

## Appendix A: Assumed development characteristics

**Table A.1: Key residential development characteristics**

Characteristic	Very Low Density Residential	Houses
Developable area (site area less roads)	1	0.8
Yield (dwellings/developable hectare)	5	12
Developable area (sqm/dwelling)	2,000	833
Dwelling occupancy (people)	2.9	2.9
Trip generation (trips/day/developable hectare)	35	83
Impervious area (developable area)	10%	50%

**Table A.2: Key retail development characteristics**

Characteristic	Retail
Site area (developable area less minor roads)	0.8
Plot ratio (% of developable hectare)	0.5
GFA for each employee (sqm)	35
Employees for each developable hectare	95
Trip generation (trips/day/developable hectare)	360
Impervious area (developable area)	90%

Houses and multi unit dwellings	Multi unit dwellings
0.8	0.8
16	25
625	400
2.5	2.1
95	125
70%	75%

**Table A.3: Forecast Development**

<b>Year</b>	<b>VLDR (5d/Ha)</b>	<b>Houses (12d/Ha)</b>	<b>House &amp; Multi Unit Dwelling (16d/Ha)</b>	<b>Multi Unit Dwelling (25d/Ha)</b>	<b>Retail</b>	<b>Total</b>
2004	0.9	9.2	1.9	0.7	0.0	12.8
2005	0.9	9.2	1.9	0.7	0.0	12.8
2006	0.9	9.2	1.9	0.7	0.0	12.8
2007	0.9	9.2	1.9	0.7	0.0	12.8
2008	0.9	9.2	1.9	0.7	0.0	12.8
2009	0.9	9.2	1.9	0.7	0.0	12.8
2010	0.9	9.2	1.9	0.7	0.0	12.8
2011	2.1	7.5	1.2	1.0	0.0	11.8
2012	2.1	7.5	1.2	1.0	0.4	12.2
2013	2.1	7.5	1.2	1.0	0.0	11.8
2014	2.1	7.5	1.2	1.0	0.0	11.8
2015	2.1	7.5	1.2	1.0	0.0	11.8
2016	0.0	3.1	2.6	0.0	0.0	5.7
2017	0.0	3.1	2.6	0.0	0.0	5.7
2018	0.0	3.1	2.6	0.0	0.0	5.7
2019	0.0	3.1	2.6	0.0	0.0	5.7
2020	0.0	3.1	2.6	0.0	0.0	5.7
<b>Total</b>	<b>16.9</b>	<b>117.6</b>	<b>32.6</b>	<b>9.9</b>	<b>0.4</b>	<b>177.4</b>

**Appendix B: Waterways**

**Table B.1: Inputs**

Real Discount Rate	0.06
Base year for calculation of NPV	2001
Value of an ICU base year 2004/05	\$ 1.00
	\$ 1.09

**Table B.2: Waterways Equivalent Hectare (EH) Conversion Rates**

Type of Development	Conversion Rate
Very Low Density Residential	0.20
Houses	1.00
Houses and multi unit dwellings	1.40
Multi unit dwellings	1.50
Retail	1.80
Other Residential (e.g. Caravan Parks)	1.20

**Table B.3: Forecast development as Waterways EHS - Contribution Area 1 (Blunder Creek)**

	Very low density res.	Houses	Houses and multi unit dwellings	Multi unit dwellings	Retail	Other Residential	Total
Existing situation*	0.0	0.0	0.0	0.0	0.0	11.4	11.4
2020 (Ultimate)	1.8	42.0	27.5	14.9	0.8	11.4	98.4

**Table B.4: Forecast development as Waterways EHS - Contribution Area 1 (Blunder Creek)**

Year	Very low density res.	Houses	Houses and multi unit dwellings	Multi unit dwellings	Retail	Other Residential	Total
2003/04	0.2	4.1	2.7	1.0	0.0	0.0	8.0
2004/05	0.2	4.1	2.7	1.0	0.0	0.0	8.0
2005/06	0.2	4.1	2.7	1.0	0.0	0.0	8.0
2006/07	0.2	4.1	2.7	1.0	0.0	0.0	8.0
2007/08	0.2	4.1	2.7	1.0	0.0	0.0	8.0
2008/09	0.2	4.1	2.7	1.0	0.0	0.0	8.0
2009/10	0.2	4.1	2.7	1.0	0.0	0.0	8.0
2010/11	0.1	2.7	1.7	1.5	0.2	0.0	6.2
2011/12	0.1	2.7	1.7	1.5	0.2	0.0	6.2
2012/13	0.1	2.7	1.7	1.5	0.2	0.0	6.2
2013/14	0.1	2.7	1.7	1.5	0.2	0.0	6.2
2014/15	0.1	2.7	1.7	1.5	0.2	0.0	6.2
2015/16	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2016/17	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2017/18	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2018/19	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2019/20	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Total</b>	<b>1.8</b>	<b>42.0</b>	<b>27.5</b>	<b>14.9</b>	<b>0.8</b>	<b>0.0</b>	<b>86.9</b>
NPV	1.3	30.3	19.9	10.1	0.4	0.0	62.0

