



Shire of
Serpentine
Jarrahdale

Sustainable. Connected. Thriving!

WestMundijong Development Contribution Plan Report

January 2018

Prepared by the
Shire of Serpentine Jarrahdale

Contents

- 1 Introduction1**
 - 1.1 Background1
 - 1.2 Purpose of Development Contribution Arrangement3
 - 1.3 Purpose of Development Contribution Plan Report3
 - 1.4 Status3
 - 1.5 Principles3
 - 1.6 Area of Operation4
 - 1.7 Strategic Basis6

- 2 Infrastructure, Land and Other Items7**
 - 2.1 Land Value7
 - 2.2 Roads7
 - 2.3 Land for Drainage9
 - 2.4 Total Cost 11

- 3 Development Contribution Methodology 12**
 - 3.1 Exemptions 12

- 4 Priority and Timing of Provision 13**

- 5 Period of Operation and Review 14**

- 6 Operational Matters 15**
 - 6.1 Estimation of Costs 15
 - 6.2 Land Valuation 15
 - 6.3 Liability for Contributions 15
 - 6.4 Payment of Contributions 15
 - 6.5 Arbitration 15
 - 6.6 Implementation 15
 - 6.7 Form of Contributions 15
 - 6.8 Credits 15

- Appendix A Mundijong Road – Costing Spreadsheet
- Appendix B Kargotich Road – Costing Spreadsheet
- Appendix C Bishop Road – Costing Spreadsheet

1 Introduction

1.1 Background

The West Mundijong development area is located within the Shire of Serpentine Jarrahdale, and is generally bound by the Kwinana Freight Rail Line to the north, the proposed Tonkin Highway to the east, Mundijong Road to the south and Kargotich Road to the west.

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

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

Figure 1 – West Mundijong District Structure Plan Map

NOTE:

The cost estimates and assumptions in this documentation are based on the best available information at this point in time. This documentation has been prepared for the basis of public advertising and may change during the statutory planning and approval process.

WEST MUNDIJONG INDUSTRIAL AREA DISTRICT STRUCTURE PLAN



LEGEND

- | | | |
|---|--|---|
| SUBJECT LAND | MULTIPLE USE CORRIDOR (INCORPORATED DRAINAGE FUNCTION) | INDICATIVE INTERIM TYPE 90 WWPS (20-30m RADIUS ODOUR BUFFER) AND INTERM TYPE 350 WWPS (50m RADIUS ODOUR BUFFER) |
| PRIMARY REGIONAL ROAD | POTENTIAL DRAINAGE AND LANDSCAPE ENHANCEMENT | INDICATIVE ULTIMATE TYPE 1000 WWPS (150m RADIUS ODOUR BUFFER) |
| EXISTING CADASTRE | 330 V POWER LINES | |
| ROADS | CONSERVATION CATEGORY WETLAND | |
| ROADS SUBJECT TO FUTURE INVESTIGATION BY THE DEPARTMENT OF TRANSPORT | 30m CONSERVATION CATEGORY WETLAND BUFFER | |
| GENERAL INDUSTRY | INDICATIVE ECOLOGICAL LINKAGES | |
| LIGHT INDUSTRY | PROPOSED RAIL LINK | |
| AREA TO BE RETAINED IN THE 'RURAL' ZONE (METROPOLITAN REGION SCHEME) PENDING FURTHER INVESTIGATIONS BY THE DEPARTMENT OF TRANSPORT INTO FUTURE REGIONAL TRANSPORT REQUIREMENTS. | EXISTING KWINANA FREIGHT RAIL | |
| 1000m BOUNDARY FROM GENERAL INDUSTRY CORE | FUTURE LIGHT CONTROLLED INTERSECTION | |
| | NOISE ATTENUATION | |

NOTE:

THE PROPOSED ROAD NETWORK MAY BE AMENDED IN RESPONSE TO ONGOING LIAISON WITH MAIN ROADS WESTERN AUSTRALIA. AT THIS STAGE THE ROAD NETWORK SHOWN IN THE DRAFT DISTRICT STRUCTURE PLAN IS A GUIDE ONLY.



1.2 Purpose of Development Contribution Arrangement

Due to the existence of multiple landholdings within the West Mundijong DSP area, the Shire has decided to prepare a development contribution arrangement (DCA) to share the cost of infrastructure, land and other items required to support the development of the area.

