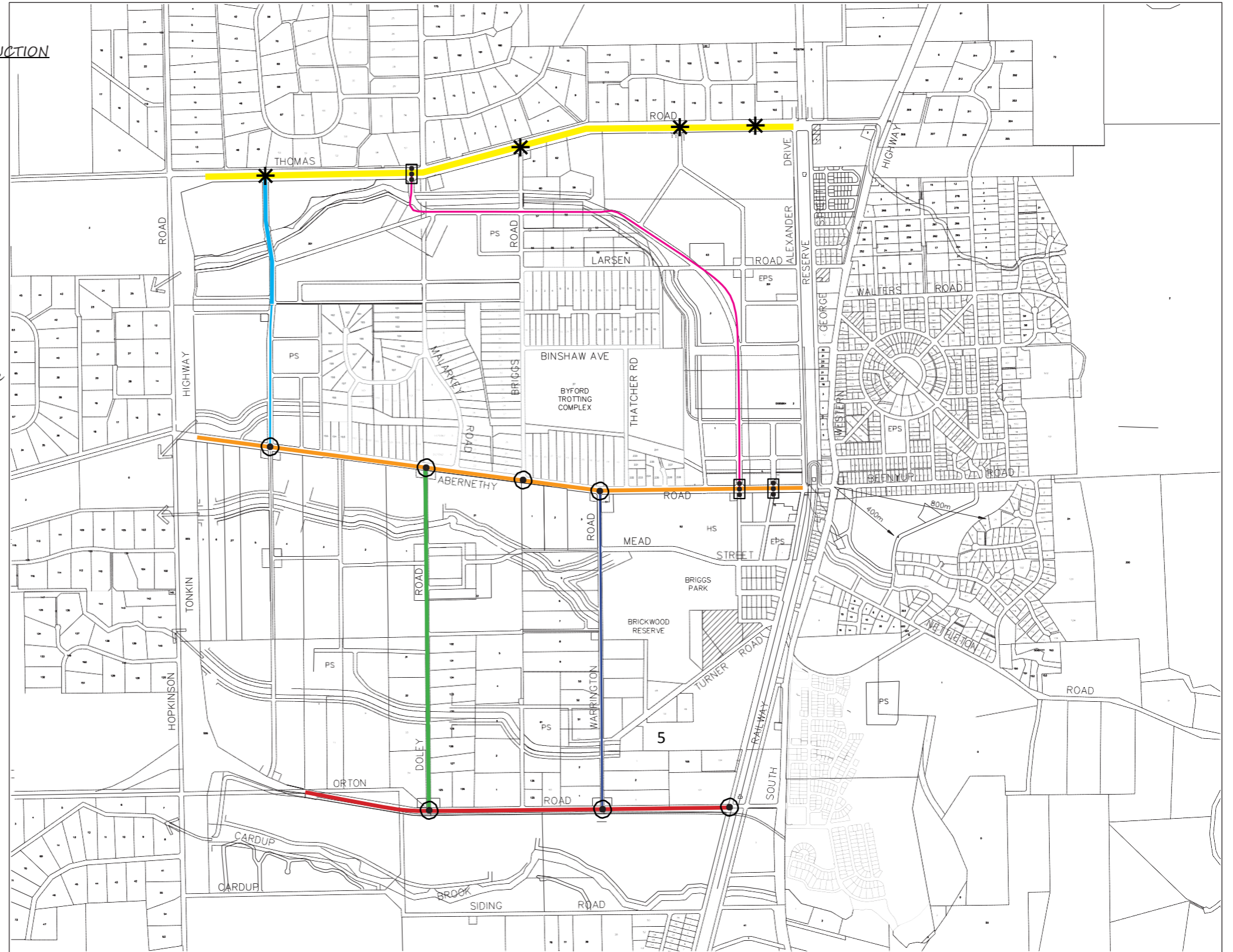


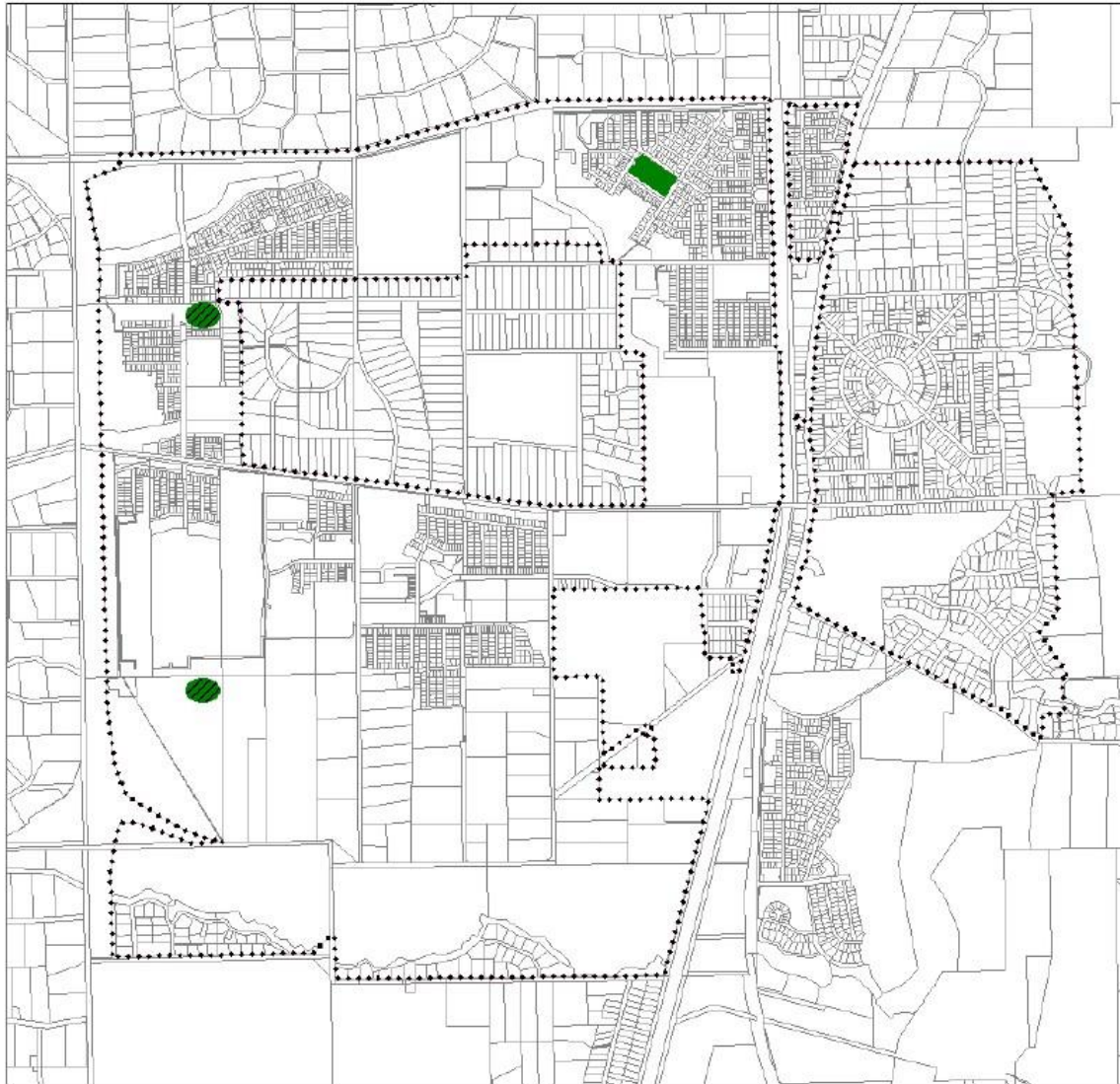
FIGURE 3: ROADS TO BE UPGRADED AND/OR CONSTRUCTED THROUGH THE DEVELOPMENT CONTRIBUTION ARRANGEMENT (AND TRAFFIC CONTROL DEVICES)