\* approved/lodged prior to ICP completion and likely to be approved

**Conversion Rates**

Land Use	Impervious Area	Conversion Rate
Very Low Density Residential	0.10	0.20
Houses	0.50	1.00
Houses and multi unit dwellings	0.70	1.40
Multi unit dwellings	0.75	1.50
Retail	0.90	1.80
Other Residential (e.g. Caravan Parks)	0.60	1.20

**Table B.5: Forecast development as Waterways EHS - Contribution Area 2 (Doolandella Waters)**

	Very low density res.	Houses	Houses and multi unit dwellings	Multi unit dwellings	Retail	Other Residential	Total
Existing situation	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2020 (Ultimate)	1.6	47.1	18.1	0.0	0.0	0.0	66.8

**Table B.6: Forecast development as Waterways EHS - Contribution Area 2 (Doolandella Waters)**

Year	Very low density res.	Houses	Houses and multi unit dwellings	Multi unit dwellings	Retail	Other Residential	Total
2003/04	0.0	1.1	0.0	0.0	0.0	0.0	1.1
2004/05	0.0	1.1	0.0	0.0	0.0	0.0	1.1
2005/06	0.0	1.1	0.0	0.0	0.0	0.0	1.1
2006/07	0.0	1.1	0.0	0.0	0.0	0.0	1.1
2007/08	0.0	1.1	0.0	0.0	0.0	0.0	1.1
2008/09	0.0	1.1	0.0	0.0	0.0	0.0	1.1
2009/10	0.0	1.1	0.0	0.0	0.0	0.0	1.1
2010/11	0.3	4.8	0.0	0.0	0.0	0.0	5.1
2011/12	0.3	4.8	0.0	0.0	0.0	0.0	5.1
2012/13	0.3	4.8	0.0	0.0	0.0	0.0	5.1
2013/14	0.3	4.8	0.0	0.0	0.0	0.0	5.1
2014/15	0.3	4.8	0.0	0.0	0.0	0.0	5.1
2015/16	0.0	3.1	3.6	0.0	0.0	0.0	6.8
2016/17	0.0	3.1	3.6	0.0	0.0	0.0	6.8
2017/18	0.0	3.1	3.6	0.0	0.0	0.0	6.8
2018/19	0.0	3.1	3.6	0.0	0.0	0.0	6.8
2019/20	0.0	3.1	3.6	0.0	0.0	0.0	6.8
<b>Total</b>	<b>1.6</b>	<b>47.1</b>	<b>18.1</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>66.8</b>
NPV	0.9	25.9	7.6	0.0	0.0	0.0	34.4

**Table B.7: Forecast development as Waterways EHS - Contribution Area 3 (Hanleys Creek)**

	Very low density res.	Houses	Houses and multi unit dwellings	Multi unit dwellings	Retail	Other Residential	Total
Existing situation	0.0	6.3	0.0	0.0	0.0	0.0	6.3
2020 (Ultimate)	0.0	34.9	0.0	0.0	0.0	0.0	34.9

**Table B.8: Forecast development as Waterways EHS - Contribution Area 3 (Hanleys Creek)**

Year	Very low density res.	Houses	Houses and multi unit dwellings	Multi unit dwellings	Retail	Other Residential	Total
2003/04	0.0	4.1	0.0	0.0	0.0	0.0	4.1
2004/05	0.0	4.1	0.0	0.0	0.0	0.0	4.1
2005/06	0.0	4.1	0.0	0.0	0.0	0.0	4.1
2006/07	0.0	4.1	0.0	0.0	0.0	0.0	4.1
2007/08	0.0	4.1	0.0	0.0	0.0	0.0	4.1
2008/09	0.0	4.1	0.0	0.0	0.0	0.0	4.1
2009/10	0.0	4.1	0.0	0.0	0.0	0.0	4.1
2010/11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2011/12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2012/13	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2013/14	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2014/15	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2015/16	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2016/17	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2017/18	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2018/19	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2019/20	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Total</b>	<b>0.0</b>	<b>28.6</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>28.6</b>
NPV	0.0	22.8	0.0	0.0	0.0	0.0	22.8

Table B.9[a]: Waterway Drainage - Contribution Area 1 (Blunder Creek)

Item description	Infrastructure Cost	Planning, Design & project management cost (7%)	Contingency (30%)	Total Costs (03/04)
Trunk Drainline 7 - Blunder Road	\$ 395,640	\$ 43,960	\$ 188,400	\$ 628,000
Trunk Drainline 8 - Brookside Road	\$ 357,840	\$ 39,760	\$ 170,400	\$ 568,000
Blunder Creek Bank Stabilisation (adjacent to L.7/RP854373, L.8/SP123330, L.9/SP123331)	\$ 2,050,000	\$ -	\$ -	\$ 2,050,000
Easement & Covenant Establishment (Nth of Brookside Rd)	\$ 736,000	\$ 51,520	\$ -	\$ 787,520
Plan preparation				\$ 6,000
<b>Total</b>	<b>\$ 3,539,480</b>	<b>\$ 83,720</b>	<b>\$ 358,800</b>	<b>\$ 4,039,520</b>

Table B.9[b]: Present value of infrastructure - Contribution Area 1 (Blunder Creek)