1.3 Purpose of Development Contribution Plan Report

This development contribution plan (DCP) 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 cost contribution rate applicable within the West Mundijong 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 and review of the DCA.
- Various other operational matters.

1.4 Status

This DCP report has been prepared pursuant to Clause 9.3.10 of the Shire of Serpentine Jarrahdale Town Planning Scheme No. 2 (TPS 2).

The report should be read in conjunction with Clause 9.3 of TPS 2, the Scheme DCP set out in Appendix 16B of TPS 2, the West Mundijong DSP, and any relevant precinct-level LSP.

This DCP report does not form part of TPS 2.

1.5 Principles

This DCP report has been prepared pursuant to the guiding principles for development contribution plans, as set out in Clause 10.3.6 of TPS 2 and detailed below:

(a) Need and the nexus

The need for the infrastructure included in the plan must be clearly demonstrated (need) and the connection between the development and the demand created should be clearly established (nexus).

(b) Transparency

Both the method for calculating the development contribution and the manner in which it is applied should be clear, transparent and simple to understand and administer.

(c) Equity

Development contributions should be levied from all developments within a development contribution area, based on their relative contribution to need.

(d) Certainty

All development contributions should be clearly identified and methods of accounting for cost adjustments determined at the commencement of a development.

(e) Efficiency

Development contributions should be justified on a whole of life capital cost basis consistent with maintaining financial discipline on service providers by precluding over recovery of costs

(f) Consistency

Development contributions should be applied uniformly across a development contribution area and the methodology for applying contributions should be consistent.

(g) Right of consultation and review

Owners have the right to be consulted on the manner in which development contributions are determined. They also have the opportunity to seek a review by an independent third party if they believe the calculation of the costs of the contributions is not reasonable.

(h) Accountable

There must be accountability in the manner in which development contributions are determined and expended.

(i) Risk Minimisation

The financial risk to the local government and other stakeholders is to be mitigated through the minimisation of items included.

1.6 Area of Operation

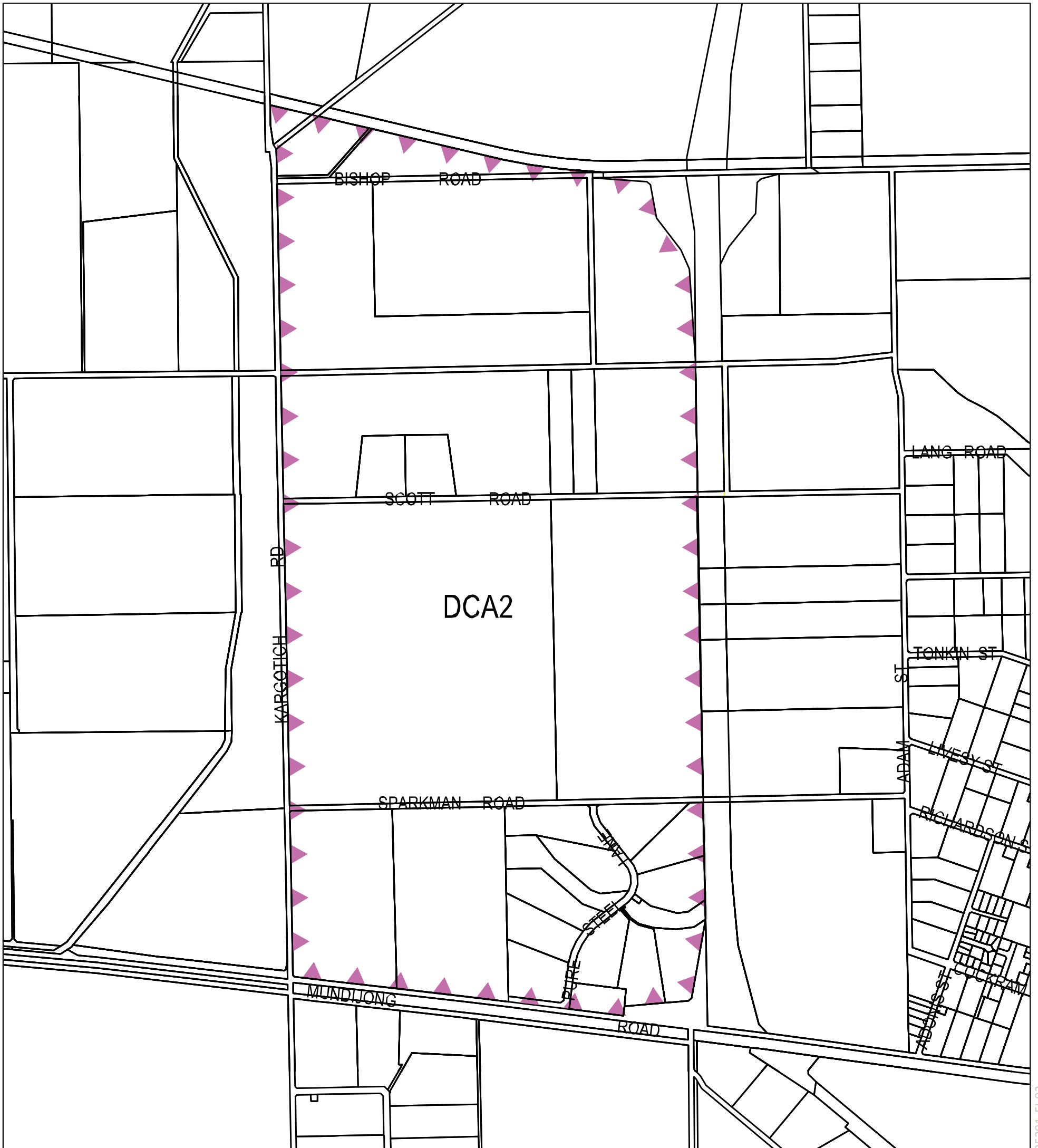
The DCP report applies to the West Mundijong development contribution area special control area (SCA) (see Figure 2), as indicated on the TPS 2 Scheme Maps and detailed within Part 9 of TPS 2.