DATE
10.08.2010
DWG NO
001

REV B
SCALE
NTS



8.3 Figure 4 – District Open Space to be improved and/or constructed through DCA1

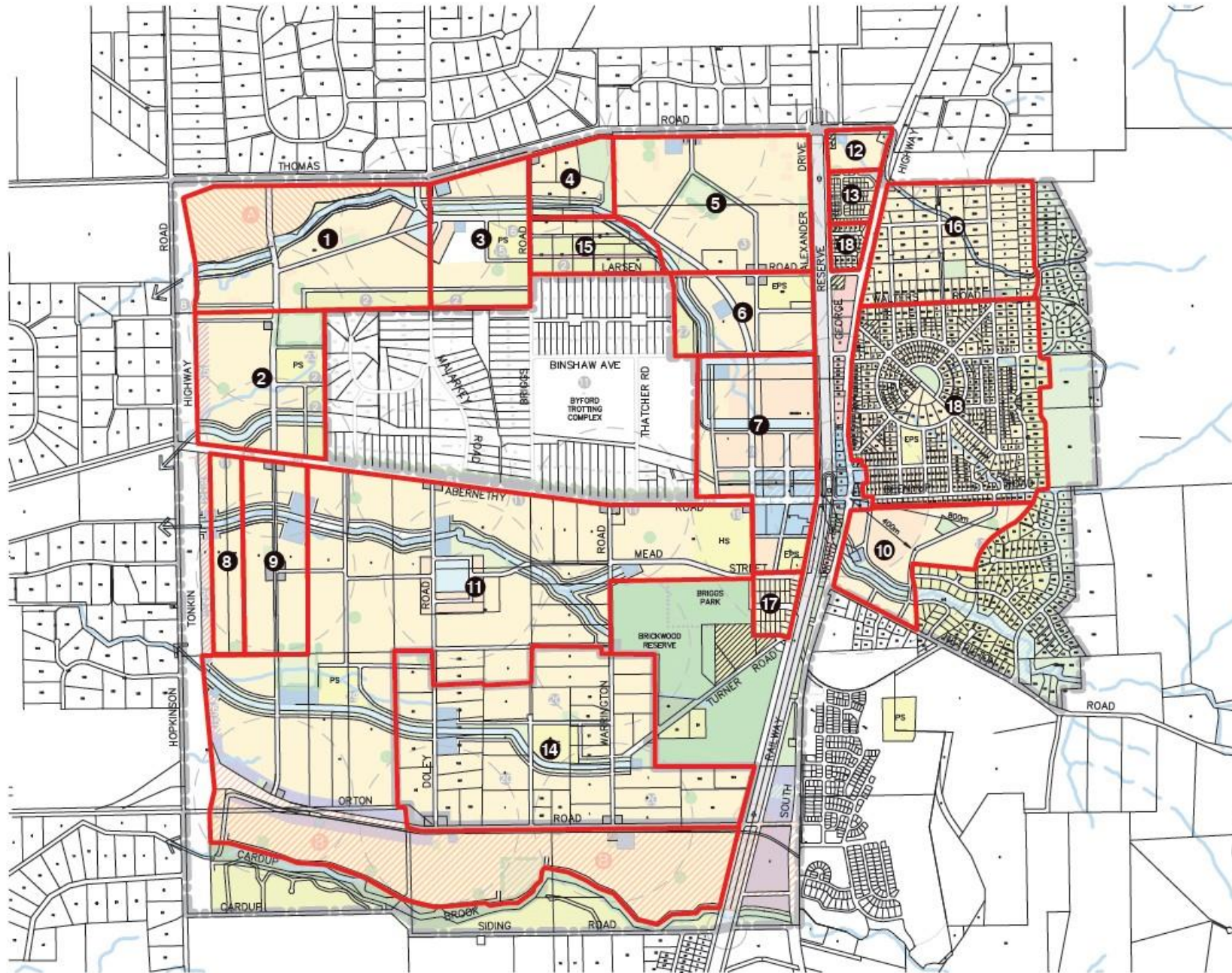


LEGEND

- BYFORD DEVELOPMENT CONTRIBUTION AREA
- DISTRICT OPEN SPACE (APPROXIMATE LOCATION)
- JOINT USE DISTRICT OPEN SPACE (APPROXIMATE LOCATION)