Item description	Total Costs (ICUs)	Planned Provision	Assumed Year for Discounting	Present Value (ICUs)
Trunk Drainline 7 - Blunder Road	576,147	2011-2015	2013	270,120
Trunk Drainline 8 - Brookside Road	521,101	2004-2010	2007	346,562
Blunder Creek Bank Stabilisation (adjacent to L.7/RP854373, L.8/SP123330, L.9/SP123331)	1,880,734	2004-2010	2007	1,250,795
Easement & Covenant Establishment (Nth of Brookside Rd)	722,495	2004-2010	2007	480,501
Plan preparation	5,505	2002	2002	4,899
<b>Total</b>	<b>3,705,982</b>			<b>2,352,877</b>

Table 9[c]: Waterways Cost Apportionment - Contribution Area 1 (Blunder Creek)

Item	Present value (ICUs)	Forecast external use in 2020		Existing use		Forecast future internal use in 2020			
		% total use	Apportioned cost (ICUs)	% total use	Apportioned cost (ICUs)	% total use	Apportioned cost (ICUs)	NPV future demand (EHs)	Contribution (ICUs/EH)
Trunk Drainline 7 - Blunder Road	270,120	0%	0	0%	0	100%	270,120	62	4,355
Trunk Drainline 8 - Brookside Road	346,562	0%	0	0%	0	100%	346,562	62	5,588
Blunder Creek Bank Stabilisation (adjacent to L.7/RP854373, L.8/SP123330, L.9/SP123331)	1,250,795	50%	625,398	10%	125,080	40%	500,318	62	8,067
Establishment of Easement & Covenant (North of Brookside Road)	480,501	0%	0	0%	0	100%	480,501	62	7,747
Plan preparation	4,899	0%	0	0%	0	100%	4,899	62	79
<b>Total</b>	<b>2,352,877</b>		<b>625,398</b>		<b>125,080</b>		<b>1,602,400</b>		<b>25,836</b>

Table D9[d]: Contribution and Credit - Contribution Area 1 (Blunder Creek)

Type of development	Contribution Ha/sqmGFA (ICUs)	Credit dwelling/sqm GFA (ICUs)
Very Low Density Residential	5,167/Ha	0/dwelling
Low Density Residential (houses)	25,836/Ha	2,146/dwelling
Low Density Residential (houses & multi units)	36,170/Ha	2,254/dwelling
Low Density Residential (multi units)	38,753/Ha	1,545/dwelling
Retail (sqm GFA)	9.30/m2	9.27/m2
Other Residential	31,003/Ha	1,236/dwelling

Table 10[c]: Waterways Cost Apportionment - Contribution Area 2 (Doolandella Waters)

Item	Present value (ICUs)	Forecast external use in 2020		Existing use		Forecast future internal use in 2020			
		% total use	Apportioned cost (ICUs)	% total use	Apportioned cost (ICUs)	% total use	Apportioned cost (ICUs)	NPV future demand (EHs)	Contribution (ICUs/EH)
Trunk Drainline 1 - Cloverdale Road	223,706	0%	0	0%	0	100%	223,706	34	6,501
Trunk Drainline 2 - North of Cloverdale Road	171,958	0%	0	0%	0	100%	171,958	34	4,997
Trunk Drainline 3 - Redhead Street	80,864	0%	0	0%	0	100%	80,864	34	2,350
Blunder Creek Bank Stabilisation (adjacent to L.3/RP92133)	752,723	50%	376,362	5%	37,636	45%	338,725	34	9,844
Fauna Friendly Culverts - Cloverdale Road	47,557	0%	0	0%	0	100%	47,557	34	1,382
Fauna Friendly Culverts - Redhead Street	23,571	0%	0	0%	0	100%	23,571	34	685
Channel Excavation (Tributary Sth of Redhead St)	87,871	0%	0	0%	0	100%	87,871	34	2,554
5 In-stream Weirs (Tributary Sth of Redhead St)	44,196	0%	0	0%	0	100%	44,196	34	1,284
Bank Stabilisation (Tributary Sth of Redhead St)	147,319	0%	0	0%	0	100%	147,319	34	4,281
Environ. Permits & EMP (Tributary Sth of Redhead St)	8,603	0%	0	0%	0	100%	8,603	34	250
Establishment of Easement & Covenant (South of Redhead Street)	580,220	0%	0	0%	0	100%	580,220	34	16,862
Plan preparation	6,000	0%	0	0%	0	100%	6,000	34	174
<b>Total</b>	<b>2,174,587</b>		<b>376361.6</b>		<b>37636.16</b>		<b>1,760,589</b>		<b>51,165</b>

Table D10[d]: Contribution and Credit - Contribution Area 2 (Doolandella Waters)

Type of development	Contribution Ha/sqmGFA (ICUs)	Credit dwelling/sqm GFA (ICUs)
Very Low Density Residential	10,233/Ha	0/dwelling
Low Density Residential (houses)	51,165/Ha	4,249/dwelling
Low Density Residential (houses & multi units)	71,630/Ha	4,462/dwelling
Low Density Residential (multi units)	76,747/Ha	1,545/dwelling
Retail (sqm GFA)	18/m2	18.36/m2
Other Residential	61,398/Ha	2,448/dwelling

Table B.10[a]: Waterway Drainage - Contribution Area 2 (Doolandella Waters)

