

## Appendix B1 Public Recreation Land

**Table B.1.1: Equivalent Hectares (EH) rates**

Local Plan Land Use Type	Assumed Density (people/ha)	Demand (PRL area m <sup>2</sup> /person)	Desired Provision (m <sup>2</sup> /ha)	PRL EH conversion rate	PRL ET /dwelling or m <sup>2</sup> GFA conversion rate	ICU 2006-07\$
Very low density residential	15	40	600	0.38	1.07692	\$1.42
Low density residential	39	40	1560	1.00	1.00000	
Low-medium density residential	40	40	1600	1.03	0.71795	
Mixed use in Town Centre	95	10	950	0.61	0.00052	
Mixed use not in Town Centre	76	10	760	0.49	0.00085	
Town Centre	50	10	380	0.24	0.00030	
Neighbourhood Centre	25	10	89	0.06	0.00028	
Business Centre	25	10	89	0.06	0.00028	
Business Park	25	10	89	0.06	0.00045	
Gateway Civic	50	10	380	0.24	0.00037	
State Service Centre	15	10	54	0.03	0.00027	
Community Use	15	10	54	0.03	0.00015	

**Table B.1.2: Forecast development as PRL EHs**

	Very low density res.	Low density res	Low-medium density res	Mixed Use in Town Centre	Mixed Use not in Town Centre	Town Centre	Neighbourhood Centre	Business Centre	Business Park	Gateway Civic	State Service Centre	Community Use	Total
Existing situation*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NPV 2021 (Ultimate) situation	7.9	185.5	63.9	4.5	1.6	0.9	0.1	0.0	2.8	2.0	0.0	0.7	<b>270.0</b>

\* the number of existing EHs is assumed to be zero, as this PSP assumes existing uses are to be replaced by new development in total

**Table B.1.3 Forecast Development by Stage, as PRL EHs**

Stage No.	Very low density res.	Low density res	Low-medium density res	Mixed Use in Town Centre	Mixed Use not in Town Centre	Town Centre	Neighbourhood Centre	Business Centre	Business Park	Gateway Civic	State Service Centre	Community Use	Total
Stage 1	0.0	132.3	32.6	0.4	0.0	0.0	0.1	0.0	2.8	0.0	0.0	0.0	168.3
Stage 2	12.6	81.8	46.5	6.7	0.7	1.4	0.1	0.0	0.6	2.1	0.0	0.8	153.3
Stage 3	0.0	49.3	15.6	0.0	2.4	0.0	0.0	0.0	0.0	1.4	0.1	0.5	69.4
Total	12.6	263.4	94.8	7.1	3.1	1.4	0.1	0.0	3.5	3.5	0.1	1.3	390.9
NPV *	7.9	185.5	63.9	4.5	1.6	0.9	0.1	0.0	2.8	2.0	0.0	0.7	270.0
*Discount rate is 6%	3.23%	67.38%	24.24%	1.81%	0.79%	0.36%	0.03%	0.01%	0.89%	0.89%	0.02%	0.33%	100.00%
	2.94%	68.71%	23.67%	1.67%	0.58%	0.32%	0.04%	0.01%	1.03%	0.73%	0.02%	0.27%	100.00%

## Appendix B1 Public Recreation Land

Table B.1.4: PRL Infrastructure Cost

Item Identification	Item Description	Total Infrastructure Cost (2006-07\$)	Stage	Assumed Discounting Year	NPV (2006-07\$) *	NPV (ICUs)
TC2.1	town park	2,708,556	2	2014	1,699,382	1,196,748
TC2.2	local park	896,003	2	2014	562,163	395,890
TC2.3	community garden and local park	1,436,271	2	2014	901,134	634,601
TC2.4	major informal recreation node	607,494	2	2014	381,149	268,415
TC2.5	park in employment centre	945,561	3	2019	443,316	312,194
TC2.6	town square	813,518	2	2014	510,411	359,444
NW2.1	Corridor Link/ nature park	869,065	1	2009	729,684	513,862
NW2.2	major informal recreation node	856,456	1	2009	719,097	506,406
NW2.3	park in employment centre	1,799,416	1	2009	1,510,824	1,063,961
NW2.4	local park	841,759	1	2009	706,757	497,716
NW2.5	local park	1,372,016	1	2009	1,151,971	811,247
NW2.6	urban common	873,922	1	2009	733,761	516,733
NE2.1	local park	863,769	1	2009	725,237	510,730
NE2.2	local park	616,849	1	2009	517,918	364,731
NE2.3	local park	827,559	1	2009	694,834	489,320
NE2.4	park in employment centre	928,859	1	2009	779,888	549,217
NE2.5	local park	857,379	1	2009	719,872	506,952
NE2.6	local park	1,473,759	1	2009	1,237,396	871,406
E2.1	urban common	497,226	2	2014	311,965	219,694
E2.2	local park	1,412,628	2	2014	886,300	624,155
E2.3	urban common	867,674	1	2009	728,515	513,039
E2.4	local park	599,241	2	2014	375,971	264,768
P2.1	nature park	763,730	2	2014	479,173	337,446
P2.2	Corridor Link/ nature park	976,996	2	2014	612,979	431,675
P2.3	major informal recreation node	1,367,756	2	2014	858,147	604,329
P2.4	local park	620,896	3	2019	291,100	205,000
U2.1	local park	659,801	3	2019	309,340	217,845
U2.2	main informal recreation node	1,420,651	3	2019	666,056	469,054
U2.3	Corridor Link/ nature park	507,969	3	2019	238,156	167,715
DS1	Northern District Sports Park	13,490,536	1	2009	11,326,914	7,976,700
DS2	Southern District Sports Park	18,250,420	3	2019	8,556,509	6,025,711
<b>Total</b>		<b>61,023,725</b>			<b>40,365,919</b>	<b>28,426,704</b>

\*Discount rate is 6%

## Appendix B1 Public Recreation Land

Table B.1.5 Cost Apportionment

Item Identification	Item Description	NPV ICUs	External Use		Existing Use		Future use		Charge	
			% total use	Apportioned cost (ICU)	% total use	Apportioned cost (ICU)	% total use	Apportioned cost (ICU)	NPV future demand (EHs)	Charge (ICUs/EH)
TC2.1	town park	1,196,748	0%	0	0%	0	100%	1,196,748	270.0	4,432
TC2.2	local park	395,890	0%	0	0%	0	100%	395,890	270.0	1,466
TC2.3	community garden and local park	634,601	0%	0	0%	0	100%	634,601	270.0	2,350
TC2.4	major informal recreation node	268,415	0%	0	0%	0	100%	268,415	270.0	994
TC2.5	park in employment centre	312,194	0%	0	0%	0	100%	312,194	270.0	1,156
TC2.6	town square	359,444	0%	0	0%	0	100%	359,444	270.0	1,331
NW2.1	Corridor Link/ nature park	513,862	0%	0	0%	0	100%	513,862	270.0	1,903
NW2.2	major informal recreation node	506,406	0%	0	0%	0	100%	506,406	270.0	1,876
NW2.3	park in employment centre	1,063,961	0%	0	0%	0	100%	1,063,961	270.0	3,940
NW2.4	local park	497,716	0%	0	0%	0	100%	497,716	270.0	1,843
NW2.5	local park	811,247	0%	0	0%	0	100%	811,247	270.0	3,005
NW2.6	urban common	516,733	0%	0	0%	0	100%	516,733	270.0	1,914
NE2.1	local park	510,730	0%	0	0%	0	100%	510,730	270.0	1,892
NE2.2	local park	364,731	0%	0	0%	0	100%	364,731	270.0	1,351
NE2.3	local park	489,320	0%	0	0%	0	100%	489,320	270.0	1,812
NE2.4	park in employment centre	549,217	0%	0	0%	0	100%	549,217	270.0	2,034
NE2.5	local park	506,952	0%	0	0%	0	100%	506,952	270.0	1,878
NE2.6	local park	871,406	0%	0	0%	0	100%	871,406	270.0	3,227
E2.1	urban common	219,694	0%	0	0%	0	100%	219,694	270.0	814
E2.2	local park	624,155	0%	0	0%	0	100%	624,155	270.0	2,312
E2.3	urban common	513,039	0%	0	0%	0	100%	513,039	270.0	1,900
E2.4	local park	264,768	0%	0	0%	0	100%	264,768	270.0	981
P2.1	nature park	337,446	0%	0	0%	0	100%	337,446	270.0	1,250
P2.2	Corridor Link/ nature park	431,675	0%	0	0%	0	100%	431,675	270.0	1,599
P2.3	major informal recreation node	604,329	0%	0	0%	0	100%	604,329	270.0	2,238
P2.4	local park	205,000	0%	0	0%	0	100%	205,000	270.0	759
U2.1	local park	217,845	0%	0	0%	0	100%	217,845	270.0	807
U2.2	main informal recreation node	469,054	0%	0	0%	0	100%	469,054	270.0	1,737
U2.3	Corridor Link/ nature park	167,715	0%	0	0%	0	100%	167,715	270.0	621
DS1	Northern District Sports Park	7,976,700	0%	0	0%	0	100%	7,976,700	270.0	29,543
DS2	Southern District Sports Park	6,025,711	0%	0	0%	0	100%	6,025,711	270.0	22,317
<b>Total</b>		<b>28,426,704</b>						<b>28,426,704</b>		<b>105,281</b>