DISTRICT OPEN SPACE DEVELOPMENT

8.4 Figure 5 – Local Structure Plan Areas and Areas not yet subject to an LSP

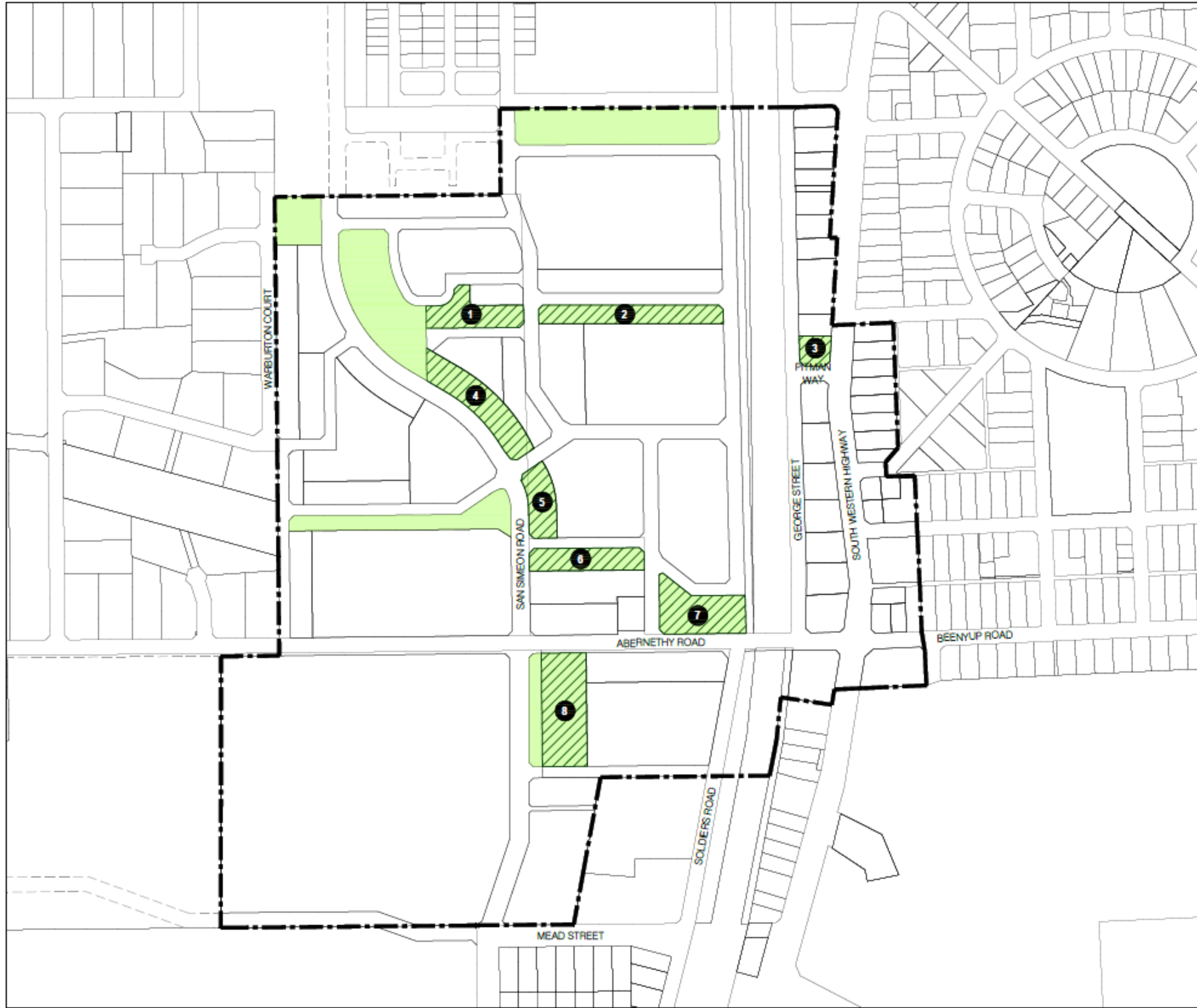


LEGEND:

- 1 Redgum
- 2 Australand
- 3 Byford Meadows
- 4 Corona North
- 5 Byford Central
- 6 Goldtune
- 7 Byford Town Centre
- 8 Corona West
- 9 Byford West
- 10 Aspen
- 11 The Glades
- 12 St Thomas Estate
- 13 Sunrys
- 14 Doley Road Precinct
- 15 Briggs Road Precinct
- 16 Stanley Road Precinct
- 17 Mead Street
- 18 Old Quarter