Figure 2 – West Mundijong Development Control Area

LEGEND



WEST MUNDIJONG DEVELOPMENT
CONTROL AREA



05291-FI-02

FIGURE 2: WEST MUNDIJONG DEVELOPMENT CONTROL AREA

1.7 Strategic Basis

The West Mundijong DSP guides the preparation of LSPs, which facilitate the eventual subdivision and development of land within West Mundijong. This subdivision and development necessitates the provision of new and upgraded infrastructure and land for drainage purposes. In this context, the West Mundijong DSP forms the strategic basis for the DCP report and broader DCA for West Mundijong.

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 West Mundijong. These items include:

- District distributor and connector roads playing a district function;
- Land for drainage; and
- Administration costs.

2.1 Land Value

Roads and drainage include a significant land component. To determine the total cost of the items, a land value therefore needs to be identified. Pursuant to Clause 9.3.12 of TPS 2, the rate for the purpose of calculating the value of land for public open space, drainage and infrastructure, as at July 2017, is **\$300,000 per hectare**. This estimate is based on land valuations undertaken as at June 2017.

Pursuant to Clause 9.3.11 of TPS 2, the land value will be reviewed at least annually.

For the purposes of TPS 2, the Scheme DCP for West Mundijong and the West Mundijong DCP report, one englobo land value will apply to the entire West Mundijong development contribution area, irrespective of precinct or structure plan classification or similar. This approach is considered to be the simplest, effective and equitable method of addressing land valuation.

2.2 Roads

The land, earthworks, paving/surfacing, drainage, traffic control devices, shared paths, utilities and associated costs for the upgrading and/or construction of:

1. Mundijong Road between Kargotich Road and Tonkin Highway reservation;
2. Kargotich Road between the freight rail crossing and Mundijong Road; and
3. Bishop Road between Kargotich Road and Tonkin Highway reservations.

2.2.1 Mundijong Road – District Distributor

Mundijong Road borders a significant portion of the West Mundijong 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 Mundijong Road abutting the West Mundijong 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.

The width of the Mundijong Road reserve will be 40m.

The upgrade of Mundijong Road will occur between the Tonkin Highway Metropolitan Region Scheme (MRS) Primary Regional Road Reserve and Kargotich Road to the east. The detailed design of Mundijong Road is still to be determined in conjunction with relevant State agencies.

In accordance with State Planning Policy No. 3.6 – Development Contributions for Infrastructure (SPP 3.6), the following items are included within the DCA for Mundijong Road, between Kargotich Road and Tonkin Highway reservation:

- Land required to achieve a 40m wide road reserve;
- Earthworks for the whole road reserve;
- The construction and upgrade of one carriageway;
- Associated drainage works including water sensitive measures;
- Traffic control devices including two set of traffic lights and intersection treatments incorporating slip lanes and associated works;
- Shared paths;
- Utility removal, relocation and insertion; and
- Associated costs including design, administration, management.