\* it was assumed that demand for future community infrastructure will be generated by the future development 100%

Table B.1.6 Infrastructure Charge Rate

Type of development	Charge/ Ha (ICUs)	Charge/ ET (ICUs)
Very low density residential	40,493	7,435
Low density residential	105,281	
Low-medium density residential	107,981	
Mixed use in Town Centre	64,114	
Mixed use not in Town Centre	51,291	
Town Centre	25,645	
Neighbourhood Centre	6,006	
Business Centre	6,006	
Business Park	6,006	
Gateway Civic	25,645	
State Service Centre	3,644	
Community Use	3,644	

## Appendix B2 Land for Other Community Purposes (community facilities)

Table B.2.1: EH Rates\*

Local Plan Land Use Type	Assumed Density (people/ha)	Demand (PRL area m <sup>2</sup> /person) ha	Desired Provision (m <sup>2</sup> /ha)	LOCP EH conversion rate	LOCP ET /dwelling or m <sup>2</sup> GFA conversion rate	ICU 2006-07\$
Very low density residential	15	40	600	0.38	1.07692	1.42
Low density residential	39	40	1560	1.00	1.00000	
Low-medium density residential	40	40	1600	1.03	0.71795	
Mixed use in Town Centre	95	10	950	0.61	0.00052	
Mixed use not in Town Centre	76	10	760	0.49	0.00085	
Town Centre	50	10	380	0.24	0.00030	
Neighbourhood Centre	25	10	89	0.06	0.00028	
Business Centre	25	10	89	0.06	0.00028	
Business Park	25	10	89	0.06	0.00045	
Gateway Civic	50	10	380	0.24	0.00037	
State Service Centre	15	10	54	0.03	0.00027	
Community Use	15	10	54	0.03	0.00015	

LOCP EH conversion rate establishes a relative demand for LOCP or PRL generated by a particular land use

LOCP ET conversion rate establishes a relative demand for LOCP or PRL generated by an Equivalent Tenement

Table B.2.2: Forecast development as community facilities EHs

	Very low density res.	Low density res	Low-medium density res	Mixed Use in Town Centre	Mixed Use not in Town Centre	Town Centre	Neighbourhood Centre	Business Centre	Business Park	Gateway Civic	State Service Centre	Community Use	Total
Existing situation*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0
NPV 2021 (Ultimate) situation	7.9	185.5	63.9	4.5	1.6	0.9	0.1	0.0	2.8	2.0	0.0	0.7	270.0

\* the number of existing ETs is assumed to be zero

Table B.2.3 Stage Development, as community facilities EHs

Stage No.	Very low density res.	Low density res	Low-medium density res	Mixed Use in Town Centre	Mixed Use not in Town Centre	Town Centre	Neighbourhood Centre	Business Centre	Business Park	Gateway Civic	State Service Centre	Community Use	Total
Stage 1	0.0	132.3	32.6	0.4	0.0	0.0	0.1	0.0	2.8	0.0	0.0	0.0	168.3
Stage 2	12.6	81.8	46.5	6.7	0.7	1.4	0.1	0.0	0.6	2.1	0.0	0.8	153.3
Stage 3	0.0	49.3	15.6	0.0	2.4	0.0	0.0	0.0	0.0	1.4	0.1	0.5	69.4
Total	12.6	263.4	94.8	7.1	3.1	1.4	0.1	0.0	3.5	3.5	0.1	1.3	390.9
NPV *	7.9	185.5	63.9	4.5	1.6	0.9	0.1	0.0	2.8	2.0	0.0	0.7	270.0

\* discount rate is 6%

Table B.2.4: LOCP Infrastructure Costs

Item Identification	Item Description	Total Cost (2006-07\$)	Stage	Assumed Discounting Year	NPV (2006-07\$)	NPV ICUs
CF1-1	Town centre major community centre	877,560	2	2014	550,592	387,741
CF1-2	Neighbourhood centre south (Mile Platting Road)	846,544	2	2014	531,132	374,037
CF1-3	Multi-purpose community facility	197,235	1	2009	165,603	116,622
CF1-4	Multi-purpose community facility (Ford Road)	677,235	1	2009	568,620	400,437
CF1-5	Neighbourhood centre north (Ford Road/ Gardener Road)	846,544	1	2009	710,775	500,546
<b>Total cost</b>		<b>3,445,119</b>			<b>2,526,722</b>	<b>1,779,381</b>

\*Discount rate is 6%

## Appendix B2 Land for Other Community Purposes (community facilities)

Table B.2.5 Cost Apportionment\*

Item Identification		Item Description	Discounted Cost NPV, ICUs	External Use		Existing Use		Future use		Charge	
				% total use	Apportioned cost	% total use	Apportioned cost	% total use	Apportioned cost	NPV future demand (EHs)	Charge (ICUs/EH)
CF1-1		Town centre major community centre	387,741	0%	0	0%	0	100%	387,741	270.0	1,436
CF1-2		Neighbourhood centre south (Mile Platting Road)	374,037	0%	0	0%	0	100%	374,037	270.0	1,385
CF1-3		Multi-purpose community facility	116,622	0%	0	0%	0	100%	116,622	270.0	432
CF1-4		Multi-purpose community facility (Ford Road)	400,437	0%	0	0%	0	100%	400,437	270.0	1,483
CF1-5		Neighbourhood centre north (Ford Road/ Gardener Road)	500,546	0%	0	0%	0	100%	500,546	270.0	1,854
<b>Total cost</b>			<b>1,779,381</b>						<b>1,779,381</b>		<b>6,590</b>

\*it was assumed that the future community facilities will be utilised 100% by the future development in Rochedale

Table B.2.6 Infrastructure Charge Rate

Type of development	Charge/ Ha (ICUs)	Charge/ ET (ICUs)
Very low density residential	2,535	465
Low density residential	6,590	
Low-medium density residential	6,759	
Mixed use in Town Centre	4,013	
Mixed use not in Town Centre	3,211	
Town Centre	1,605	
Neighbourhood Centre	376	
Business Centre	376	
Business Park	376	
Gateway Civic	1,605	
State Service Centre	228	
Community Use	228	

## Appendix B3: Public Recreation Land (parks)

Local Plan Land Use Type	People/ Unit of Development		provision (m <sup>2</sup> )/ ha	Units of Measure	Assumed plot ratio (non-res)	Assumed GFA (m <sup>2</sup> /Ha)	DENSITY Dwellings/Ha (based on RUCLP)	Occupancy rates (people per unit of measure) (based on RUCLP)	CONVERSION ET / Dwelling or ET / m <sup>2</sup> GFA	ICUs / Ha (from Cost Apportionment)	Contribution rate ICUs / ET
	(ha)	area/ pp (m <sup>2</sup> )									
Very low density residential	15	40	600	Dwelling			5.00	3.0000	1.0769	40,493	
Low density residential	39	40	1560	Dwelling			14.00	2.7857	1.0000	105,281	
Low-medium density residential	40	40	1600	Dwelling			20.00	2.0000	0.7179	107,981	
Mixed use in Town Centre	95	10	950	m <sup>2</sup> of GFA	1.65	16500	34.10	0.0058	0.00052	64,114	
Mixed use not in Town Centre	76	10	760	m <sup>2</sup> of GFA	0.80	8000	27.28	0.0095	0.00085	51,291	
Town Centre	50	10	380	m <sup>2</sup> of GFA	1.50	15000	17.95	0.0033	0.00030	25,645	
Neighbourhood Centre	25	10	89	m <sup>2</sup> of GFA	0.80	8000	8.97	0.0031	0.00028	6,006	7,435
Business Centre	25	10	89	m <sup>2</sup> of GFA	0.80	8000	8.97	0.0031	0.00028	6,006	
Business Park	25	10	89	m <sup>2</sup> of GFA	0.50	5000	8.97	0.0050	0.00045	6,006	
Gateway Civic	50	10	380	m <sup>2</sup> of GFA	1.20	12000	17.95	0.0042	0.00037	25,645	
State Service Centre	15	10	54	m <sup>2</sup> of GFA	0.50	5000	5.38	0.0030	0.00027	3,644	
Community Use	15	10	54	m <sup>2</sup> of GFA	0.90	9000	5.38	0.0017	0.00015	3,644	