8.5 Figure 6 – Non-Residential Land Rates Map



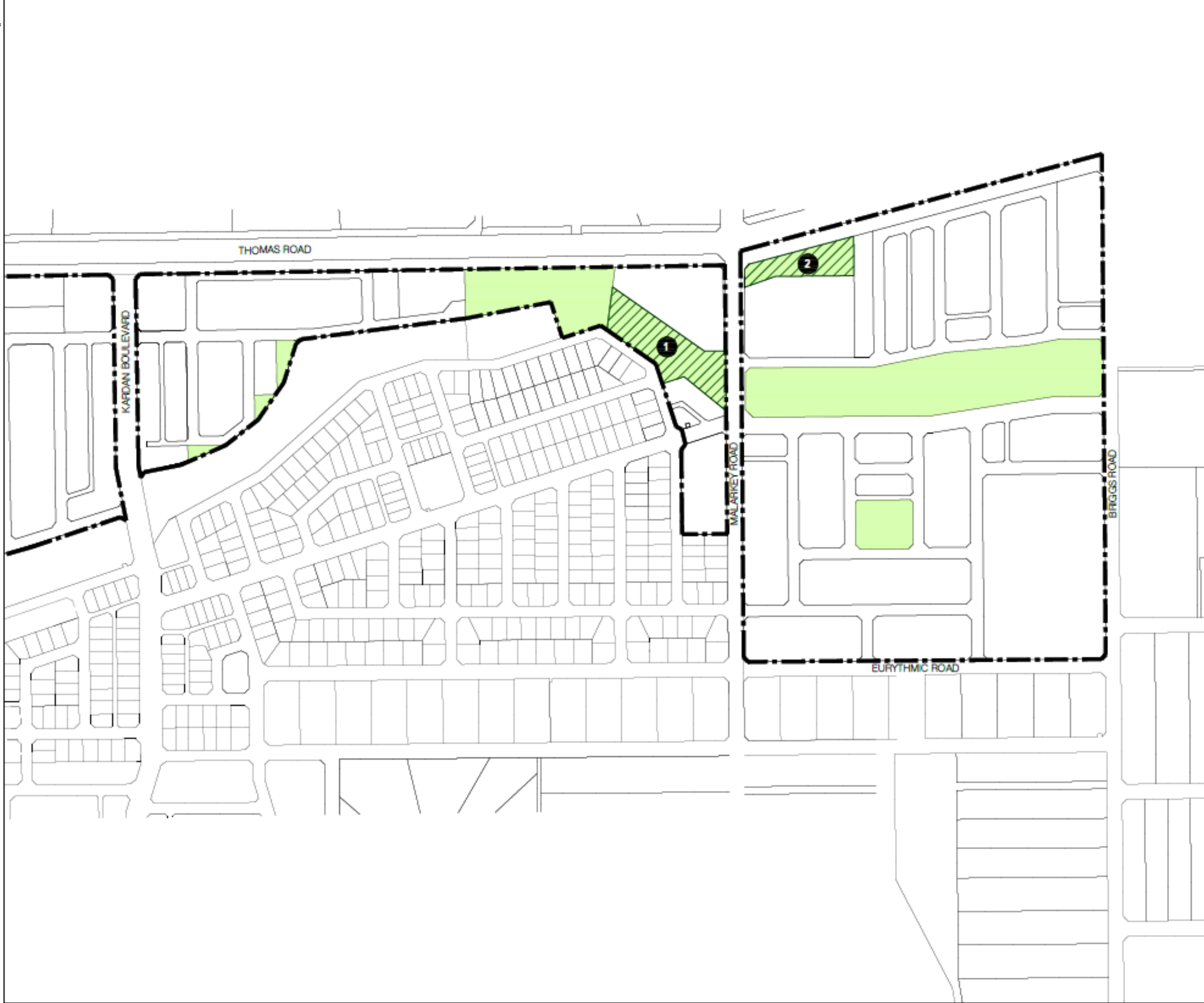
LEGEND

- LOCAL STRUCTURE PLAN AREA
- PUBLIC OPEN SPACE/DRAINAGE
- NON-RESIDENTIAL LAND RATES AREAS

NON-RESIDENTIAL RATES AREAS:

1	4,561MF
2	6,149MF
3	1,633MF
4	6,737MF
5	3,564MF
6	4,569MF
7	6,601MF
8	9,131MF
TOTAL	42,945MF

NOTES
 DETAILS SHOWN ON THIS PLAN ARE BASED UPON LOCAL STRUCTURE PLAN DESIGN LAYOUTS. ALL AREAS ARE SUBJECT TO FINAL DESIGN AND SURVEYS.



LEGEND

- LOCAL STRUCTURE PLAN AREA
- PUBLIC OPEN SPACE/DRAINAGE
- NON-RESIDENTIAL LAND RATES AREAS

NON-RESIDENTIAL RATES AREAS:

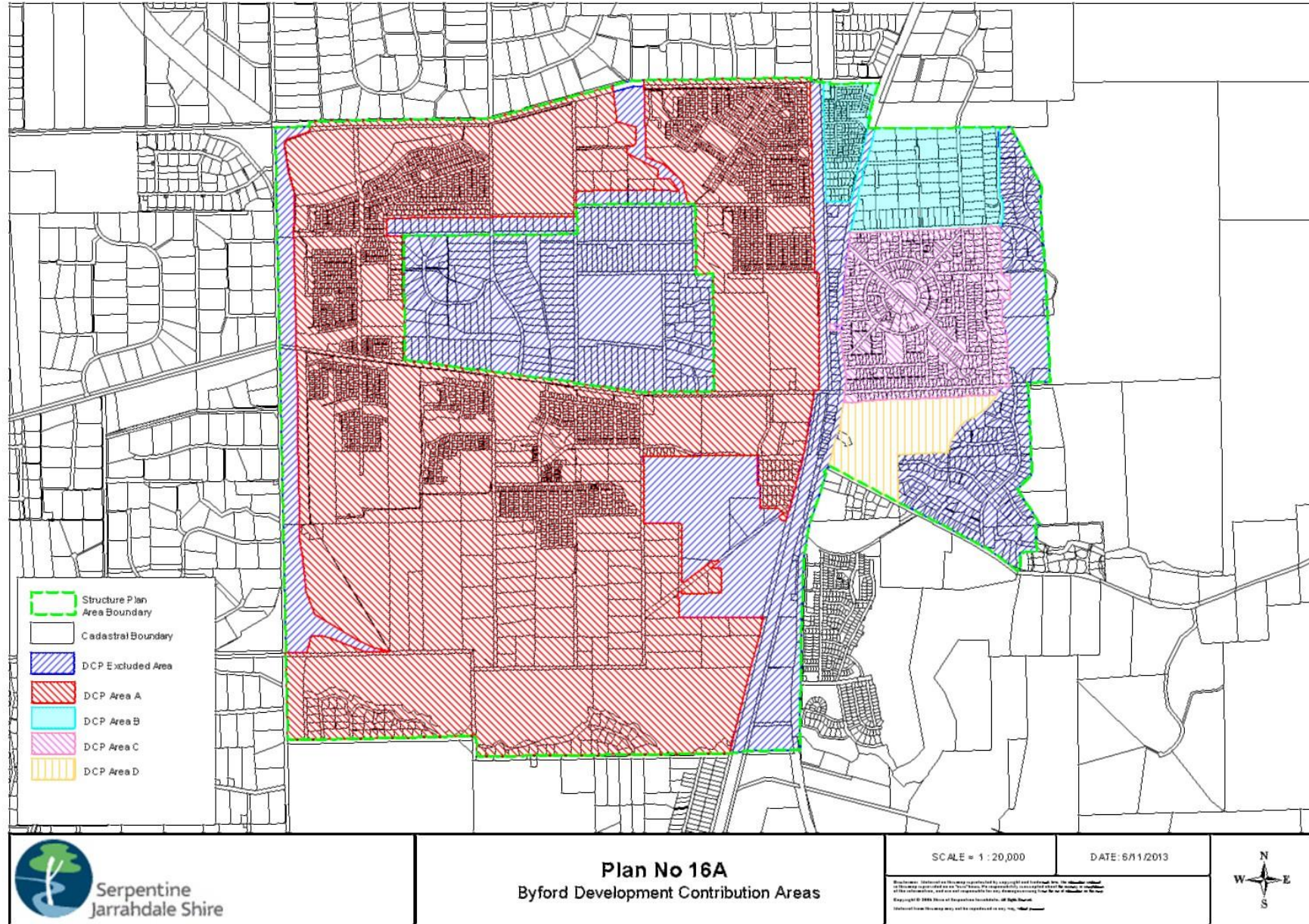
1	9,802M ²
2	5,178M ²
TOTAL	14,980M²

NOTES
 DETAILS SHOWN ON THIS PLAN ARE BASED UPON LOCAL STRUCTURE PLAN DESIGN LAYOUTS. ALL AREAS ARE SUBJECT TO FINAL DESIGN AND SURVEYS.