The total cost for Mundijong Road will be **\$8,726,222**. A detailed breakdown of the costs is contained within a spreadsheet at Appendix A.

The following items are not included in the DCA for Mundijong Road:

- Any upgrades to Mundijong Road east of Kargotich Road; and
- Any intersection treatment with Tonkin Highway. Tonkin Highway is a Primary Regional Road under the MRS and is a responsibility of Main Roads.

2.2.2 Kargotich Road – Local Road

Kargotich Road is located to the west of the West Mundijong DSP area, providing a north south connection and linking in with the West Mundijong DSP. Kargotich Road is a Shire controlled road and is not reserved under the MRS. The existing state of Kargotich Road is rural in nature, with a narrow single carriageway allowing for one lane in either direction.

The width of Kargotich Road will be 30m.

The upgrade of Kargotich Road will occur between Mundijong Road reserve and the railway crossing to the north.

In accordance with SPP 3.6, the following items are included in the DCA for Kargotich Road:

- Land required to achieve a 30m wide road reserve;

- 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 measures;
- Traffic control devices including intersection treatments incorporating slip lanes and associated works;
- Shared paths;
- Utility removal, relocation and insertion; and
- Associated costs including design, administration, and management.

The total cost for Kargotich Road will be **\$12,998,259**. A detailed breakdown of the costs is contained within a spreadsheet at Appendix B.

The following items are not included in the DCA for Kargotich Road:

- Minor intersections treatments into Kargotich Road from the adjoining subdivisional road network. These will be subject to a standard subdivisional truncation requirements; and
- Modifications to the current railway crossing configuration; as this may change in the future when detailed planning is undertaken by the Department of Transport for the future freight rail realignment out of the existing Mundijong and proposed W hitby town sites.

2.2.3 Bishop Road – Local Road

Bishop Road is located in the northern portion of the DSP area, running east-west between Kargotich Road and the Tonkin Highway MRS Primary Regional Road Reservation. Bishop Road is a Shire controlled road and is not reserved under the MRS.

The existing state of Bishop Road is rural in nature, with a narrow single carriageway allowing for one lane in either direction. Changes to the alignment of the road are proposed towards Tonkin Highway and the road is proposed to connect into Tonkin Highway.

The width of Bishop Road will be 30m.

The upgrade and construction of Bishop Road will occur between the Tonkin Highway MRS Primary Regional Road reserve and Kargotich Road.

In accordance with SPP 3.6, the following items are included in the DCA for Bishop Road:

- Land required to achieve a 30m wide road reserve;
- 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 measures;
- Traffic control devices including one set of traffic lights, intersection treatments incorporating slip lanes and associated works;
- Shared paths;
- Utility removal, relocation and insertion; and
- Associated costs including design, administration, and management.

The total cost for Bishop Road will be **\$5,806,599**. A detailed breakdown of the costs is contained within a spreadsheet at Appendix C.

The following items are not included in the DCA for Bishop Road:

- Minor intersections treatments into Bishop Road 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.

2.3 Land for Drainage

A significant amount of land will be provided within the West Mundijong DSP area for drainage purposes.

This land includes:

- A mix of multiple-use and ecological corridors forming a drainage function; and
- Land purely for drainage purposes.

All land required for drainage is included in the DCA, this will ensure compliance with Clause 9.3.6 of TPS 2, containing the guiding principles for development contribution plans. This will ensure transparency and equity in terms of land required for district benefit. Without the provision of district level drainage the development of the area holistically could not proceed.

2.3.1 Estimated Amount of Land for Drainage

A significant amount of water planning has been completed for the West Mundijong DSP area including a District Water Management Strategy (DWMS) and associated studies. This level of planning allows for the specific identification of land areas required for regional drainage purposes. Based on the information contained in the DWMS, West Mundijong DSP and associated studies the following estimated amount of land is provided:

Ecological corridors	21ha
Drainage corridors	14ha
Multiple use corridor	25ha
Total	60ha

Notes:

- The areas identified for drainage have been based on the West Mundijong DSP, DWMS and associated studies.

2.3.2 Estimated Cost

Based upon the land value detailed in section 2.1 of this report, the total estimated cost of creditable public open space in the West Mundijong DCA is **\$18,000,000** as detailed in the table below:

Total estimated amount of public open space	Land value	Total estimated cost
60ha	\$300,000 per/ha	\$18,000,000

2.3.3 Items Not Included

Land identified as having purely a conservation value, for example Bush Forever sites and conservation category wetlands, are excluded from the DCA unless they form part of the district drainage network. Foreshore reserves are also excluded from the DCA in accordance with Liveable Neighbourhoods, which states that they will be ceded free of cost.