Item description	Infrastructure Cost	Planning, Design & project management cost (7%)	Contingency (30%)	Total Costs (03/04)
Trunk Drainline 1 - Cloverdale Road	\$ 438,480	\$ 48,720	\$ 208,800	\$ 696,000
Trunk Drainline 2 - North of Cloverdale Road	\$ 337,050	\$ 37,450	\$ 160,500	\$ 535,000
Trunk Drainline 3 - Redhead Street	\$ 118,440	\$ 13,160	\$ 56,400	\$ 188,000
Blunder Creek Bank Stabilisation (adjacent to L.3/RP92133)	\$ 1,750,000	\$ -	\$ -	\$ 1,750,000
Fauna Friendly Culverts - Cloverdale Road	\$ 108,000	\$ 7,560	\$ 32,400	\$ 147,960
Fauna Friendly Culverts - Redhead Street	\$ 40,000	\$ 2,800	\$ 12,000	\$ 54,800
Channel Excavation (Tributary Sth of Redhead St)	\$ 149,118	\$ 10,438.26	\$ 44,735	\$ 204,292
5 In-stream Weirs (Tributary Sth of Redhead St)	\$ 75,000	\$ 5,250	\$ 22,500	\$ 102,750
Bank Stabilisation (Tributary Sth of Redhead St)	\$ 250,000	\$ 17,500	\$ 75,000	\$ 342,500
Environ. Permits & EMP (Tributary Sth of Redhead St)	\$ -	\$ -	\$ -	\$ 20,000
Easement & Covenant Establishment (Tributary Sth of Redhead St)	\$ 1,260,700	\$ 88,249	\$ 378,210	\$ 1,348,949
Plan preparation				\$ 7,000
<b>Total</b>	<b>\$ 4,526,788</b>	<b>\$ 231,127</b>	<b>\$ 990,545</b>	<b>\$ 5,397,251</b>

Table B.10[b]: Present value of infrastructure - Contribution Area 2 (Doolandella Waters)

Item description	Total Costs (ICUs)	Planned Provision	Assumed Year for Discounting	Present Value (ICUs)
Trunk Drainline 1 - Cloverdale Road	638,532	2016-2020	2018	223,706
Trunk Drainline 2 - North of Cloverdale Road	490,826	2016-2020	2018	171,958
Trunk Drainline 3 - Redhead Street	172,477	2011-2015	2013	80,864
Blunder Creek Bank Stabilisation (adjacent to L.3/RP92133)	1,605,505	2011-2015	2013	752,723
Fauna Friendly Culverts - Cloverdale Road	135,743	2016-2020	2018	47,557
Fauna Friendly Culverts - Redhead Street	50,275	2011-2015	2013	23,571
Channel Excavation (Tributary Sth of Redhead St)	187,424	2011-2015	2013	87,871
5 In-stream Weirs (Tributary Sth of Redhead St)	94,266	2011-2015	2013	44,196
Bank Stabilisation (Tributary Sth of Redhead St)	314,220	2011-2015	2013	147,319
Environ. Permits & EMP (Tributary Sth of Redhead St)	18,349	2011-2015	2013	8,603
Easement & Covenant Establishment (Tributary Sth of Redhead St)	1,237,568	2011-2015	2013	580,220
Plan preparation	6,422	2002	2002	5,716
<b>Total</b>	<b>4,951,606</b>			<b>2,174,302</b>

Table 11[c]: Waterways Cost Apportionment - **Contribution Area 3 (Hanleys Creek)**

Item	Present value (ICUs)	Forecast external use in 2020		Existing use		Forecast future internal use in 2020			
		% total use	Apportioned cost (ICUs)	% total use	Apportioned cost (ICUs)	% total use	Apportioned cost (ICUs)	NPV future demand (EHs)	Contribution (ICUs/EH)
Trunk Drainline 4 - Forest Lake/Doolandella Boundary	468,591	0%	0	0%	0	100%	468,591	23	20,561
Trunk Drainline 5 - Crossacres Street West	197,077	0%	0	0%	0	100%	197,077	23	8,647
Trunk Drainline 6 - Inala/Doolandella Boundary	612,585	0%	0	0%	0	100%	612,585	23	26,879
Plan preparation	6,000	0%	0	0%	0	100%	6,000	23	263
<b>Total</b>	<b>1,284,252</b>		<b>0</b>		<b>0</b>		<b>1,284,252</b>		<b>56,351</b>

Table D11[d]: Contribution and Credit - **Contribution Area 3 (Hanleys Creek)**

Type of development	Contribution Ha/sqmGFA (ICUs)	Credit dwelling/sqm GFA (ICUs)
Very Low Density Residential	11,270/Ha	0/dwelling
Low Density Residential (houses)	56,351/Ha	4,674/dwelling
Low Density Residential (houses & multi units)	78,891/Ha	4,908/dwelling
Low Density Residential (multi units)	84,526/Ha	3,365/dwelling
Retail (sqm GFA)	20.29/m2	20.19/m2
Other Residential	67,621/Ha	2,692/dwelling