8.6 Figure 7 – Plan 16A of Appendix 16 of Town Planning Scheme No.2 – Precincts

PLAN NO. 16A - BYFORD DEVELOPMENT CONTRIBUTION AREAS

AMD 113 GG 30/1/07; AMD 152 GG 15/2/08; AMD 168 GG 21/01/14



9. Appendices

9.1 Appendix A – Roads: Thomas Road, Orton Road, Kardan Boulevard, San Simeon Boulevard, Doley Road and Warrington Road

9.2 Appendix B – Abernethy Road (100% Design)

Shire of Serpentine Jarrahdale RLB Review of Abernethy Road Cost Estimate

RLB				DCP				
Item #	Description	Quantity	Unit	Unit Rate	Amount	Unit Rate	Amount	Difference
R2.1				Earthworks				
R2.1.1	Clearing Area	67,314.00	m2	\$ 0.43	\$ 28,945.02	\$ 0.50	33,964.15\$	5,019.13\$
R2.1.2	Topsoil Strip Area	49,410.00	m2	\$ 0.51	\$ 25,199.10	\$ 0.51	25,202.46\$	3.36\$
R2.1.3	Bulk Earthworks - CUT	11,206.00	bcm	\$ 11.57	\$ 129,653.42	\$ 11.41	127,860.46\$	1,792.96-\$
R2.1.4	Bulk Earthworks - FILL	11,938.00	ccm	\$ 19.73	\$ 235,536.74	\$ 20.81	248,429.78\$	12,893.04\$
R2.1.5	Subgrade Preparation for Pavement	48,761.00	m2	\$ 2.66	\$ 129,704.26	\$ 2.35	114,588.35\$	15,115.91-\$
R2.2				Pavement and Surfacing				
R2.2.1	30mm Wearing Course (10mm dense graded asphalt, Class 320)	43,464.00	m2	\$ 8.55	\$ 371,617.20	\$ 12.79	555,904.56\$	184,287.36\$
R2.2.2	40mm Wearing Course (10mm dense graded asphalt, Class 320)	1,756.00	m2	\$ 11.40	\$ 20,018.40	\$ 17.05	29,945.65\$	9,927.25\$
R2.2.3	10mm thick primer seal	43,464.00	m2	\$ 5.92	\$ 257,306.88	\$ 5.92	257,306.88\$	-\$
R2.2.4	200mm Gravel/Crushed Rock Base	34,826.00	m2	\$ 29.33	\$ 1,021,446.58	\$ 20.31	707,199.97\$	314,246.61-\$
R2.2.5	200mm Crushed Limestone Subbase	23,213.00	m2	\$ 15.90	\$ 369,086.70	\$ 13.59	315,464.67\$	53,622.03-\$
R2.2.6	150mm Crushed Limestone Subbase	8,637.00	m2	\$ 12.31	\$ 106,321.47	\$ 10.19	88,032.62\$	18,288.85-\$
R2.2.7	50mm Intermediate Course (14mm Dense Graded Asphalt)	8,637.00	m2	\$ 31.08	\$ 268,437.96	\$ 27.24	235,271.88\$	33,166.08-\$
R2.2.8	250mm Intermediate Course (20mm Dense Graded Asphalt)	8,637.00	m2	\$ 37.06	\$ 320,087.22	\$ 113.27	978,336.55\$	658,249.33\$
R2.2.9a	Mountable Kerbing (Trafficable centre of roundabouts and driveway openings)	684.00	m	\$ 41.85	\$ 28,625.40	\$ 41.85	28,625.40\$	-\$
R2.2.9b	Semi Mountable Kerbing	9,828.00	m	\$ 36.07	\$ 354,495.96	\$ 21.04	206,781.12\$	147,714.84-\$
R2.2.9c	Barrier Kerbing (Non-trafficable centre of roundabouts)	206.00	m	\$ 49.06	\$ 10,106.36	\$ 31.56	6,501.36\$	3,605.00-\$
R2.2.9d	Flush Kerbing	78.00	m	\$ 56.28	\$ 4,389.84	\$ 55.00	4,290.00\$	99.84-\$
R2.2.10	Brick Paving units on and including 30mm sand bedding (in all medians, trafficable islands and raised large vehicle overrun areas on roundabouts)	0	m2	\$ 121.21	\$ -	\$ 60.21	-\$	-\$
R2.2.10a	Construct 150mm thick class N20 concrete, broom finished landscape concrete works	512.00	m3	\$ 1,131.60	\$ 579,379.20	\$ 397.46	203,499.52\$	375,879.68-\$
R2.2.11	Construct 100mm thick class N20 concrete, broom finished dual use pathway with control joints at 1.25m centres and 12mm wide expansion joints at 5m centres	11,955.00	m2	\$ 143.38	\$ 1,714,107.90	\$ 59.62	712,757.10\$	1,001,350.80-\$
R2.2.12	Shared Path (2.5m wide) Tactile Ground Surface Indicators	100.00	No.	\$ 80.81	\$ 8,081.00	\$ 43.90	4,390.00\$	3,691.00-\$
R2.2.16	New and Reinstated Driveways	43.00	No.	\$ 1,949.81	\$ 83,841.83	\$ 1,949.81	83,841.83\$	-\$
R2.3				Drainage Basins				
R2.3.1	Upgrade existing swale drains along access road to Specification	4.00	No.	\$ 506.00	\$ 2,024.00	\$ 506.00	2,024.00\$	-\$
R2.3.2	Drainage basin (1) at Bradley Close (Approx. cut volume 634 m³ and Approx. fill volume 1071 m³)	1.00	No.	\$ 45,772.00	\$ 45,772.00	\$ 29,521.45	29,521.45\$	16,250.55-\$
R2.3.3	Drainage basin (2) at Renaud Way (Approx. cut volume 1215 m³ and Approx. fill volume 130 m³)	1.00	No.	\$ 19,022.00	\$ 19,022.00	\$ 16,568.45	16,568.45\$	2,453.55-\$
R2.3.4	Drainage basin (3) after Tourmaline Boulevard (Approx. cut volume 125 m³)	1.00	No.	\$ 4,015.00	\$ 4,015.00	\$ 4,735.15	4,735.15\$	720.15\$
R2.3.5	Basin outlet structure to Beenyup Brook (overflow pit, RCP 300mm, floodgate)	2.00	No.	\$ 8,002.00	\$ 16,004.00	\$ 8,002.00	16,004.00\$	-\$
R2.3.6	Bio Filtration Basin - Public Access Way 1 (Approx. Cut 639 m³)	1.00	No.	\$ 9,119.00	\$ 9,119.00	\$ 7,290.99	7,290.99\$	1,828.01-\$
R2.3.7	Bio Filtration Basin - Public Access Way 2 (Approx. Cut 397 m³)	1.00	No.	\$ 5,658.00	\$ 5,658.00	\$ 4,529.77	4,529.77\$	1,128.23-\$
R2.3.8	Bio Filtration Basin - Public Access Way 3 (Approx. Cut 305 m³)	1.00	No.	\$ 5,658.00	\$ 5,658.00	\$ 3,480.05	3,480.05\$	2,177.95-\$
Redundant Culverts								
R2.3.9	Removal of existing 300 mm diameter pipe culvert and backfilling excavations	211.00	m	\$ 18.74	\$ 3,954.14	\$ 18.74	3,954.14\$	-\$
R2.3.10	Removal of existing 375 mm diameter pipe culvert and backfilling excavations	114.00	m	\$ 22.96	\$ 2,617.44	\$ 22.96	2,617.44\$	-\$
R2.3.11	Removal of existing 450 mm diameter pipe culvert and backfilling excavations	208.00	m	\$ 27.73	\$ 5,767.84	\$ 27.73	5,767.84\$	-\$
R2.3.12	Removal of existing 525 mm diameter pipe culvert and backfilling excavations	37.00	m	\$ 32.87	\$ 1,216.19	\$ 32.87	1,216.19\$	-\$
R2.3.13	Removal of existing 600 mm diameter pipe culvert and backfilling excavations	5.00	m	\$ 38.60	\$ 193.00	\$ 38.60	193.00\$	-\$
R2.3.14	Removal of existing box culvert and backfilling excavations	16.00	m	\$ 40.90	\$ 654.40	\$ 40.90	654.40\$	-\$
R2.3.15	Removal of existing culvert end treatment (All sizes)	57.00	m	\$ 29.28	\$ 1,668.96	\$ 29.28	1,668.96\$	-\$
Reinforced Concrete Pipes Class 2								
R2.3.16	300 Diameter drain in trench, depth not exceeding 1.5m	2,190.00	m	\$ 158.29	\$ 346,655.10	\$ 138.68	303,709.20\$	42,945.90-\$
R2.3.17	375 Diameter drain in trench, depth not exceeding 1.5m	1,365.00	m	\$ 197.35	\$ 269,382.75	\$ 168.01	229,333.65\$	40,049.10-\$
R2.3.18	450 Diameter drain in trench, depth not exceeding 1.5m	910.00	m	\$ 245.76	\$ 223,641.60	\$ 209.22	190,390.20\$	33,251.40-\$