## Appendix B3: Land for Other Community Purposes (community facilities)

Local Plan Land Use Type	People/ Unit of Development		provision (m <sup>2</sup> )/ ha	Units of Measure	Assumed plot ratio (non-res)	Assumed GFA (m <sup>2</sup> /Ha)	DENSITY Dwellings/Ha (based on RUCLP)	Occupancy rates (people per unit of measure) (based on RUCLP)	CONVERSION ET / Dwelling or ET / m <sup>2</sup> GFA	ICUs / Ha (from Cost Apportionment)	Contribution rate ICUs / ET
	(ha)	area/ pp (m <sup>2</sup> )									
Very low density residential	15	40	600	Dwelling			5.00	3.0000	1.0769	2,535	
Low density residential	39	40	1560	Dwelling			14.00	2.7857	1.0000	6,590	
Low-medium density residential	40	40	1600	Dwelling			20.00	2.0000	0.7179	6,759	
Mixed use in Town Centre	95	10	950	m <sup>2</sup> of GFA	1.65	16500	34.10	0.0058	0.00052	4,013	
Mixed use not in Town Centre	76	10	760	m <sup>2</sup> of GFA	0.80	8000	27.28	0.0095	0.00085	3,211	
Town Centre	50	10	380	m <sup>2</sup> of GFA	1.50	15000	17.95	0.0033	0.00030	1,605	
Neighbourhood Centre	25	10	89	m <sup>2</sup> of GFA	0.80	8000	8.97	0.0031	0.00028	376	465
Business Centre	25	10	89	m <sup>2</sup> of GFA	0.80	8000	8.97	0.0031	0.00028	376	
Business Park	25	10	89	m <sup>2</sup> of GFA	0.50	5000	8.97	0.0050	0.00045	376	
Gateway Civic	50	10	380	m <sup>2</sup> of GFA	1.20	12000	17.95	0.0042	0.00037	1,605	
State Service Centre	15	10	54	m <sup>2</sup> of GFA	0.50	5000	5.38	0.0030	0.00027	228	
Community Use	15	10	54	m <sup>2</sup> of GFA	0.90	9000	5.38	0.0017	0.00015	228	

**Appendix B4 Parks Detailed Costings**

Item Identification	Item Description	Land Acquisition					Total Land Acquisition Cost (2006-07\$)	Embellishments				Total PRL Infrastructure Cost (2006-07\$)	
		m <sup>2</sup> total	m <sup>2</sup> Rate 1	m <sup>2</sup> Rate 2	m <sup>2</sup> Rate 3	m <sup>2</sup> Rate 4		Embellishment Cost (2006-07\$)	Contingencies & Indirect Costs (2006-07\$)				Total Embellishment Cost & Contingencies (2006-07\$)
			\$20	\$70	\$310	\$310							
							Contingency	Design Cost	ICP Preparation Cost				
TC2.1	town park	8,000	0	0	0	8,000	2,480,000	160,955	48,287	16,096	3,219	228,556	2,708,556
TC2.2	local park in high density area	10,000	0	10,000	0	0	700,000	138,030	41,409	13,803	2,761	196,003	896,003
TC2.3	community garden and local park in high density area	17,000	0	17,000	0	0	1,190,000	173,430	52,029	17,343	3,469	246,271	1,436,271
TC2.4	major informal recreation node	6,000	0	6,000	0	0	420,000	132,038	39,611	13,204	2,641	187,494	607,494
TC2.5	park in employment centre	10,000	0	10,000	0	0	700,000	172,930	51,879	17,293	3,459	245,561	945,561
TC2.6	town square	2,000	0	0	0	2,000	620,000	136,280	40,884	13,628	2,726	193,518	813,518
NW2.1	Corridor Link/ nature park in high density area	10,000	0	10,000	0	0	700,000	119,080	35,718	11,906	2,381	169,065	869,065
NW2.2	major informal recreation node in high density area	10,000	0	10,000	0	0	700,000	110,180	33,054	11,018	2,204	156,456	856,456
NW2.3	park in employment centre	10,000	0	6,000	4,000	0	1,660,000	98,180	29,454	9,818	1,964	139,416	1,799,416
NW2.4	local park in high density area	10,000	0	10,000	0	0	700,000	99,830	29,949	9,983	1,997	141,759	841,759
NW2.5	local park in high density area	17,000	0	17,000	0	0	1,190,000	128,180	38,454	12,818	2,564	182,016	1,372,016
NW2.6	urban common	10,000	0	10,000	0	0	700,000	122,480	36,744	12,248	2,450	173,922	873,922
NE2.1	local park in high density area	10,000	0	10,000	0	0	700,000	115,330	34,599	11,533	2,307	163,769	863,769
NE2.2	local park	7,000	0	7,000	0	0	490,000	89,330	26,799	8,933	1,787	126,849	616,849
NE2.3	local park in high density area	10,000	0	10,000	0	0	700,000	89,830	26,949	8,983	1,797	127,559	827,559
NE2.4	park in employment centre	10,000	8,000	0	2,000	0	780,000	104,830	31,449	10,483	2,097	148,859	928,859
NE2.5	local park in high density area	10,000	0	10,000	0	0	700,000	110,830	33,249	11,083	2,217	157,379	857,379
NE2.6	local park in high density area	17,000	0	17,000	0	0	1,190,000	199,830	59,949	19,983	3,997	283,759	1,473,759
E2.1	urban common	5,000	0	5,000	0	0	350,000	103,680	31,104	10,368	2,074	147,226	497,226
E2.2	local park	17,000	0	17,000	0	0	1,190,000	156,780	47,034	15,678	3,136	222,628	1,412,628
E2.3	major informal recreation node	10,000	0	10,000	0	0	700,000	118,080	35,424	11,808	2,362	167,674	867,674
E2.4	local park in high density area	10,000	0	7,000	0	0	490,000	76,930	23,079	7,693	1,539	109,241	599,241
P2.1	nature park	10,000	0	10,000	0	0	700,000	44,880	13,464	4,488	898	63,730	763,730
P2.2	Corridor Link/ nature park	13,000	0	13,000	0	0	910,000	47,180	14,154	4,718	944	66,996	976,996
P2.3	major informal recreation node	17,000	0	17,000	0	0	1,190,000	125,180	37,554	12,518	2,504	177,756	1,367,756
P2.4	local park	7,000	0	7,000	0	0	490,000	92,180	27,654	9,218	1,844	130,896	620,896
U2.1	local park	5,500	0	7,500	0	0	525,000	94,930	28,479	9,493	1,899	134,801	659,801
U2.2	main informal recreation node	17,000	0	17,000	0	0	1,190,000	162,430	48,729	16,243	3,249	230,651	1,420,651
U2.3	Corridor Link/ nature park	6,000	0	6,000	0	0	420,000	61,950	18,585	6,195	1,239	87,969	507,969
DS1	district sport	100,000	0	100,000	0	0	7,000,000	4,570,800	1,371,240	457,080	91,416	6,490,536	13,490,536
DS2	district sport	140,000	0	140,000	0	0	9,800,000	5,951,000	1,785,300	595,100	119,020	8,450,420	18,250,420
<b>Total Cost</b>		<b>541,500</b>					<b>41,275,000</b>	<b>13,907,553</b>	<b>4,172,266</b>		<b>TOTAL</b>	<b>61,023,725</b>	

Land Contingencies	Embellishments Contingencies & Indirect		
Contingencies	Construction	Design	ICP
0%	30%	10%	2%

## Appendix B5 Community Facilities Detailed Costings

Item Identification	Item Description	Stage	Embelishments				Land Acquisition					
			m2 Total	Unit rate (2005-06 \$/m2)	Unit rate (2006-07 \$/m2)	Embelishments cost (2006-07\$)	m2 Total	m2 Rate 1	m2 Rate 2	m2 Rate 3	m2 Rate 4	Land acquisition cost (2006-07\$)
CF1-1	<b>TOWN CENTRE MAJOR COMMUNITY CENTRE</b>	2										
	Earthworks for site		9,000	4	4.36	39,240	9,000	0.00	0.00	0	9,000.00	2,790,000
	Grass cover, topsoil, grading and grass establishment costs		9,000	10	10.90	98,100						
	Drainage works		9,000	4	4.36	39,240						
	<b>Sub total</b>					<b>176,580</b>						<b>2,790,000</b>

Item Identification	Item Description	Stage	Embelishments				Land Acquisition					
			m2 Total	Unit rate (2005-06 \$/m2)	Unit rate (2006-07 \$/m2)	Embelishments cost (2006-07\$)	m2 Total	m2 Rate 1	m2 Rate 2	m2 Rate 3	m2 Rate 4	Land acquisition cost (2006-07\$)
CF1-2	<b>NEIGHBOURHOOD CENTRE SOUTH (MILE PLATTING ROAD)</b>	2										
	Earthworks for site		2,500	4	4.36	10,900	2,500	0.00	0.00	2,500	0.00	775,000
	Grass cover, topsoil, grading and grass establishment costs		2,500	10	10.90	27,250						
	Drainage works		2,500	4	4.36	10,900						
	<b>Sub total</b>					<b>49,050</b>						<b>775,000</b>

Item Identification	Item Description	Stage	Embelishments				Land Acquisition					
			m2 Total	Unit rate (2005-06 \$/m2)	Unit rate (2006-07 \$/m2)	Embelishments cost (2006-07\$)	m2 Total	m2 Rate 1	m2 Rate 2	m2 Rate 3	m2 Rate 4	Land acquisition cost (2006-07\$)
CF1-3	<b>MULTI-PURPOSE COMMUNITY FACILITY 1</b>	1										
	Earthworks for site		2,000	4	4.36	8,720	2,000	0.00	2,000.00	0	0.00	140,000
	Grass cover, topsoil, grading and grass establishment costs		2,000	10	10.90	21,800						
	Drainage works		2,000	4	4.36	8,720						
	<b>Sub total</b>					<b>39,240</b>						<b>140,000</b>

The exact location of the Multi-purpose community facility 1 to be determined at a later stage.