## Appendix C: Transport

Contribution Area 1			Contribution (\$ 2004-05)			
Land use	Dwellings/ha	Trips/ha	Roads	Paths	P.T.	Total
Very Low Density Residential	5	35	\$9,345	\$3,300	\$50	\$12,695
Houses	12	83	\$22,161	\$7,920	\$120	\$30,201
Houses and multi unit dwellings	16	95	\$25,365	\$10,560	\$160	\$36,085
Multi unit dwellings	25	125	\$33,375	\$16,500	\$250	\$50,125
Retail (m <sup>2</sup> GFA)	N.A	600	\$32.04	\$12.18	\$0.36	\$45
Other Residential (e.g. Caravan Parks)	N.A	125	\$33,375	\$16,500	\$250	\$50,125

ICU value 2004-05	
\$1.09	
road contribution/trip end	
\$267	
path contribution/dwelling	contribution/m <sup>2</sup> GFA (Retail)
\$660	12.18
P.T contribution/dwelling	contribution/m <sup>2</sup> GFA (Retail)
\$10	\$0.36

			Credit (\$ 2004-05)			
Land use	Dwellings/Ha	Trips/ha	Roads	Paths	P.T.	Total
Very Low Density Residential	5	35	\$0	\$0	\$0	\$0
Houses	12	83	\$21,939	\$7,841	\$119	\$29,899
Houses and multi unit dwellings	16	95	\$25,111	\$10,454	\$158	\$35,724
Multi unit dwellings	25	125	\$33,041	\$16,335	\$248	\$49,624
Retail (m <sup>2</sup> GFA)	N.A	600	\$31.72	\$12.06	\$0.36	\$44
Other Residential (e.g. Caravan Parks)	N.A	125	\$33,041	\$16,335	\$248	\$49,624

road credit/trip end
\$264.33

Land use	Dwellings/ha	Trips/ha	Contribution (ICUs)			
			Roads	Paths	P.T	Total
Very Low Density Residential	5	35	8573	3028	46	11,647
Houses	12	83	20331	7266	110	27,707
Houses and multi unit dwellings	16	95	23271	9688	147	33,106
Multi unit dwellings	25	125	30619	15138	229	45,986
Retail (m <sup>2</sup> GFA)	N.A	600	29.39	11.17	0.33	40.90
Other Residential (e.g. Caravan Parks)	N.A	125	30619	15138	229	45,986

Land use	Dwellings/ha	Trips/ha	Credit (ICUs)				Total (Ha)	Total (dwelling)
			Roads	Paths	P.T	Total (Ha)		
Very Low Density Residential	5	35	0	0	0	0	0	
Houses	12	83	20128	7193	109	27430	2286	
Houses and multi unit dwellings	16	95	23038	9591	145	32774	2048	
Multi unit dwellings	25	125	30313	14986	227	45526	1821	
Retail (m <sup>2</sup> GFA)	N.A	600	29.10	11.06	0.33	40.49	40.49	
Other Residential (e.g. Caravan Parks)	N.A	125	30313	14986	227	45526	1821	

## Appendix C: Transport

Contribution Area 2 &3			Contribution (\$ 2004-05)			
Land use	Dwellings/ha	Trips/ha	Roads	Paths	P.T.	Total
Very Low Density Residential	5	35	\$14,000	\$3,300	\$50	\$17,350
Houses	12	83	\$26,000	\$7,920	\$120	\$34,040
Houses and multi unit dwellings	16	95	\$29,000	\$10,560	\$160	\$39,720
Multi unit dwellings	25	125	\$36,500	\$16,500	\$250	\$53,250
Retail (m <sup>2</sup> GFA)	N.A	600	31.05	12.18	0.36	\$44
Other Residential (e.g. Caravan Parks)	N.A	125	\$36,500	\$16,500	\$250	\$53,250

ICU value 2004-05	
\$1.09	
road contribution/trip end	Standardised Rd charge/Ha
250	\$5,250
path contribution/dwelling	path charge/m <sup>2</sup> GFA (Retail)
\$660	12.18
P.T contribution/dwelling	P.T. charge/m <sup>2</sup> GFA (Retail)
\$10	0.36

			Credit (\$ 2004-05)			
Land use	Dwellings/ha	Trips/ha	Roads	Paths	P.T.	Total
Very Low Density Residential	5	35	\$0	\$0	\$0.00	\$0
Houses	12	83	\$25,740	\$7,841	\$118.80	\$33,700
Houses and multi unit dwellings	16	95	\$28,710	\$10,454	\$158.40	\$39,323
Multi unit dwellings	25	125	\$36,135	\$16,335	\$247.50	\$52,718
Retail (m <sup>2</sup> GFA)	N.A	600	30.74	12.06	0.36	43.15
Other Residential (e.g. Caravan Parks)	N.A	125	\$36,135	\$16,335	\$247.50	\$52,718

Land use	Dwellings/ha	Trips/ha	Contribution (ICUs)			
			Roads	Paths	P.T.	Total
Very Low Density Residential	5	35	12844	3028	46	15,917
Houses	12	83	23853	7266	110	31,229
Houses and multi unit dwellings	16	95	26606	9688	147	36,440
Multi unit dwellings	25	125	33486	15138	229	48,853
Retail (m <sup>2</sup> GFA)	N.A	600	28.49	11.17	0.33	39.99
Other Residential (e.g. Caravan Parks)	N.A	125	33486	15138	229	48,853