R2.3.19	525 Diameter drain in trench, depth not exceeding 1.5m	106.00	m	\$ 267.02	\$ 28,304.12	\$ 226.97	24,058.82\$	4,245.30-\$
Reinforced Concrete Pipes Class 4								
R2.3.20	300 Diameter drain in trench, depth not exceeding 1.5m	227.00	m	\$ 282.89	\$ 64,216.03	\$ 240.45	54,582.15\$	9,633.88-\$
R2.3.21	375 Diameter drain in trench, depth not exceeding 1.5m	275.00	m	\$ 344.01	\$ 94,602.75	\$ 292.41	80,412.75\$	14,190.00-\$
R2.3.22	450 Diameter drain in trench, depth not exceeding 1.5m	177.00	m	\$ 404.49	\$ 71,594.73	\$ 343.81	60,854.37\$	10,740.36-\$
R2.3.23	525 Diameter drain in trench, depth not exceeding 1.5m	38.00	m	\$ 433.68	\$ 16,479.84	\$ 368.62	14,007.56\$	2,472.28-\$
Drainage Structures								
R2.3.24	Standard Trapped Junction Pit 1050 (Manhole)	3.00	No.	\$ 7,540.00	\$ 22,620.00	\$ 5,250.00	15,750.00\$	6,870.00-\$
R2.3.25	Standard Side Entry Gully 1050	70.00	No.	\$ 6,977.81	\$ 488,446.70	\$ 4,250.00	297,500.00\$	190,946.70-\$
R2.3.26	Standard Headwall to accommodate 375 dia. pipe	12.00	No.	\$ 1,063.20	\$ 12,758.40	\$ 1,063.20	12,758.40\$	-\$
R2.3.27	Standard Gully Pits	3.00	No.	\$ 7,540.00	\$ 22,620.00	\$ 3,750.00	11,250.00\$	11,370.00-\$
R2.3.28	150mm Diameter slotted PVC pipe subsoil drain including filter aggregate, geotextile lining and drainage layer	5,288.00	m3	\$ 124.45	\$ 658,091.60	\$ 70.29	371,693.52\$	286,398.08-\$
R2.3.29	Cleanout/flushout point to 150mm diameter pipe subsoil drain including concrete cover and removable cap (60m spacings)	88.00	No.	\$ 6,503.19	\$ 572,280.72	\$ 4,250.00	374,000.00\$	198,280.72-\$
R2.3.30	1.8m Chainlink Fencing	650.00	m	\$ 64.93	\$ 42,204.50	\$ 37.94	24,661.00\$	17,543.50-\$
R2.3.31	3m Wide Single Gate	2.00	No.	\$ 649.00	\$ 1,298.00	\$ 649.00	1,298.00\$	-\$
R2.3.32	Removal of existing drainage structure Manhole	5.00	No.	\$ 122.10	\$ 610.50	\$ 487.50	2,437.50\$	1,827.00\$
R2.3.33	Removal of existing drainage structure Grate	3.00	No.	\$ 101.00	\$ 303.00	\$ 487.50	1,462.50\$	1,159.50\$
R2.3.34	Removal of existing drainage structure SEP	4.00	No.	\$ 127.00	\$ 508.00	\$ 487.50	1,950.00\$	1,442.00\$
R2.3.35	Limestone spalls (headwall outlets)	20.00	m2	\$ 85.30	\$ 1,706.00	\$ 75.96	1,519.20\$	186.80-\$
R2.3.36	Limestone spalls (basin inlets)	5.00	m2	\$ 85.30	\$ 426.50	\$ 75.96	379.80\$	46.70-\$
R2.3.37	Gabions (basin outlet structures)	8.00	m2	\$ 3,601.90	\$ 28,815.20	\$ 3,601.90	28,815.20\$	-\$
R2.3.38	Geotextile Lining	23.00	m2	\$ 6.00	\$ 138.00	\$ 6.00	138.00\$	-\$
R2.3				Rain Gardens				
R2.3.39	RAIN GARDEN TYPE 1 - Replaced quantity from 20 No. to 25 No	25.00	No.	\$ 24,704.85	\$ 617,621.25	\$ 24,704.85	617,621.25\$	-\$
R2.3.40	RAIN GARDEN TYPE 2	17.00	No.	\$ 31,426.10	\$ 534,243.70	\$ 31,426.10	534,243.70\$	-\$
R2.4				Traffic Facilities				
R2.4.1	Signs (Provisional Sum)	1.00	PSum	\$ 52,817.00	\$ 52,817.00	\$ 52,817.00	52,817.00\$	-\$
R2.4.2	Pavement Marking (Provisional Sum)	1.00	PSum	\$ 32,837.00	\$ 32,837.00	\$ 32,837.00	32,837.00\$	-\$
R2.4.3	Traffic Management (Provisional Sum)	1.00	PSum	\$ 604,794.00	\$ 604,794.00	\$ 604,794.00	604,794.00\$	-\$
Net Construction Cost (excluding GST)				\$ 10,999,749.40			\$ 9,013,694.92	
General Items								
Contractor Preliminaries		22%		\$ -			1,983,012.88\$	
R2.5				Provisional Sums				
R2.5.1	Design and Investigation (Provisional)	1.00	PSum	\$ 741,000.00	\$ 741,000.00	\$ 741,000.00	741,000.00\$	-\$
R2.5.2	Project Management (Provisional)	1.00	PSum	\$ 530,000.00	\$ 530,000.00	\$ 530,000.00	530,000.00\$	-\$
R2.5.3	As Constructed Drawings (Provisional)	1.00	PSum	\$ 50,000.00	\$ 50,000.00	\$ 50,000.00	50,000.00\$	-\$
R2.5.4	Western Power Roadway Lighting (Provisional)	1.00	PSum	\$ 400,000.00	\$ 400,000.00	\$ 400,000.00	400,000.00\$	-\$
R2.5.5	Western Power Underground Power (Provisional)	1.00	PSum	\$ 2,200,000.00	\$ 2,200,000.00	\$ 2,200,000.00	2,200,000.00\$	-\$
R2.5.6	Telstra (Provisional)	1.00	PSum	\$ 3,200,000.00	\$ 3,200,000.00	\$ 3,200,000.00	3,200,000.00\$	-\$
R2.5.7	Westnet Energy (Provisional)	1.00	PSum	\$ 420,000.00	\$ 420,000.00	\$ 420,000.00	420,000.00\$	-\$
R2.5.8	Water Corporation (Provisional)	1.00	PSum	\$ 290,000.00	\$ 290,000.00	\$ 290,000.00	290,000.00\$	-\$
Estimated Project Cost (excluding GST)		\$ 18,830,749.40		\$ 18,827,707.80			-\$ 3,041.60	