## Appendix B5 Community Facilities Detailed Costings

Embellishments							Land Acquisition					
Item Identification	Item Description	Stage	m2 Total	Unit rate (2005-06 \$/m2)	Unit rate (2006-07 \$/m2)	Embellishments cost (2006-07\$)	m2 Total	m2 Rate 1 \$20	m2 Rate 2 \$70	m2 Rate 3 \$310	m2 Rate 4 \$310	Land acquisition cost (2006-07\$)
CF1-4	<b>MULTI-PURPOSE COMMUNITY FACILITY 2 (FORD ROAD)</b>	1										
	Earthworks for site		2,000	4	4.36	8,720	2,000	0.00	0.00	2,000	0.00	620,000
	Grass cover, topsoil, grading and grass establishment costs		2,000	10	10.90	21,800						
	Drainage works		2,000	4	4.36	8,720						
	<b>Sub total</b>					<b>39,240</b>						<b>620,000</b>

Multi-purpose community facility 2 is planned to be located within Neighbourhood Centre North

Embellishments							Land Acquisition					
Item Identification	Item Description	Stage	m2 Total	Unit rate (2005-06 \$/m2)	Unit rate (2006-07 \$/m2)	Embellishments cost (2006-07\$)	m2 Total	m2 Rate 1 \$20	m2 Rate 2 \$70	m2 Rate 3 \$310	m2 Rate 4 \$310	Land acquisition cost (2006-07\$)
CF1-5	<b>NEIGHBOURHOOD CENTRE NORTH (FORD/ GARDENER ROAD )</b>	1										
	Earthworks for site		2,500	4	4.36	10,900	2,500	0.00	0.00	2,500	0.00	775,000
	Grass cover, topsoil, grading and grass establishment costs		2,500	10	10.90	27,250						
	Drainage works		2,500	4	4.36	10,900						
	<b>Sub total</b>					<b>49,050</b>						<b>775,000</b>

Item Description	Land acquisition cost (2006-07\$)	Embellishments cost (2006-07\$)				Total Embellishments Cost & Contingencies (2006-07\$)	Total LOCP infrastructure cost (2006-07\$)
		Embellishments cost (2006-07\$)	Contingencies & Indirect (2006-07\$)				
			Contingencies	Design Cost	ICP Preparation Cost		
TOWN CENTRE MAJOR COMMUNITY CENTRE	620,000	176,580	52,974	22,955	5,050	257,560	877,560
NEIGHBOURHOOD CENTRE SOUTH (MILE PLATTING ROAD)	775,000	49,050	14,715	6,377	1,403	71,544	846,544
MULTI-PURPOSE COMMUNITY FACILITY 1	140,000	39,240	11,772	5,101	1,122	57,235	197,235
MULTI-PURPOSE COMMUNITY FACILITY 2 (FORD ROAD)	620,000	39,240	11,772	5,101	1,122	57,235	677,235
NEIGHBOURHOOD CENTRE NORTH (FORD/ GARDENER ROAD )	775,000	49,050	14,715	6,377	1,403	71,544	846,544
<b>Total</b>	<b>2,930,000</b>	<b>353,160</b>	<b>105,948</b>	<b>48,911</b>	<b>10,100</b>	<b>TOTAL</b>	<b>3,445,119</b>

Land Contingencies
Contingencies
0%

Embellishments Contingencies & Indirect		
Construction	Design	ICP
30%	10%	2%

## Appendix B6 Community Facilities Detailed Costings

For the purposes of calculating NPVs, it is assumed that infrastructure within each stage is built in the middle year.

Staging is as follows:

Stage	Period	Year*
1	2007-2011	2009
2	2012-2016	2014
3	2017-2021	2019

\* Assumed year of construction for NPV purposes.

Discount Rate

NPV%	6.00%
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Base Year	2006
	2006-2007 financial year

ICU 2006-07\$	\$1.42
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For the purposes of calculating land values, the following land rates are used

Land valuation rate	Value, \$/ha	Value, \$/m <sup>2</sup>
Waterway corridor-private	\$200,000	\$20
Rate 1	\$200,000	\$20
Rate 2	\$700,000	\$70
Rate 3	\$3,100,000	\$310
Rate 4	\$3,100,000	\$310

Rates are based on land use categories as follows

Land valuation rate	Land use	
		Core waterway corridors -public
		Core waterway corridors - private
Rate 1	VLR	Very-low density residential
Rate 1	Ha	Habitat
Rate 1	EP	Environmental protection
Rate 1	Ru	Rural
Rate 2	LR	Low Density residential
Rate 2	LMR	Low-medium density residential
Rate 2	MU	Mixed use
Rate 2	CU	Community use
Rate 3	Bu	Business service centre/Business park
Rate 3	GC	Gateway Civic
Rate 3	NC	Neighbourhood Centre
Rate 3	TC	Town Centre

### Appendix B7 Parks Embellishments Summary

Existing parks																	
Park name	Pk size (ha)	District Informal Use	Local Inf use, inf rec	Local inf use, urban common		Main pedestrian link	Abutting waterway	Active recreation	Play facilities	Barbecue node	Lighting	Significant vegetation Potential	Detention basin adjacent to park	Surrounding land uses	Embellishments	Cost	
1331	1.15				Nature (PRL=10%)	0	0	0	0	0	0	1	0	EP, Bushland housing	N/A	N/A	
1903	0.58				Nature (PRL=10%)	0	1	0	0	0	0	1	0	Technology Park	N/A	N/A	
632	0.00				Ancillary (Park 5.6 ha)	0	1	0	0	0	0	1	0	Main Roads	N/A	N/A	
<b>Total Existing Local Parks PRL (ha)</b>					<b>1.73</b>												
Proposed district sports parks																	
DS1	10.0				Sports	1	1	1	District	1	1	1	0	Business Park, EP, LR	Refer to appendix 5.5 and 5.6	\$4,570,800	
DS2	14.0				Sports	1	0	1	District	1	1	1	0	School, LR	Refer to appendix 5.5 and 5.6	\$5,951,000	
<b>Total District Parks PRL (ha)</b>					<b>24.0</b>												<b>\$10,521,800</b>

District Informal Use Parks are indicated in bold

Figures in bold indicate main feature of park: 1=yes; 0=no.

**Proposed Informal Use parks by neighbourhood - parks in bold are District Informal Use Parks, those shaded are identified as Neighbourhood parks in the Master Plan**

**Town Centre neighbourhood: Miles Platting Road/Gardner Road intersection**

Park name	Pk size (ha)	District Informal Use	Local Inf use, inf rec	Local inf use, urban common	Corridor link	Main pedestrian link	Abutting waterway	Active recreation	Play facilities	Barbecue node	Lighting	Significant vegetation	Potential Detention basin adjacent to pk	Surrounding land uses	Embellishments	Cost
TC2.1	0.80		1			1	1	0	1	0	0	1	0	Mixed use and core retail	Urban informal recreation, as per Master Plan sketch.	\$160,955
TC2.2	1.00		1			0	0	1	1	0	1	1	1	Mixed Use, LMR, LR	Informal recreation node with mature trees.	\$138,030
TC2.3	1.70	1				0	0	1	0	1	1	1	1	Mixed use, LR, LMR	District Informal Use Park and Community Garden with mango tree orchard	\$173,430
TC2.4	0.60		1			1	1	1	1	0	1	1	1	Mixed use, core retail, LMR, W'way	Botanical garden and youth activity node	\$132,038
TC2.5	1.00		1			1	0	1	0	1	1	0	1	LMR, Civic Gateway	Informal active recreation node. Training lights to kick-about space.	\$172,930
TC2.6	0.2			1		1	0	0	0	0	1	0	0	Mixed use, core retail, community facility	Urban square with artwork	\$136,280
<b>5.30</b>	<b>1</b>	<b>4</b>	<b>1</b>	<b>0</b>	<b>Subtotal embellishments in Town Centre neighbourhood</b>											<b>\$913,663</b>

**North-western neighbourhood: Gardner Road/Ford Rd extension intersection**

NW2.1	1.00				1	1	1	1	1	1	0	1	1	LMR, LR, waterway	Corridor link and informal use node	\$119,060
NW2.2	1.00		1			1	1	1	1	1	0	1	0	LR, Business Park	Local informal use node, ecological EW link	\$110,180
NW2.3	1.00		1			0	0	1	1	0	0	1	1	LR, Business Park	Informal use park node on ridge top	\$98,180
NW2.4	1.00		1			0	1	1	1	0	0	1	1	LR, LMR, waterway	Informal use park node	\$99,830
NW2.5	1.70	1				0	0	1	1	1	1	1	1	LMR, LR	District Informal Use node	\$128,180
NW2.6	0.70			1		1	0	0	0	0	1	1	0	LMR, LR, Mixed Use	Local urban common in established setting	\$122,480
<b>6.40</b>	<b>1</b>	<b>3</b>	<b>1</b>	<b>1</b>	<b>Subtotal embellishments in North-western neighbourhood</b>											<b>\$677,910</b>