Land use	Dwellings/ha	Trips/ha	Credit (ICUs)				Total (Ha)	Total (dwelling)
			Roads	Paths	P.T.	Total		
Very Low Density Residential	5	35	0	0	0	0	0	
Houses	12	83	23615	7193	109	30,917	2576	
Houses and multi unit dwellings	16	95	26339	9591	145	36,076	2255	
Multi unit dwellings	25	125	33151	14986	227	48,365	1935	
Retail (m <sup>2</sup> GFA)	N.A	600	28.20	11.06	0.33	39.59	39.59	
Other Residential (e.g. Caravan Parks)	N.A	125	33151	14986	227	48,365	1935	

## Appendix C: Transport

**Table 8.4.2: Future Road Improvements**

Road	Proposed Hierarchy	Length (m)	Civil Costs (\$)	Signals (\$)
Blunder Rd (betw Crossacres & Redhead)	Arterial	342	1,197,000	
Blunder Rd (betw Redhead & Cloverdale)	Arterial	350	1,225,000	
Blunder Rd (betw Cloverdale & Blunder Ck)	Arterial	258	1,153,000	250,000
Inala Ave (betw King Ave & Blunder Rd)	Arterial	750	2,625,000	
Inala Ave & King Ave intersection	Arterial		350,000	350,000
Crossacres (betw Blunder & Rockfield Rd)	District	705	1,198,500	
Crossacres (betw Rockfield & Joseph Banks)	District	223	629,100	250,000
Rockfield (betw Wallaroo & Crossacres)	Neighbourhood	326	321,152	
Rockfield (betw Crossacres & Redhead)	Neighbourhood	345	399,870	
Rockfield (betw Redhead & Cloverdale)	Neighbourhood	342	336,914	
Cloverdale (betw Rockfield & Blunder)	Neighbourhood	696	745,650	
Redhead & Blunder Rd (intersection closure)	Neighbourhood	690	610,740	
Brookside	Future Suburban	138	96,600	
Peacock St (realignment & signals)	Neighbourhood	250	455,000	250,000

\*15% major roads & 5% local roads

\*\*land acquisition only required as development occurs

^EC land acquisition = 18m<sup>2</sup> & Non-developable land acquisition = 7m<sup>2</sup>

Blunder Rd stage 6 not included (Blunder Ck bridge duplication)

Rd widening land offsettable infrastructure

Roundabout (\$)	Service relocation*, establishment fees (2%) & design costs (8%)	15% Contingency (\$)	Ultimate Width (m)	Widening location	Additional Widening (m)	Land required (m <sup>2</sup> )	cost/ m <sup>2</sup> ^
	299,250	179,550	38	East	18	6840	18
	306,250	183,750	38	East	18	7000	7
	288,250	172,950	38	East	18	5160	7
	656,250	393,750	40	Sth-East		3200	18
	179,775	179,775	32	North	12	11633	18
	94,365	94,365	32	North	12	3680	18
	39,120	39,120	24	Both	4	1304	18
60,000	50,400	50,400	24	Both	4	2070	18
	41,040	41,040	24	Both	4	2052	18
60,000	92,520	92,520	24	Both	4	4176	18
	72,450	72,450	24	Both	4	2760	18
	24,150	14,490	34	South	14	1932	18
		68,250			12	3020	18

total land cost (\$)	TOTAL (2004/05 \$)	TOTAL (ICUs)	Timing
123,120	1,798,920	1,637,017	2011-2015
49,000	1,764,000	1,605,240	2011-2015
36,120	1,650,320	1,501,791	2011-2015
57,600	3,732,600	3,396,666	2011-2015
	350,000	318,500	2011-2015
209,394	1,767,444	1,608,374	2011-2015
66,240	884,070	804,504	2011-2015
23,472	422,864	384,807	Development Condition'
37,260	537,930	489,516	Development Condition
36,936	455,930	414,897	Development Condition
75,168	1,005,858	915,331	Development Condition
49,680	805,320	732,841	Development Condition
34,776	170,016	154,715	Development Condition**
54,360	645,860	587,733	Development Condition

## Appendix D: Community Purposes

**Table D.1: Inputs**

Real Discount Rate	0.06
Base year for calculation of NPV	2001
Value of an ICU base year 2004/05	\$ 1.00
	\$ 1.09

**Table D.2: Community Purposes Equivalent Hectare (EH) Conversion Rates**

Type of Development	Conversion Rate
Very Low Density Residential	0.417
Houses	1.000
Houses and multi unit dwellings	1.149
Multi unit dwellings	1.509
Retail	0.205
Other Residential (e.g. Caravan Parks)	0.341

**Table D.3: Forecast Development as Community Purposes EHs**

	Very low density res.	Houses	Houses and multi unit dwellings	Multi unit dwellings	Retail	Other Residential	Total
Existing situation*	0.0	6.3	0.0	0.0	0.0	3.3	9.6
2020 (Ultimate)	7.0	123.9	37.5	15.0	0.1	3.3	186.7