9.3 Appendix C – Byford South / the Glades District Open Space

**Shire of Serpentine Jarrahdale
Byford South/The Glades DOS Oval
Summary of Estimated Costs**

Cost of Works	Estimated Cost (excl GST)
Civil and drainage*	\$ 738,027
Irrigation	\$ 80,000
Landscape & Maintenance (turf grassing & 12 months maintenance)	\$ 237,000
Subtotal for works	\$ 1,055,027
Fees for Service	
Engineer	\$ 45,935
Surveyor	\$ 11,050
Landscape Architect	\$ 18,012
Project Management	\$ 42,360
Contingency (5%)	\$ 5,868
Subtotal for service	\$ 123,225
Total Costs	\$1,178,252

Civil and Drainage Breakdown*				
Prelims and Establishment	Qty	Unit	Rate	Total
Mob/demob	1	Item	\$ 5,000	\$ 5,000
Insurances	1	Item	\$ 5,000	\$ 5,000
BCTIF Levy	1	Item	\$ 2,500	\$ 2,500
PMP	1	Item	\$ 1,000	\$ 1,000
Dust Bond	1	Item	\$ 3,500	-
Supervision	4	Weeks	\$ 3,000	\$ 12,000
Survey	4	Weeks	\$ 1,085	\$ 4,340
Water for Construction	1	Item	\$ 5,000	\$ 5,000
Subtotal				\$ 34,840
Siteworks and Dust Control	Qty	Unit	Rate	Total
Windbreak Fencing	400	m	\$ 16.16	\$ 6,464
Dust Control during Contract	4	Weeks	\$ 500	\$ 2,000
Contactors Site Accommodation	4	Weeks	\$ 400	\$ 1,600
Maintenance of haul road	4	Weeks	\$ 250	\$ 1,000
Dustex application	4	Weeks	\$ 1,500	\$ 6,000
Subtotal				\$ 17,064
Earthworks	Qty	Unit	Rate	Total
Clearing	1	Item	\$ 10,100	\$ 10,100
Topsoil stripping and stockpile	20,000	m ²	\$ 0.27	\$ 5,400
Topsoil screening and replacement (not allowed)				-
Proof Rolling	20,000	m ²	\$ 0.09	\$ 1,800
Geotech certification	1	Item	\$ 2,500	\$ 2,500
Cut to fill to achieve subgrade	9,875	m ³	\$ 3.07	\$ 30,316
Cut to stockpile	1,000	m ³	\$ 3.07	\$ 3,070
Import Fill (700mm Sand Layer)	13,825	m ³	\$ 24.24	\$ 335,118
Import Fill (300mm Sports Media Layer)	5,925	m ³	\$ 24.24	\$ 143,622
QA Testing	1	Item	\$ 5,000	\$ 5,000
Subtotal				\$ 536,926
Stormwater Drainage	Qty	Unit	Rate	Total
Preliminaries	1	Item	\$ 6,000	\$ 6,000
Excavate and backfill 0-2m	900	m	\$ 26.30	\$ 23,670
Sand bedding and cover	900	m	\$ 8.76	\$ 7,884
Placement of AG lime	900	m	\$ 3.07	\$ 2,763
Supply and cart AG lime to trench	10	Item	\$ 40.00	\$ 400

Supply and install subsoil drainage	900	m	\$ 46.46	\$ 41,814
Junction Pits	2	Item	\$ 2,000	\$ 4,000
Locate and Protect Existing	1	Item	\$ 500	\$ 500
Survey	1	Item	\$ 2,500	\$ 2,500
D-Spec	1	Item	\$ 3,500	\$ 3,500
Subtotal				\$ 93,031
Underground Power	Qty	Unit	Rate	Total
Supply, excavate and lay 100mm duct	200	m	\$ 11.31	\$ 2,262
25mm service cable	200	m	\$ 19.00	\$ 3,800
Uni Pillar	1	Item	\$ 5,000	\$ 5,000
Joints	3	Item	\$ 320	\$ 960
Mob/Demob	1	Item	\$ 3,000	\$ 3,000
Testing	1	Item	\$ 4,000	\$ 4,000
Transport Materials	1	Item	\$ 2,000	\$ 2,000
Subtotal				\$21,022
Contract Contingency (5%)				\$35,144
Contract Total				\$ 738,027