Revised Public Recreation Land provision - Rochedale Local Plan and ICP

**North-eastern neighbourhood: Rochedale Road/Ford Road inteserction**

Park name	Pk size (ha)	District Informal Use	Local Inf use, inf rec	Local inf use, urban	Corridor link	Main pedestrian link	Abutting waterway	Active recreation	Play facilities	Barbecue node	Lighting	Significant vegetation	Potential Detention basin adjacent	Surrounding land uses	Embellishments	Cost
NE2.1	1.00		1			0	0	1	1	1	0	1	0	LMR, LR, Mixed Use	Informal use node	\$115,330
NE2.2	0.70		1			1	0	1	1	0	0	0	1	LMR, LR	Informal use node along bikeway	\$89,330
NE2.3	1.00		1			1	1	1	1	0	0	1	0	LR, LMR	Informal use node	\$89,830
NE2.4	1.00		1			0	1	1	1	0	0	1	0	LMR, LR, Business Pk	Informal use node	\$104,830
NE2.5	1.00		1			0	0	1	1	0	1	1	0	LMR, LR	Informal use node	\$110,830
NE2.6	1.70	1				1	0	0	0	1	1	1	1	LMR, LR	District informal use node. Training lights to kick-about space.	\$199,830
<b>6.40</b>	<b>1</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>Subtotal embellishments - North-eastern neighbourhood</b>										<b>\$709,980</b>	

**Eastern neighbourhood: Rochedale Road/Miles Platting Road intersection**

E2.1	0.50			1		1	0	0	0	0	1	1	0	LMR/Mixed use	Green oasis at interface between Miles Platting Rd and main ped links	\$103,680
E2.2	1.70	1				1	0	1	1	1	1	1	0	LMR/Mixed use, LR	District informal use node node in established landscape	\$156,780
E2.3	1.00		1			1	0	1	1	0	0	0	0	LR	Informal use node along ped/cycle link	\$118,080
E2.4	1.00		1			1	0	1	1	0	0	0	0	LR	Informal use node	\$76,930
<b>4.20</b>	<b>1</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>Subtotal embellishments - Eastern neighbourhood</b>										<b>\$455,470</b>	

**Priestdale Road neighbourhood: Priestdale Road/Gardner Rd extension intersection**

P2.1	1.00		1			0	1	0	0	1	0	1	1	LR, LMR	Recreation node/habitat link	\$44,880
P2.2	1.30				1	1	1	0	0	0	1	0	1	LR, LMR, W'way	Corridor link to Redeemer (by T&T). Habitat link	\$47,180
P2.3	1.70	1				1	1	1	1	1	1	1	1	LR, High School, W'way	District Informal Use park along waterway corridor	\$125,180
P2.4	0.70		1			0	0	1	1	1	0	1	1	LR, LMR	Informal use node.	\$92,180
<b>4.70</b>	<b>1</b>	<b>2</b>	<b>0</b>	<b>1</b>	<b>Subtotal embellishments - Priestdale Road neighbourhood</b>										<b>\$309,420</b>	

District Informal Use Parks are indicated in bold

Figures in bold indicate main feature of park: 1=yes; 0=no.

Underwood Road neighbourhood: Busway station precinct and Southern link to Sports Park																
Park name	Pk size (ha)	District Informal Use	Local Inf use, inf rec	Local inf use, urban common	Corridor link	Main pedestrian link	Abutting waterway	Active recreation	Play facilities	Barbecue node	Lighting	Significant vegetation	Potential Detention basin adjacent to pk	Surrounding land uses	Embellishments	Cost
U2.1	0.70		1			0	1	1	1	0	0	1	1	LMR, w'way	informal use node along waterway	\$94,930
U2.2	1.70	1				1	1	1	1	1	1	1	1	LR, MU, w'way	District Informal Use park along waterway corridor	\$162,430
U2.3	0.60				1	1	1	0	0	0	0	1	0	LR, w'way	Corridor link to w'way corridor.	\$61,950
<b>3.00</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>Subtotal embellishments</b>										<b>\$319,310</b>	
Total number of local parks	6	17	3	3	19	12	23	20	13	15	24	14				
<b>Sub Total local parks (district)</b>		<b>29</b>		<b>55.73</b>	<b>Sub total embellishments - informal use parks</b>										<b>3,385,753</b>	
					<b>Total embellishments - local and district parks</b>										<b>13,907,553</b>	
Target Population													15000			
PRL/1000 population													3.72			

District Informal Use Parks are indicated in bold

Figures in bold indicate main feature of park: 1=yes; 0=no.

## Appendix B8 Parks Embellishments Detailed Costings

### PROPOSED LOCAL PARKS IN TOWN CENTRE NEIGHBOURHOOD

<b>TC2.1 Town Park - Core Retail, Mixed Use and Waterway areas</b>			
<b>Land preparation</b>	<b>price (\$)</b>	<b>qty</b>	<b>cost</b>
Land prep and site clearing (m2)	3.25	8000	\$26,000
Electricity connection	4,000.00	1	\$4,000
Water connection	2,750.00	1	\$2,750
Bollards (lm)	35.00	250	\$8,750
Lock rail	500.00	1	\$500
<b>Total land preparation</b>			<b>\$42,000</b>
<b>Park embellishments</b>	<b>price (\$)</b>	<b>qty</b>	<b>cost</b>
Pathway (2.5m wide exposed agg.)	95.00	100	\$9,500
aluminium seats	1000.00	4	\$4,000
shelters with tables	12000.00	2	\$24,000
Drinking fountain	880.00	1	\$880
Enclosed rubbish bin	1650.00	4	\$6,600
Small play facility (toddlers)	20000.00	1	\$20,000
Advanced trees	275.00	5	\$1,375
Small trees	400.00	20	\$8,000
Turfing	5.20	8000	\$41,600
Interpretative signage	1500.00	1	\$1,500
Park sign	1500.00	1	\$1,500
<b>Total embellishments</b>			<b>\$118,955</b>
<b>TOTAL COST TC2.1</b>			<b>\$160,955</b>
<b>TC2.2 Informal recreation node - High amenity - LMR, Mixed Use and LR areas</b>			
<b>Land preparation</b>	<b>price (\$)</b>	<b>qty</b>	<b>cost</b>
Land prep and site clearing (m2)	2.00	10000	\$20,000
Electricity connection	4,000.00	1	\$4,000
Water connection	2,750.00	1	\$2,750
Bollards (lm)	35.00	200	\$7,000
Lock rail	500.00	1	\$500
<b>Total land preparation</b>			<b>\$34,250</b>
<b>Park embellishments</b>	<b>price (\$)</b>	<b>qty</b>	<b>cost</b>
Pathway (2.5m wide exposed agg.)	95.00	50	\$4,750
aluminium seats	1000.00	4	\$4,000
shelters with tables	12000.00	1	\$12,000
Drinking fountain	880.00	1	\$880
Enclosed rubbish bin	1650.00	1	\$1,650
Lights	3500.00	10	\$35,000
Small play facility (toddlers)	20000.00	1	\$20,000
Turfing	5.20	2500	\$13,000
Landscape to base of weeping figs	10000.00	1	\$10,000
Grass seeding (lump sum)	1000.00	1	\$1,000
Park sign	1500.00	1	\$1,500
<b>Total embellishments</b>			<b>\$103,780</b>
<b>TOTAL COST TC2.2</b>			<b>\$138,030</b>

**TC2.3 Community Garden and informal recreation node - LMR, Mixed Use and LR areas**

<b>Land preparation</b>	<b>price (\$)</b>	<b>qty</b>	<b>cost</b>
Land prep and site clearing (m2)	2.00	17,000	\$34,000
Electricity connection	4,000.00	1	\$4,000
Water connection	2,750.00	1	\$2,750
Bollards (lm)	35.00	200	\$7,000
Lock rail	500.00	1	\$500
<b>Total land preparation</b>			<b>\$48,250</b>
<b>Park embellishments</b>	<b>price (\$)</b>	<b>qty</b>	<b>cost</b>
aluminium seats	1000.00	3	\$3,000
Gazebo	15000.00	3	\$45,000
Double electric barbecue	10000.00	1	\$10,000
Drinking fountain	880.00	1	\$880
Enclosed rubbish bin	1650.00	2	\$3,300
Lights	3500.00	5	\$17,500
Shed and toilet/shower	30000.00	1	\$30,000
Turfing	5.20	2500	\$13,000
Grass seeding (lump sum)	1000.00	1	\$1,000
Park sign	1500.00	1	\$1,500
<b>Total embellishments</b>			<b>\$125,180</b>
<b>TOTAL COST TC2.3</b>			<b>\$173,430</b>