Whilst the DCA includes land for drainage purposes, it does not include drainage works themselves (ie. earthworks, drainage infrastructure such as piping, pits, mechanical treatments, water sensitive 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 West Mundijong. The drainage works contained within the proposed roads as depicted within the DCA are permitted to be included in accordance with SPP3.6.

2.4 Total Cost

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

Item	Cost
Mundijong Road	\$8,726,222
Kargotich Road	\$12,998,259
Bishop Road	\$5,806,599
Land required for drainage	\$18,000,000
Administration costs (approx. 1% of total DCA value)	\$455,310
Total	\$45,986,390

3 Development Contribution Methodology

This section sets out the methodology for determining the development contributions applicable within West Mundijong development contribution area.

The formula for equating cost contributions on a per hectare basis is as follows:

Total Cost / Total Developable Area =	Rate per ha
--	--------------------

Utilising information contained within the West Mundijong DSP the total developable area for the site is as follows:

General Industry Core	269ha
Light Industry Precinct	109ha
Total	378ha

Utilising the above formula the per hectare cost contribution rate is as follows:

\$45,986,390 / 378ha =	\$121,657.11 per ha
-------------------------------	----------------------------

3.1 Exemptions

Clause 9.3.13.3 of TPS 2 details various situations in which a development contribution is not required.

4 Priority and Timing of Provision

The priority and timing of provision shall be guided by the following key principles:

- Minimising financial risk to the Shire – This can be achieved through the early acquisition of land required for public purposes (public open space, roads etc.).
- Ensuring a constant turnover of funds – By ensuring the continuous spending of development contributions collected, the Shire minimises the negative consequences of inflation.
- Prioritising the purchase of land identified for public purposes which encompasses all of, or a substantial portion of one landholding – Many of these 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 – This is especially apparent in the context of roadupgrades.
- 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 in lieu of providing cost contributions.

The identification of priorities will be undertaken on an annual basis as a minimum, in parallel with forward financial planning and annual budgeting processes.

The following items have been determined by the Shire as current priority items:

- Kargotich Road
- Bishop Road
- Mundijong Road

5 Period of Operation and Review

The DCP will operate for a period of 10 years from date of gazettal of the related scheme amendment to incorporate the Scheme DCP into TPS 2.

The DCP will be reviewed not less than annually, allowing for more frequent reviews to be completed on an as-required basis having regard to cost increases, the rate of subsequent development in the area since the last review and the degree of development potential still existing.

The estimated costs will be reviewed at least annually to reflect changes in funding and revenue sources and indexed based on the Building Cost Index or other appropriate index as approved by the qualified person undertaking the certification of costs referred to in clause 9.3.11.3 of TPS 2.

Where the costing and details of the DCP report are:

- indexed on a standard basis;
- revised based on construction cost increases/decreases;
- revised based on land value increases/decreases; and
- revised based on revisions to the likely lot/dwelling outcome.

6 Operational Matters

This section of the DCP report addresses various operational matters associated with the West Mundijong DCA.

6.1 Estimation of Costs

This matter is dealt with in Clause 9.3.11 of TPS 2.

6.2 Land Valuation

This matter is dealt with in Clause 9.3.12 of TPS 2.

6.3 Liability for Contributions

This matter is dealt with in Clause 9.3.13 of TPS 2.

6.4 Payment of Contributions

This matter is dealt with in Clauses 9.3.14 of TPS 2.

6.5 Arbitration

This matter is dealt with in Clause 9.3.19 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 9.3.14 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; or
- A combination of the above.

6.8 Credits

There may be instances in which infrastructure and land is required upfront during initial development within the West Mundijong development area.

The Shire may mandate that this work is undertaken creating an in kind contribution beyond that identified in the DCP for that area. In this instance, the landowner and the Shire will negotiate in relation to a credit. Appropriate negotiated outcomes may include:

- Where a landowner has other land holdings in the area, the credit is held until it is required to be used by the landowner to offset future contributions;
- Where a landowner has no further holdings in the area, the amount is held as a credit to the landowner until payments into the development contribution plan are received from subsequent landowners. The credit is then reimbursed to the landowner;
- Where the DCA is in credit from development contributions already received, the credit can be reimbursed on completion of the works/ceding of land; or
- Another arrangement as agreed to by the landowner and Shire.