**Table D.4: Forecast New Growth Development as Community Purposes EHs (all contribution areas)**

Year	Very low density res.	Houses	Houses and multi unit dwellings	Multi unit dwellings	Retail	Other Residential	Total
2003/04	0.4	9.2	2.2	1.0	0.0	0.0	12.9
2004/05	0.4	9.2	2.2	1.0	0.0	0.0	12.9
2005/06	0.4	9.2	2.2	1.0	0.0	0.0	12.9
2006/07	0.4	9.2	2.2	1.0	0.0	0.0	12.9
2007/08	0.4	9.2	2.2	1.0	0.0	0.0	12.9
2008/09	0.4	9.2	2.2	1.0	0.0	0.0	12.9
2009/10	0.4	9.2	2.2	1.0	0.0	0.0	12.9
2010/11	0.9	7.5	1.4	1.5	0.0	0.0	11.3
2011/12	0.9	7.5	1.4	1.5	0.1	0.0	11.4
2012/13	0.9	7.5	1.4	1.5	0.0	0.0	11.3
2013/14	0.9	7.5	1.4	1.5	0.0	0.0	11.3
2014/15	0.9	7.5	1.4	1.5	0.0	0.0	11.3
2015/16	0.0	3.1	3.0	0.0	0.0	0.0	6.1
2016/17	0.0	3.1	3.0	0.0	0.0	0.0	6.1
2017/18	0.0	3.1	3.0	0.0	0.0	0.0	6.1
2018/19	0.0	3.1	3.0	0.0	0.0	0.0	6.1
2019/20	0.0	3.1	3.0	0.0	0.0	0.0	6.1
Total	7.0	117.6	37.5	15.0	0.1	0.0	177.2
NPV	4.6	79.0	22.6	10.1	0.1	0.0	116.3

**Conversion Rates**

Land Use	People / Unit of Dev.	area/pp (m <sup>2</sup> )	provision / ha	conversion rate
Very Low Density Residential	15	40	580	0.42
Houses	35	40	1392	1.00
Houses and multi unit dwellings	40	40	1600	1.15
Multi unit dwellings	53	40	2100	1.51
Retail	29	10	286	0.21
Other Residential (e.g. Caravan Parks)	19	25	475	0.34



Table D5: Park Aquisition

Item	Park Name & Location	Description	Land above Flood Regulation Line (FRL)			Land below FRL			Contingency (15%)	Total Area (Ha)	Total Costs (03/04)
			Land above FRL (ha)	Value (\$/ha)	Land Value (\$)	Land below FRL (ha)	Value (\$/ha)	Land Value (\$)			
1# Proposed	Inala Ave	Local	1.00	70,000	70,000	-	-	-	10,500	1.00	\$ 80,500
2# Proposed	Peacock St	District	10.90	70,000	763,000	2.40	50,000	120,000	132,450	13.30	\$ 1,015,450
3# Existing	Currawong St	Local	0.64	180,000	115,200	-	-	-	17,280	0.64	\$ 132,480
4# Proposed	Rockfield Rd Nth	Local	0.96	180,000	172,800	0.18	50,000	9,000	27,270	1.14	\$ 209,070
5# Proposed	Brookside St	Local	1.00	180,000	180,000	-	-	-	27,000	1.00	\$ 207,000
6# Proposed	Crossacres St	District	0.30	180,000	54,000	-	-	-	8,100	0.30	\$ 62,100
7# Proposed	Redhead St	Local	1.50	180,000	270,000	-	-	-	40,500	1.50	\$ 310,500
8# Proposed	Outlook Park	Local	1.71	180,000	307,800	-	-	-	46,170	1.71	\$ 353,970
9# Proposed	Corridor Link Park	Corridor Link	1.92	180,000	345,600	1.07	50,000	53,500	59,865	2.99	\$ 458,965
10# Existing	Blunder Rd (Ck)	Corridor Link	0.00	-	-	2.81	50,000	140,350	21,053	2.81	\$ 161,403
<b>Total</b>			<b>19.93</b>	<b>1,400,000</b>	<b>2,278,400</b>	<b>6.46</b>	<b>200,000</b>	<b>322,850</b>	<b>390,188</b>	<b>26.39</b>	<b>\$ 2,991,438</b>

Table D6: Park Improvement

Item	Park Name & Location	Total Area (Ha)	Site Preparation Costs				Improvement Costs						
			Site Preparation Cost (\$/Ha)	Sub-Total (03-04)	Project Management Rate (15%)	General Contingency (10%)	Preparation Total (03-04)	Proposed Improvement Costs (\$/Ha)	Sub-Total (03-04)	Project Management Rate (15%)	General Contingency (10%)	Improvement Total (03-04)	Total Cost (03/04)
1# Proposed	Inala Ave	1.00	32,500	\$ 32,500	4,875	3,250	\$ 40,625	65,600	\$ 65,600	9,840	6,560	\$ 82,000	\$ 122,625
2# Proposed	Peacock St	13.30	122,019	\$ 1,622,850	243,428	162,285	\$ 2,028,563	166,852	\$2,219,132	332,870	221,913	\$ 2,773,915	\$ 4,802,478
3# Existing	Currawong St	0.64	-	\$ -	-	-	\$ -	55,703	\$ 35,650	5,348	3,565	\$ 44,563	\$ 44,563
4# Proposed	Rockfield Rd Nth	1.14	32,605	\$ 37,170	5,576	3,717	\$ 46,463	65,943	\$ 75,175	11,276	7,518	\$ 93,969	\$ 140,431
5# Proposed	Brookside St	1.00	32,500	\$ 32,500	4,875	3,250	\$ 40,625	50,600	\$ 50,600	7,590	5,060	\$ 63,250	\$ 103,875
6# Proposed	Crossacres St	0.30	20,000	\$ 6,000	900	600	\$ 7,500	476,667	\$ 143,000	21,450	14,300	\$ 178,750	\$ 186,250
7# Proposed	Redhead St	1.50	28,333	\$ 42,500	6,375	4,250	\$ 53,125	132,421	\$ 198,632	29,795	19,863	\$ 248,290	\$ 301,415
8# Proposed	Outlook Park	1.71	20,000	\$ 34,200	5,130	3,420	\$ 42,750	36,623	\$ 62,625	9,394	6,263	\$ 78,281	\$ 121,031
9# Proposed	Corridor Link Park	2.99	20,000	\$ 59,800	8,970	5,980	\$ 74,750	12,726	\$ 38,052	5,708	3,805	\$ 47,565	\$ 122,315
10# Existing	Blunder Rd (Ck)	2.81	-	\$ -	-	-	\$ -	-	\$ -	-	-	\$ -	\$ -
Plan Preparation							\$ 45,000					\$ -	\$ 45,000
<b>Total</b>				<b>1,867,520</b>			<b>\$ 2,379,400</b>		<b>2,888,466</b>			<b>\$ 3,610,583</b>	<b>\$ 5,989,983</b>