**TC2.4 Informal recreation node - Youth hub. LMR, Mixed Use and Core Retail areas**

<b>Land preparation</b>	<b>price (\$)</b>	<b>qty</b>	<b>cost</b>
Land prep and site clearing (m2)	2.00	6000	\$12,000
Electricity connection	4,000.00	1	\$4,000
Water connection	2,750.00	1	\$2,750
Bollards (lm)	35.00	200	\$7,000
Lock rail	500.00	1	\$500
<b>Total land preparation</b>			<b>\$25,750</b>
<b>Park embellishments</b>	<b>price (\$)</b>	<b>qty</b>	<b>cost</b>
Timber bridge	25000.00	1	\$25,000
Pathway (2.5m wide)	120.00	50	\$6,000
aluminium seats	1000.00	4	\$4,000
shelters with tables	12000.00	1	\$12,000
Drinking fountain	880.00	1	\$880
Enclosed rubbish bin	1650.00	1	\$1,650
Lights	3500.00	6	\$21,000
Full size basket ball court	30000.00	1	\$30,000
Turfing	5.20	2500	\$13,000
Grass seeding (lump sum)	1000.00	1	\$1,000
Park sign	1500.00	1	\$1,500
<b>Preliminary total</b>			<b>\$85,030</b>
Contingency	25%	1	\$21,258
<b>Total embellishments</b>			<b>\$106,288</b>
<b>TOTAL COST TC2.4</b>			<b>\$132,038</b>



<b>TC2.5 Active recreation node (with lighting) - Gateway Civic and LMR areas</b>			
<b>Land preparation</b>	<b>price (\$)</b>	<b>qty</b>	<b>cost</b>
Land prep and site clearing (m2)	2.00	10000	\$20,000
Electricity connection	4,000.00	1	\$4,000
Water connection	2,750.00	1	\$2,750
Bollards (lm)	35.00	200	\$7,000
Lock rail	500.00	1	\$500
<b>Total land preparation</b>			<b>\$34,250</b>
<b>Park embellishments</b>	<b>price (\$)</b>	<b>qty</b>	<b>cost</b>
aluminium seats	1000.00	4	\$4,000
shelters with tables	12000.00	1	\$12,000
Drinking fountain	880.00	1	\$880
Double electric barbecue	10000.00	1	\$10,000
Training lights (16 lights on 4 poles)	65000.00	1	\$65,000
Enclosed rubbish bin	1650.00	1	\$1,650
Turfing	5.20	7500	\$39,000
Grass seeding (lump sum)	1000.00	1	\$1,000
Advanced trees	275.00	10	\$2,750
Small trees	30.00	30	\$900
Park sign	1500.00	1	\$1,500
<b>Total embellishments</b>			<b>\$138,680</b>
<b>TOTAL COST TC2.5</b>			<b>\$172,930</b>

<b>TC2.6 Rochedale Town Square</b>			
<b>Land preparation</b>	<b>price (\$)</b>	<b>qty</b>	<b>cost</b>
Land prep and site clearing (m2)	3.25	2000	\$6,500
Electricity connection	4,000.00	1	\$4,000
Water connection	2,750.00	1	\$2,750
Bollards (lm)	35.00	250	\$8,750
Lock rail	500.00	1	\$500
<b>Total land preparation</b>			<b>\$22,500</b>
<b>Park embellishments</b>	<b>price (\$)</b>	<b>qty</b>	<b>cost</b>
Paving	80.00	100	\$8,000
aluminium seats	1000.00	4	\$4,000
Drinking fountain	880.00	1	\$880
Enclosed rubbish bin	1650.00	2	\$3,300
Information shelter	6500.00	1	\$6,500
Lights	3500.00	6	\$21,000
Advanced trees	275.00	20	\$5,500
Turfing	5.20	8000	\$41,600
Artwork	20000.00	1	\$20,000
Interpretative signage	1500.00	1	\$1,500
Park sign	1500.00	1	\$1,500
<b>Total embellishments</b>			<b>\$113,780</b>
<b>TOTAL COST TC2.6</b>			<b>\$136,280</b>

Number of parks in TC

## Appendix B9 Parks Embellishments Detailed Costings

### PROPOSED LOCAL PARKS IN NORTH-WESTERN NEIGHBOURHOOD

NW2.1 Corridor link/nature park with informal recreation node - LMR and LR areas			
Land preparation	price (\$)	qty	cost
Land prep and site clearing (m2)	2.00	10000	\$20,000
Electricity connection	4,000.00	1	\$4,000
Water connection	2,750.00	1	\$2,750
Fencing and bollards (lm)	35.00	192	\$6,720
Lock rail	500.00	1	\$500
<b>Total land preparation</b>			<b>\$33,970</b>
Park embellishments	price (\$)	qty	cost
Pathway	65.00	170	\$11,050
aluminium seats	1000.00	3	\$3,000
shelters with tables	12000.00	1	\$12,000
Double electric barbecue	10000.00	1	\$10,000
Drinking fountain	880.00	1	\$880
Enclosed rubbish bin	1650.00	1	\$1,650
Medium play facility	30000.00	1	\$30,000
Small trees (reveg)	30.00	15	\$450
Turfing	5.20	2800	\$14,560
Park sign	1500.00	1	\$1,500
<b>Total embellishments</b>			<b>\$85,090</b>
<b>TOTAL COST NW2.1</b>			<b>\$119,060</b>

NW2.2 Informal recreation node along public waterway - LMR			
Land preparation	price (\$)	qty	cost
Land prep and site clearing (m2)	2.00	10000	\$20,000
Electricity connection	4,000.00	1	\$4,000
Water connection	2,750.00	1	\$2,750
Fencing and bollards (lm)	35.00	200	\$7,000
Lock rail	500.00	1	\$500
<b>Total land preparation</b>			<b>\$34,250</b>
Park embellishments	price (\$)	qty	cost
aluminium seats	1000.00	3	\$3,000
shelters with tables	12000.00	2	\$24,000
Enclosed rubbish bin	1650.00	1	\$1,650
Double electric barbecue	10000.00	1	\$10,000
Drinking fountain	880.00	1	\$880
Small play facility (toddlers)	20000.00	1	\$20,000
Small trees	30.00	30	\$900
Turfing	5.20	2500	\$13,000
Grass seeding (lump sum)	1000.00	1	\$1,000
Park sign	1500.00	1	\$1,500
<b>Total embellishments</b>			<b>\$75,930</b>
<b>TOTAL COST NW2.2</b>			<b>\$110,180</b>

NW2.3 Informal recreation node on ridge top - LR and Business Park areas			
Land preparation	price (\$)	qty	cost
Land prep and site clearing (m2)	2.00	10000	\$20,000
Electricity connection	4,000.00	1	\$4,000
Water connection	2,750.00	1	\$2,750
Fencing and bollards (lm)	35.00	200	\$7,000
Lock rail	500.00	1	\$500
<b>Total land preparation</b>			<b>\$34,250</b>
Park embellishments	price (\$)	qty	cost
aluminium seats	1000.00	3	\$3,000
shelters with tables	12000.00	1	\$12,000
Enclosed rubbish bin	1650.00	1	\$1,650
Double electric barbecue	10000.00	1	\$10,000
Drinking fountain	880.00	1	\$880
Small play facility (toddlers)	20000.00	1	\$20,000
Small trees	30.00	30	\$900
Turfing	5.20	2500	\$13,000
Grass seeding (lump sum)	1000.00	1	\$1,000
Park sign	1500.00	1	\$1,500
<b>Total embellishments</b>			<b>\$63,930</b>
<b>TOTAL COST NW2.3</b>			<b>\$98,180</b>

<b>NW2.4 Informal recreation node - LMR and LR area</b>			
<b>Land preparation</b>	<b>price (\$)</b>	<b>qty</b>	<b>cost</b>
Land prep and site clearing (m2)	2.00	10000	\$20,000
Electricity connection	4,000.00	1	\$4,000
Water connection	2,750.00	1	\$2,750
Fencing and bollards (lm)	35.00	200	\$7,000
Lock rail	500.00	1	\$500
<b>Total land preparation</b>			<b>\$34,250</b>
<b>Park embellishments</b>	<b>price (\$)</b>	<b>qty</b>	<b>cost</b>
aluminium seats	1000.00	3	\$3,000
shelters with tables	12000.00	1	\$12,000
Enclosed rubbish bin	1650.00	2	\$3,300
Drinking fountain	880.00	1	\$880
Medium play facility	30000.00	1	\$30,000
Small trees	30.00	30	\$900
Turfing	5.20	2500	\$13,000
Grass seeding (lump sum)	1000.00	1	\$1,000
Park sign	1500.00	1	\$1,500
<b>Total embellishments</b>			<b>\$65,580</b>
<b>TOTAL COST NW2.4</b>			<b>\$99,830</b>