Indexing of the development contribution rate will be equally applied to credits.

Appendix A Mundijong Road – Costing Spreadsheet

Cost Estimate
Mundijong Road between Kargotich Road to Tonkin Highway
July 2016

Assumptions = Length 1527m, pavement 1/7.0m, 1/3.00m shared path

Item	Description	Unit	Quantity	Rate (\$)	Amount (\$)	Comments
1	Establishment/Preliminaries					
	General Condition of Contract ,					Specification, documentation, design, plans QA
	General Requirements					BCITF Levy, Insurance
	Management Requirements (0.15% Provisional Sum)	item	\$5,703,639	0.150	\$855,546	Community Consultation and Notification, Mobilisation & Establish, Supervision and Overheads, Survey, QA, Demobilisation & cleanup; Includes Engineering fees TMP, CMP & DMP; Excludes PU Works (Increased costs due to stage construction)
	Local Gov. Supervision	item	\$5,703,639	0.015	\$85,555	1.5% Road Costs
	Subtotal Establishment/Preliminaries				\$941,101	
2	Earthworks					
	Site clearing	ha	3.82	20,850.00	\$79,595	
	Stripping 100 mm topsoil and stockpile for respreading (assuming 60% of earthwork area)	ha	3.82	10,660.00	\$40,695	
	Excavation and removal of unsuitable material	m3	7,347.60	26.90	\$197,650	
	Backfilling unsuitable material excavations with site excavated material or imported material	m3	38,175.00	25.50	\$973,463	Average 1000mm of fill length of road.
	Subgrade preparation for pavement	m2	15,270	\$3.65	\$55,736	
	Stabilisation and Mulsh (Provisional Sum)	ha	2.0	\$4,475.00	\$8,883	
	Subtotal Earthworks				\$1,038,081	
3	Drainage					
	Surface drainage, storm water drainage, drainage structures (Provisional Sum)	item	1	762,000.00	\$762,000	
	Water Sensitive Landscape (Provisional Sum)	item	1	507,500.00	\$507,500	
	Subtotal Drainage				\$1,269,500	
4	Pavement & Surfacing					
	Supply and place 300mm thick limestone sub-base compacted to 95% MMDD	m2	15270	\$24.40	\$372,588	Pavement 7.0mx1
	Supply and place 150mm crushed rock base course compacted to 98% MMDD	m2	15270	\$18.30	\$279,441	
	Apply 10mm thick primer seal to base course	m2	12216	\$5.30	\$64,745	2.5m sealed shoulders
	Construct 40mm compacted depth dense graded asphalt (7mm nominal granite aggregate size)	m2	10689	\$18.10	\$193,471	
	Semi Mountable Kerbing	m	0	\$52.00	\$0	
	Brick paving units on and including 30mm sand bedding (in medians)	m2	1800	\$76.10	\$136,980	Intersection paving-nibs only
	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	m2	3818	\$71.05	\$271,233	path 3.0m
	Intersection channelisation	No	1	\$250,000.00	\$250,000	
	Subtotal Pavement & Surfacing				\$1,568,458	
5	Traffic Facilities					
	Signal Intersection (Provisional Sum)	No	2	\$300,000.00	\$600,000	
	Signs (Provisional Sum)	item	1	\$16,000.00	\$16,000	
	Pavement Marking (Provisional Sum)	item	1	\$16,000.00	\$16,000	
	Traffic Management	days	100	\$2,700.00	\$270,000	
	Subtotal Traffic Facilities				\$902,000	
6	Public Utilities					
	Western Power - Roadway Lighting (Provision Sum)	item	1	\$783,500.00	\$783,500	
	Western Power - Underground Existing	item	1	\$82,100.00	\$82,100	
	Western Power - Underground Distribution	item				
	Telstra	item	1	\$195,000.00	\$195,000	
	Water Corporation	item	1		\$0	
	WestNet Energy	item	1		\$0	
	Subtotal Public Utilities				\$1,060,600	
7	Miscellaneous					
	As constructed	item	1	\$50,000.00	\$50,000	
	Land	item	21,890	\$40.00	\$875,600	
	Subtotal Miscellaneous				\$925,600	
	Total Cost Estimate				\$7,705,340	
	Contingency @ 10%				\$156,846	Road Pavement
	Contingency @ 20%				\$864,036	Earthworks, Drainage + PUs
	Total Including Contingency				\$8,726,222	