9.4 Appendix D – Water Quality Management Costs

Item	Description	Hours Qty	People Qty	Salary \$/hr	Sample Number Qty	Sample Runs Qty	Cost Per Sample \$	Sites Qty	Rate \$	Cost	Contingency 25.0%	Annual Cost (GST Excl)	Years	Total Cost (GST Excl)
Sampling Program Management														
	Preparation of Sample and Analysis Plan (SAP)	16	1	100.00						1,600	400	2,000	1	2,000
	Sampling Preparation	36	1	200.00						7,200	1,800	9,000	5	45,000
	Sample Collection	144	1	200.00						28,800	7,200	36,000	5	180,000
	Data Management (site and program registration, data entry, validation)	37	1	100.00						3,700	925	4,625	5	23,125
	Preparation / assistance with report (Annual Report)	40	5	100.00						20,000	5,000	25,000	5	125,000
	Travel costs/courier costs	-	-	-					500.00	500	125	625	5	3,125
	Total - Sampling Program Management									61,800	15,450	77,250		378,250
Water Analysis														
	Total Nitrogen				14	9	20.00			2,520	630	3,150	5	15,750
	Dissolved Organic Nitrogen, DON				14	9	46.36			5,842	1,460	7,302	5	36,511
	Dissolved Organic Carbon, DOC				14	9	38.18			4,811	1,203	6,014	5	30,068
	Total Organic Carbon, TOC				14	9	27.27			3,436	859	4,295	5	21,477
	Total Oxidised Nitrogen, TON (NO ₃ -N + NO ₂ -N)				14	9	11.82			1,489	372	1,861	5	9,307
	Ammoniacal Nitrogen, NH ₃ -N				14	9	14.55			1,833	458	2,291	5	11,455
	Total Phosphorus				14	9	23.64			2,978	745	3,723	5	18,614
	FRP Ortho Phosphorus, PO ₄ -P				14	9	18.18			2,291	573	2,864	5	14,318
	Total Suspended Solids, TSS				14	9	15.45			1,947	487	2,434	5	12,170
	Metals Set-up (Filtered)				14	3	14.55			611	153	764	5	3,818
	Heavy Metals (Al, As, Cd, Cr, Cu, Co, Fe, Hg, Mn, Mo, Ni, Pb, Se & Zn)				14	3	65.45			2,749	687	3,436	5	17,182
	Total Recoverable Hydrocarbons (TRH)				14	3	63.64			2,673	668	3,341	5	16,705
	Polycyclic Aromatic Hydrocarbons and BTEX				14	3	65.45			2,749	687	3,436	5	17,182
	Total Water Hardness (as CaCO ₃)				14	3	10.91			458	115	573	5	2,864
	Total - Water Analysis									36,387	9,097	45,484		227,420
Sediment Analysis														
	Total Recoverable Hydrocarbons (TRH) & BTEX				14	3	56.00			2,352	588	2,940	5	14,700
	Polycyclic Aromatic Hydrocarbons (PAH)				14	3	73.00			3,066	767	3,833	5	19,163
	Metals Set-up				14	3	25.00			1,050	263	1,313	5	6,563
	Total Heavy Metals (Al, As, Cd, Ca, Cr, Cu, Fe, Pb, Mn, Hg, Ni, Se & Zn)				14	3	67.20			2,822	706	3,528	5	17,640
	Moisture				14	3	13.00			546	137	683	5	3,413
	Total - Sediment Analysis									9,836	2,459	12,296		61,478
Analysis - Other														
	Troll 9500 Profiler XP								20,000.00	20,000	5,000	25,000	1	25,000
	Distilled Water (20L)								100.00	100	25	125	5	625
	Lab Handling Fee (Per Invoice)					9			30.00	270	68	338	6	2,025
	Nitrile Gloves								100.00	100	25	125	5	625
	Total - Analysis - Other									20,470	5,118	25,588		28,275
Superficial Groundwater Monitoring														
	Installation of monitoring wells for superficial aquifer monitoring							12	2,000.00	24,000	6,000	30,000	1	30,000
	Monitor local superficial aquifer groundwater levels (Monthly) - Labour	9	1	200.00				12		21,600	5,400	27,000	5	135,000
	Monitor local superficial aquifer groundwater levels (Monthly) - Equipment								500.00	500	125	625	1	625
	Total - Superficial Groundwater Monitoring									46,100	11,525	57,625		165,625
Surface Water Level Monitoring														
	Monitor flows in Multiple Use Corridors - labour	9	1	200.00				12		21,600	5,400	27,000	5	135,000
	Installation of surface water level loggers - 12 sites							12	3,272.73	39,273	9,818	49,091	1	49,091
	Total - Surface Water Level Monitoring									60,873	15,218	76,091		184,091
	Total - Water Quality Management									235,466	58,867	294,333		1,045,139

9.5 Appendix E – Administration Costs

**Shire of Serpentine Jarrahdale
Byford Development Contribution Plan
DCP Administration**

Item	Description	Salary	On-Costs	DCP Allocation	Annual \$	Years	Total \$
A-1	Byford DCP						
A-1.1	Audit				5,000	17	85,000
A-1.2	Legal				10,000	17	170,000
A-1.3	DCP Cost Review & Consultation				15,000	17	255,000
A-1.0	Total – Byford DCP				30,000		510,000
A-2	Consultants						
A-2.1	Planning Consultant				15,000	17	255,000
A-2.2	Land Valuation				30,000	17	510,000
A-2.3	District Water Management Strategy 2016 Review				60,000	1	60,000
A-2.0	Total – Consultants				105,000		825,000
A-3	SJ Shire Salaries & On-Costs						
A-3.1	Project Coordinator	96,000	25%	50%	60,000	17	1,020,000
A-3.2	Project Officer	70,000	25%	20%	17,500	17	297,500
A-3.3	Management Accountant	77,000	25%	25%	24,063	17	409,071
	SJ Shire Salaries & On-Costs				101,563		1,726,571
A-4	SJ Shire Salaries & On-Costs – Engineering Services						
A-4.1	Manager Infrastructure & Design	105,575	25%	10%	13,197	17	224,349
A-4.2	Manager Subdivisions	98,040	25%	5%	6,128	17	104,176
A-4.0	SJ Shire Salaries & On-Costs			1.10 FTE	19,325		328,525
	Total DCP -Administration				255,888		3,390,096

Previous Financial Years	Total Expenditure
Pre 2013/14	1,552,922
2013/14	240,045
2014/15	180,619
2015/16	228,731
2016/17 Up to 28 February 2017	13,240
Total Administration	2,215,557