<b>NW2.5 District Informal recreation node - LMR and LR areas</b>			
<b>Land preparation</b>	<b>price (\$)</b>	<b>qty</b>	<b>cost</b>
Land prep and site clearing (m2)	2.00	17000	\$34,000
Electricity connection	4,000.00	1	\$4,000
Water connection	2,750.00	1	\$2,750
Fencing and bollards (lm)	35.00	200	\$7,000
Lock rail	500.00	1	\$500
<b>Total land preparation</b>			<b>\$48,250</b>
<b>Park embellishments</b>	<b>price (\$)</b>	<b>qty</b>	<b>cost</b>
aluminium seats	1000.00	3	\$3,000
shelters with tables	12000.00	1	\$12,000
Light	3500.00	6	\$21,000
Enclosed rubbish bin	1650.00	1	\$1,650
Drinking fountain	880.00	1	\$880
Half basket-ball court	25000.00	1	\$25,000
Small trees	30.00	30	\$900
Turfing	5.20	2500	\$13,000
Grass seeding (lump sum)	1000.00	1	\$1,000
Park sign	1500.00	1	\$1,500
<b>Total embellishments</b>			<b>\$79,930</b>
<b>TOTAL COST NW2.5</b>			<b>\$128,180</b>

<b>NW2.6 Neighbourhood common - LMR and Mixed Use areas</b>			
<b>Land preparation</b>	<b>price (\$)</b>	<b>qty</b>	<b>cost</b>
Land prep and site clearing (m2)	2.00	7000	\$14,000
Electricity connection	4,000.00	1	\$4,000
Water connection	2,750.00	1	\$2,750
Fencing and bollards (lm)	35.00	200	\$7,000
Lock rail	500.00	1	\$500
<b>Total land preparation</b>			<b>\$28,250</b>
<b>Park embellishments</b>	<b>price (\$)</b>	<b>qty</b>	<b>cost</b>
aluminium seats	1000.00	3	\$3,000
Gazebo	15000.00	1	\$15,000
Artwork	20000.00	1	\$20,000
Enclosed rubbish bin	1650.00	1	\$1,650
Drinking fountain	880.00	1	\$880
Light	3500.00	6	\$21,000
Turfing	5.20	6000	\$31,200
Park sign	1500.00	1	\$1,500
<b>Total embellishments</b>			<b>\$94,230</b>
<b>TOTAL COST NW2.6</b>			<b>\$122,480</b>

Num,ber of parks in NW

## Appendix B10 Parks Embellishments Detailed Costings

### PROPOSED LOCAL PARKS IN NORTH-EASTERN NEIGHBOURHOOD

<b>NE2.1 Informal recreation node - LMR and LR areas</b>			
<b>Land preparation</b>	<b>price (\$)</b>	<b>qty</b>	<b>cost</b>
Land prep and site clearing (m2)	2.00	10000	\$20,000
Electricity connection	4,000.00	1	\$4,000
Water connection	2,750.00	1	\$2,750
Fencing and bollards (lm)	35.00	200	\$7,000
Lock rail	500.00	1	\$500
<b>Total land preparation</b>			<b>\$34,250</b>
<b>Park embellishments</b>	<b>price (\$)</b>	<b>qty</b>	<b>cost</b>
aluminium seats	1000.00	3	\$3,000
shelters with tables	12000.00	1	\$12,000
Double electric barbecue	10000.00	1	\$10,000
Enclosed rubbish bin	1650.00	2	\$3,300
Drinking fountain	880.00	1	\$880
Medium play facility	30000.00	1	\$30,000
Small trees	30.00	30	\$900
Advanced trees	275.00	20	\$5,500
Turfing	5.20	2500	\$13,000
Grass seeding (lump sum)	1000.00	1	\$1,000
Park sign	1500.00	1	\$1,500
<b>Total embellishments</b>			<b>\$81,080</b>
<b>TOTAL EMBELLISHMENTS COST NE2.1</b>			<b>\$115,330</b>

<b>NE2.2 Informal recreation node along main ped. network - LMR and LR areas</b>			
<b>Land preparation</b>	<b>price (\$)</b>	<b>qty</b>	<b>cost</b>
Land prep and site clearing (m2)	2.00	7000	\$14,000
Electricity connection	4,000.00	1	\$4,000
Water connection	2,750.00	1	\$2,750
Fencing and bollards (lm)	35.00	200	\$7,000
Lock rail	500.00	1	\$500
<b>Total land preparation</b>			<b>\$28,250</b>
<b>Park embellishments</b>	<b>price (\$)</b>	<b>qty</b>	<b>cost</b>
aluminium seats	1000.00	3	\$3,000
shelters with tables	12000.00	1	\$12,000
Enclosed rubbish bin	1650.00	2	\$3,300
Drinking fountain	880.00	1	\$880
Small play facility	20000.00	1	\$20,000
Small trees	30.00	30	\$900
Advanced trees	275.00	20	\$5,500
Turfing	5.20	2500	\$13,000
Grass seeding (lump sum)	1000.00	1	\$1,000
Park sign	1500.00	1	\$1,500
<b>Total embellishments</b>			<b>\$61,080</b>
<b>TOTAL EMBELLISHMENTS COST NE2.2</b>			<b>\$89,330</b>

<b>NE2.3 Informal recreation node along Main ped. Network - LMR area</b>			
<b>Land preparation</b>	<b>price (\$)</b>	<b>qty</b>	<b>cost</b>
Land prep and site clearing (m2)	2.00	10000	\$20,000
Electricity connection	4,000.00	1	\$4,000
Water connection	2,750.00	1	\$2,750
Fencing and bollards (lm)	35.00	200	\$7,000
Lock rail	500.00	1	\$500
<b>Total land preparation</b>			<b>\$34,250</b>
<b>Park embellishments</b>	<b>price (\$)</b>	<b>qty</b>	<b>cost</b>
aluminium seats	1000.00	3	\$3,000
shelters with tables	12000.00	1	\$12,000
Enclosed rubbish bin	1650.00	2	\$3,300
Drinking fountain	880.00	1	\$880
Small play facility	20000.00	1	\$20,000
Small trees	30.00	30	\$900
Turfing	5.20	2500	\$13,000
Grass seeding (lump sum)	1000.00	1	\$1,000
Park sign	1500.00	1	\$1,500
<b>Total embellishments</b>			<b>\$55,580</b>
<b>TOTAL EMBELLISHMENTS COST NE2.3</b>			<b>\$89,830</b>

<b>NE2.4 Informal recreation node - LR and Business Park area</b>			
<b>Land preparation</b>	<b>price (\$)</b>	<b>qty</b>	<b>cost</b>
Land prep and site clearing (m2)	2.00	10000	\$20,000
Electricity connection	4,000.00	1	\$4,000
Water connection	2,750.00	1	\$2,750
Fencing and bollards (lm)	35.00	200	\$7,000
Lock rail	500.00	1	\$500
<b>Total land preparation</b>			<b>\$34,250</b>
<b>Park embellishments</b>	<b>price (\$)</b>	<b>qty</b>	<b>cost</b>
aluminium seats	1000.00	3	\$3,000
shelters with tables	12000.00	1	\$12,000
Lights	3500.00	10	\$35,000
Enclosed rubbish bin	1650.00	2	\$3,300
Drinking fountain	880.00	1	\$880
Small trees	30.00	30	\$900
Turfing	5.20	2500	\$13,000
Grass seeding (lump sum)	1000.00	1	\$1,000
Park sign	1500.00	1	\$1,500
<b>Total embellishments</b>			<b>\$70,580</b>
<b>TOTAL EMBELLISHMENTS COST NE2.4</b>			<b>\$104,830</b>

<b>NE2.5 Informal recreation node - LMR area</b>			
<b>Land preparation</b>	<b>price (\$)</b>	<b>qty</b>	<b>cost</b>
Land prep and site clearing (m2)	2.00	10000	\$20,000
Electricity connection	4,000.00	1	\$4,000
Water connection	2,750.00	1	\$2,750
Fencing and bollards (lm)	35.00	200	\$7,000
Lock rail	500.00	1	\$500
<b>Total land preparation</b>			<b>\$34,250</b>
<b>Park embellishments</b>	<b>price (\$)</b>	<b>qty</b>	<b>cost</b>
aluminium seats	1000.00	3	\$3,000
shelters with tables	12000.00	1	\$12,000
Lights	3500.00	6	\$21,000
Enclosed rubbish bin	1650.00	2	\$3,300
Drinking fountain	880.00	1	\$880
Small play facility	20000.00	1	\$20,000
Small trees	30.00	30	\$900
Turfing	5.20	2500	\$13,000
Grass seeding (lump sum)	1000.00	1	\$1,000
Park sign	1500.00	1	\$1,500
<b>Total embellishments</b>			<b>\$76,580</b>
<b>TOTAL EMBELLISHMENTS COST NE2.5</b>			<b>\$110,830</b>