Table D7: Present Value of Infrastructure

Item	Acquisition Costs				Preparation & Improvement Costs			
	Total Costs (ICUs)	Planned Provision	Assumed Provision for Discounting	Present Value (ICUs)	Total Costs as (ICUs)	Planned Provision	Assumed Provision for Discounting	Present Value (ICUs)
1# Proposed	73,853	2011-2015	2013	34,625	112,500	2011-2015	2013	52,744
2# Proposed	931,606	2011-2015	2013	436,773	4,405,943	2011-2015	2013	2,065,678
3# Existing	121,541	2002	2002	108,171	40,883	2011-2015	2013	19,168
4# Proposed	191,807	2004-2010	2006	135,217	128,836	2004-2010	2006	90,824
5# Proposed	189,908	2004-2010	2006	133,878	95,298	2004-2010	2006	67,181
6# Proposed	56,972	2011-2015	2013	26,711	170,872	2011-2015	2013	80,111
7# Proposed	284,862	2016-2020	2018	99,800	276,528	2016-2020	2018	96,880
8# Proposed	324,743	2011-2015	2013	152,252	111,038	2011-2015	2013	52,059
9# Proposed	421,069	2011-2015	2013	197,413	112,216	2011-2015	2013	52,611
10# Existing	148,076	2002	2002	131,787	-	-	0	-
Plan Preparation					41,284	2002	2002	36,743

Costs	Land Acquis.	Prep.	Embell.	Total
Existing	\$ 293,883	\$ -	\$ 44,563	\$ 338,445
Future	\$ 2,697,555	\$ 2,334,400	\$ 3,434,614	\$ 8,466,569
<b>Total</b>	<b>\$ 2,991,438</b>	<b>\$ 2,334,400</b>	<b>\$ 3,479,177</b>	<b>\$ 8,805,014</b>

Future Commitments	
Land Acquis.	\$ 2,697,555
Prep.	\$ 2,334,400
Existing Embell.	\$ 44,563
Future Embell.	\$ 3,434,614
<b>Total</b>	<b>\$ 8,511,132</b>

**Table D8: Cost Apportionment**

Item	Present value (ICUs)	Forecast external use in		Existing use		Forecast future internal use in 2020			
		% total use	Apporioned cost (ICUs)	% total use	Apporioned cost (ICUs)	% total use	Apporioned cost (ICUs)	NPV future demand (EHs)	Contribution (ICUs/EH)
1# Proposed	87,370	0%	-	0%	-	100%	87,370	116	751
2# Proposed	2,502,451	70%	1,751,716	0%	-	30%	750,735	116	6,454
3# Existing	127,339	40%	50,936	30%	38,202	30%	38,202	116	328
4# Proposed	226,041	40%	90,416	0%	-	60%	135,625	116	1,166
5# Proposed	201,059	0%	-	0%	-	100%	201,059	116	1,729
6# Proposed	106,822	0%	-	0%	-	100%	106,822	116	918
7# Proposed	196,679	0%	-	0%	-	100%	196,679	116	1,691
8# Proposed	204,311	0%	-	0%	-	100%	204,311	116	1,756
9# Proposed	250,025	95%	237,523	0%	-	5%	12,501	116	107
10# Existing	131,787	0%	-	50%	65,893	50%	65,893	116	566
Plan Preparation	36,743					100%	36,743	116	316
<b>Total</b>	<b>4,070,627</b>		<b>2,130,591</b>		<b>104,095</b>		<b>1,835,941</b>		<b>15,784</b>

\*City wide parks contribution

**Table D9: Contribution and Credit**

Type of development	Contribution Ha/sqm GFA (ICUs)	Credit dwelling/sqm GFA (ICUs)
Very Low Density Residential	6,577/Ha	0/dwelling
Houses	15,784/Ha	1,289/dwelling
Houses and multi unit dwellings	18,142/Ha	1,111/dwelling
Multi unit dwellings	23,812/Ha	933/dwelling
Retail	0.65/m2	0.63/m2
Other Residential (e.g. Caravan Parks)	5,386/Ha	211/dwelling