Appendix B Kargotich Road – Costing
Spreadsheet

Cost Estimate
Kargotich Road- Mundijong Road to the railway line
July 2016

Assumptions = Length 3330m, pavement 2/5.50m, 1/2.5m shared paths

Item	Description	Unit	Quantity	Rate (\$)	Amount (\$)	Comments
1	Establishment/Preliminaries					
	General Condition of Contract ,					Specification, documentation, design, plans QA Splitting Design
	General Requirements					BCITF Levy, Insurance
	Management Requirements (15% Provisional Sum)	item	\$8,759,263	0.150	\$1,313,889	Community Consultation and Notification, Mobilisation & Establish, Supervision and Overheads, Survey, QA, Demobilisation & cleanup; Includes Engineering fees TMP,CMP & DMP; Excludes PU Works (Increased costs due to
	Local Gov. Supervision		\$8,759,263	0.015	\$131,389	1.5% of Road Costs
	Subtotal Establishment/Preliminaries				\$1,445,278	
2	Earthworks					
	Site clearing (assuming 60% area of earthwork area)	ha	1.5	\$15,225	\$22,815	
	Stripping 100 mm topsoil and stockpile for respreading (assuming 60% of earthwork area)	ha	1.5	\$7,611	\$11,405	
	Excavation and removal of unsuitable material	m3	9,740.3	\$26.90	\$262,013	300mm excavation
	Backfilling unsuitable material excavations with imported material	m3	24,975.0	\$25.50	\$636,863	1000mm import
	Subgrade preparation for pavement	m2	24,975.0	\$3.65	\$91,159	
	Stabilisation and Mulsh(Provisional Sum)	ha	3.0	\$4,475	\$13,412	for hydromulch only
	Subtotal Earthworks				\$1,037,665	
3	Drainage					
	Surface drainage, storm water drainage, drainage structures (Provisional Sum)	item	1	\$1,774,475	\$1,774,475	
	Water Sensitive Landscape (Provisional Sum)	item	1	\$676,000	\$676,000	
	Subtotal Drainage				\$2,450,475	
4	Pavement & Surfacing					
	Supply and place 300mm thick limestone sub-base compacted to 95% MMDD	m2	24975	\$24.40	\$609,390	
	Supply and place 150mm crushed rock base course compacted to 98% MMDD	m2	24975	\$18.30	\$457,043	
	Apply 7mm thick primer seal to base course	m2	21645	\$5.30	\$114,719	
	Construct 40mm compacted depth dense graded asphalt (7mm nominal granite aggregate size)	m2	18315	\$18.10	\$331,502	1/5.50m carriageway
	Semi Mountable Kerbing	m	3330	\$52.00	\$173,160	
	Flush kerb	m	3330	\$61.00	\$203,130	
	Brick paving units on and including 30mm sand bedding (in medians)	m2	1890	\$76.10	\$143,829	intersection nib paving only
	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	m2	8325	\$71.05	\$591,491	1/2.5m paths 3330m
	Intersection Channelisation	item	4	\$250,000	\$1,000,000	
	Subtotal Pavement & Surfacing				\$3,624,263	
5	Traffic Facilities					
	Signal Intersection	item		266,500	\$0	N/A
	Signs (Provisional Sum)	item	1	15,750	\$15,750	
	Pavement Marking (Provisional Sum)	item	1	15,750	\$15,750	
	Traffic Management	days	100	2,700	\$270,000	
	Subtotal Traffic Facilities				\$301,500	
6	Public Utilities					
	Western Power - Roadway Lighting (Provision Sum)	item	1	\$1,026,800	\$1,026,800	Street lighting
	Western Power - Underground Existing	item	1	\$171,800	\$171,800	Existing power supply lines
	Western Power - Underground Distribution	item			\$0	N/A
	Telstra	item	1	\$303,300	\$303,300	Relocate existing cable
	Water Corporation	item			\$0	N/A
	WestNet Energy	item			\$0	N/A
	Subtotal Public Utilities				\$1,501,900	
7	Miscellaneous					
	As constructed	item	2	\$25,000	\$50,000	two stages
	Land	item	32,384	\$40.00	\$1,295,360	
	Subtotal Miscellaneous				\$1,345,360	
	Total Cost Estimate				\$11,706,441	
	Contingency @ 10%				\$501,343	Roads and balance
	Contingency @ 20%				\$790,475	Drainage and PUs
	Total Including Contingency				\$12,998,259	

Appendix C Bishop Road – Costing Spreadsheet

Cost Estimate
Bishop Road between Kargotich Road and Tonkin Hwy
July 2016

Assumptions = Length 1175m, pavement 2/5.50m, 1/3.0m shared paths

Item	Description	Unit	Quantity	Rate (\$)	Amount (\$)	Comments
1	Establishment/Preliminaries					
	General Condition of Contract ,					Specification, documentation, design, plans QA Splitting Design and Contractual Prelims
	General Requirements					BCITF Levy, Insurance
	Management Requirements (15% Provisional Sum)	item	\$3,861,161	0.150	\$579,174	Community Consultation and Notification, Mobilisation & Establish, Supervision and Overheads, Survey, QA, Demobilisation & cleanup; Includes Engineering fees TMP, CMP & DMP; Excludes PU Works (Increased costs due to stage construction)
	Local Gov. Supervision		\$3,861,161	0.015	\$57,917	1.5% of Road Costs
	Subtotal Establishment/Preliminaries				\$637,092	
2	Earthworks					
	Site clearing (assuming 60% area of earthwork area)	ha	1.62	\$20,850	\$33,808	
	Stripping 100 mm topsoil and stockpile for respreading (assuming 60% of earthwork area)	ha	1.62	\$10,660	\$17,285	
	Excavation and removal of unsuitable material	m3	3,172.5	\$26.90	\$85,340	300mm excavation
	Backfilling unsuitable material excavations with imported material	m3	35,250.0	\$25.50	\$898,875	1000mm import
	Subgrade preparation for pavement	m2	15,275.0	\$3.65	\$55,754	
	Stabilisation and Mulsh(Provisional Sum)	ha	2.0	\$4,475	\$8,939	for hydromulch only
	Subtotal Earthworks				\$1,100,001	
3	Drainage					
	Surface drainage, storm water drainage, drainage structures (Provisional Sum)	item	1	\$626,128	\$626,128	
	Water Sensitive Landscape (Provisional Sum)	item	1	\$238,525	\$238,525	
	Subtotal Drainage				\$864,653	
4	Pavement & Surfacing					
	Supply and place 300mm thick limestone sub-base compacted to 95% MMDD	m2	15275	\$24.40	\$372,710	
	Supply and place 150mm crushed rock base course compacted to 98% MMDD	m2	15275	\$18.30	\$279,533	
	Apply 7mm thick primer seal to base course	m2	14805	\$5.30	\$78,467	
	Construct 40mm compacted depth dense graded asphalt (7mm nominal granite aggregate size)	m2	12925	\$18.10	\$233,943	2/5.50m
	Semi Mountable Kerbing	m	2350	\$52.00	\$122,200	
	Flush kerb	m	2350	\$61.00	\$143,350	
	Brick paving units on and including 30mm sand bedding (in medians)	m2	630	\$76.10	\$47,943	intersection nib paving only
	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	m2	2938	\$71.05	\$208,709	1/2.5m paths 1175m
	Intersection Channelisation	item	0	\$210,000	\$0	At Kargotich
	Subtotal Pavement & Surfacing				\$834,611	
5	Traffic Facilities					
	Signal Intersection	item	1	266,500	\$266,500	At N-S Spne Road
	Signs (Provisional Sum)	item	1	10,425	\$10,425	
	Pavement Marking (Provisional Sum)	item	1	10,270	\$10,270	
	Traffic Management	days	90	2,610	\$234,900	
	Subtotal Traffic Facilities				\$522,095	
6	Public Utilities					
	Western Power - Roadway Lighting (Provision Sum)	item	1	\$ 361,900	\$367,328	Street lighting \$308/m
	Western Power - Underground Existing	item	1	\$ 364,000	\$369,960	Existing WP power lines
	Western Power - Underground Distribution	item				N/A
	Telstra	item			\$0	N/A
	Water Corporation	item				N/A
	WestNet Energy	item			\$0	N/A
	Subtotal Public Utilities				\$737,288	
7	Miscellaneous					
	As constructed	item	2	\$25,000.00	\$50,000	two stages
	Land	item	12,245	\$40.00	\$489,800	
	Subtotal Miscellaneous				\$539,800	
	Total Cost Estimate				\$5,235,540	
	Contingency @ 10%				\$250,671	Roads and balance
	Contingency @ 20%				\$320,388	Drainage and Pus
	Total Including Contingency				\$5,806,599	