<b>NE2.6 Ditrict Active Recreation node (with lighting) - LMR and LR areas</b>			
<b>Land preparation</b>	<b>price (\$)</b>	<b>qty</b>	<b>cost</b>
Land prep and site clearing (m2)	2.00	17000	\$34,000
Electricity connection	4,000.00	1	\$4,000
Water connection	2,750.00	1	\$2,750
Fencing and bollards (lm)	35.00	200	\$7,000
Lock rail	500.00	1	\$500
<b>Total land preparation</b>			<b>\$48,250</b>
<b>Park embellishments</b>	<b>price (\$)</b>	<b>qty</b>	<b>cost</b>
aluminium seats	1000.00	3	\$3,000
shelters with tables	12000.00	3	\$36,000
Double electric barbecue	10000.00	1	\$10,000
Medium play facility	30000.00	1	\$30,000
Training lights (16 lights on 4 poles)	65000.00	1	\$65,000
Enclosed rubbish bin	1650.00	2	\$3,300
Drinking fountain	880.00	1	\$880
Small trees	30.00	30	\$900
Grass seeding (lump sum)	1000.00	1	\$1,000
Park sign	1500.00	1	\$1,500
<b>Total embellishments</b>			<b>\$151,580</b>
<b>TOTAL EMBELLISHMENTS COST NE2.6</b>			<b>\$199,830</b>

Number of parks in NE

## Appendix B11 Parks Embellishments Detailed Costings

### PROPOSED LOCAL PARKS IN EASTERN NEIGHBOURHOOD

<b>E2.1 Neighbourhood common along Miles Platting Road Boulevard</b>			
<b>Land preparation</b>	<b>price (\$)</b>	<b>qty</b>	<b>cost</b>
Land prep and site clearing (m2)	2.00	5000	\$10,000
Electricity connection	4,000.00	1	\$4,000
Water connection	2,750.00	1	\$2,750
Bollards (lm)	35.00	250	\$8,750
Lock rail	500.00	1	\$500
<b>Total land preparation</b>			<b>\$26,000</b>
<b>Park embellishments</b>	<b>price (\$)</b>	<b>qty</b>	<b>cost</b>
Paving	80.00	100	\$8,000
aluminium seats	1000.00	4	\$4,000
Drinking fountain	880.00	1	\$880
Enclosed rubbish bin	1650.00	2	\$3,300
Lights	3500.00	4	\$14,000
Gazebo	15000.00	1	\$15,000
Artwork	20000.00	1	\$20,000
Grass seeding (lump sum)	1000.00	1	\$1,000
Landscape to base of weeping figs	10000.00	1	\$10,000
Park sign	1500.00	1	\$1,500
<b>Total embellishments</b>			<b>\$77,680</b>
<b>TOTAL COST E2.1</b>			<b>\$103,680</b>

<b>E2.2 District Informal Usen node - LR and LMR and Mixed Use areas</b>			
<b>Land preparation</b>	<b>price (\$)</b>	<b>qty</b>	<b>cost</b>
Land prep and site clearing (m2)	2.00	17000	\$34,000
Electricity connection	4,000.00	1	\$4,000
Water connection	2,750.00	1	\$2,750
Fencing and bollards (lm)	35.00	200	\$7,000
Lock rail	500.00	1	\$500
<b>Total land preparation</b>			<b>\$48,250</b>
<b>Park embellishments</b>	<b>price (\$)</b>	<b>qty</b>	<b>cost</b>
Pathway (1.5m wide)	65.00	60	\$3,900
aluminium seats	1000.00	3	\$3,000
shelters with tables	12000.00	1	\$12,000
Double electric barbecue	10000.00	1	\$10,000
Light	3500.00	6	\$21,000
Enclosed rubbish bin	1650.00	1	\$1,650
Drinking fountain	880.00	1	\$880
small play facility	25000.00	1	\$25,000
Fitness circuit	15000.00	1	\$15,000
Turfing	5.20	2500	\$13,000
Grass seeding (lump sum)	1000.00	1	\$1,000
Small trees	30.00	20	\$600
Park sign	1500.00	1	\$1,500
<b>Total embellishments</b>			<b>\$108,530</b>
<b>TOTAL COST E2.2</b>			<b>\$156,780</b>

<b>E2.3 Informal recreation node - LR area</b>			
<b>Land preparation</b>	<b>price (\$)</b>	<b>qty</b>	<b>cost</b>
Land prep and site clearing (m2)	2.00	10000	\$20,000
Electricity connection	4,000.00	1	\$4,000
Water connection	2,750.00	1	\$2,750
Fencing and bollards (lm)	35.00	200	\$7,000
Lock rail	500.00	1	\$500
<b>Total land preparation</b>			<b>\$34,250</b>
<b>Park embellishments</b>	<b>price (\$)</b>	<b>qty</b>	<b>cost</b>
aluminium seats	1000.00	3	\$3,000
shelters with tables	12000.00	1	\$12,000
Double electric barbecue	10000.00	1	\$10,000
Enclosed rubbish bin	1650.00	2	\$3,300
Drinking fountain	880.00	1	\$880
Medium play facility	30000.00	1	\$30,000
Small trees	30.00	30	\$900
Advanced trees	275.00	30	\$8,250
Turfing	5.20	2500	\$13,000
Grass seeding (lump sum)	1000.00	1	\$1,000
Park sign	1500.00	1	\$1,500
<b>Total embellishments</b>			<b>\$83,830</b>
<b>TOTAL COST E2.3</b>			<b>\$118,080</b>

<b>E2.4 Informal recreation node - LR and LMR area</b>			
<b>Land preparation</b>	<b>price (\$)</b>	<b>qty</b>	<b>cost</b>
Land prep and site clearing (m2)	2.00	10000	\$20,000
Electricity connection	4,000.00	1	\$4,000
Water connection	2,750.00	1	\$2,750
Fencing and bollards (lm)	35.00	200	\$7,000
Lock rail	500.00	1	\$500
<b>Total land preparation</b>			<b>\$34,250</b>
<b>Park embellishments</b>	<b>price (\$)</b>	<b>qty</b>	<b>cost</b>
aluminium seats	1000.00	2	\$2,000
shelters with tables	12000.00	1	\$12,000
Enclosed rubbish bin	1650.00	1	\$1,650
Drinking fountain	880.00	1	\$880
small play facility	20000.00	1	\$20,000
Small trees	30.00	30	\$900
Advanced trees	275.00	10	\$2,750
Grass seeding (lump sum)	1000.00	1	\$1,000
Park sign	1500.00	1	\$1,500
<b>Total embellishments</b>			<b>\$42,680</b>
<b>TOTAL COST E2.4</b>			<b>\$76,930</b>

Total number of parks E

4

## Appendix B12 Parks Embellishments Detailed Costings

### PROPOSED LOCAL PARKS IN PRIESTDALE ROAD NEIGHBOURHOOD

<b>P2.1 Informal recreation and habitat link - LMR, LR, EP area and High School</b>			
<b>Land preparation</b>	<b>price (\$)</b>	<b>qty</b>	<b>cost</b>
Land prep and site clearing (m2)	2.00	10000	\$20,000
Electricity connection	4,000.00	1	\$4,000
Water connection	2,750.00	1	\$2,750
Fencing and bollards (lm)	35.00	100	\$3,500
Lock rail	500.00	1	\$500
<b>Total land preparation</b>			<b>\$30,750</b>
<b>Park embellishments</b>	<b>price (\$)</b>	<b>qty</b>	<b>cost</b>
aluminium seats	1000.00	3	\$3,000
Enclosed rubbish bin	1650.00	1	\$1,650
Drinking fountain	880.00	1	\$880
Small trees	30.00	30	\$900
Turfing	5.20	1000	\$5,200
Grass seeding (lump sum)	1000.00	1	\$1,000
Park sign	1500.00	1	\$1,500
<b>Total embellishments</b>			<b>\$14,130</b>
<b>TOTAL COST P2.1</b>			<b>\$44,880</b>
<b>P2.2 Corridor link - Main ped. network - LR area</b>			
<b>Land preparation</b>	<b>price (\$)</b>	<b>qty</b>	<b>cost</b>
Land prep and site clearing (m2)	2.00	13000	\$26,000
Electricity connection	4,000.00	1	\$4,000
Water connection	2,750.00	1	\$2,750
Fencing and bollards (lm)	35.00	200	\$7,000
Lock rail	500.00	1	\$500
<b>Total land preparation</b>			<b>\$40,250</b>
<b>Park embellishments</b>	<b>price (\$)</b>	<b>qty</b>	<b>cost</b>
aluminium seats	1000.00	1	\$1,000
Enclosed rubbish bin	1650.00	1	\$1,650
Drinking fountain	880.00	1	\$880
Small trees	30.00	30	\$900
Grass seeding (lump sum)	1000.00	1	\$1,000
Park sign	1500.00	1	\$1,500
<b>Total embellishments</b>			<b>\$6,930</b>
<b>TOTAL COST P2.2</b>			<b>\$47,180</b>
<b>P2.3 District Informal recreation node along waterway - LMR and LR areas</b>			
<b>Land preparation</b>	<b>price (\$)</b>	<b>qty</b>	<b>cost</b>
Land prep and site clearing (m2)	2.00	17000	\$34,000
Electricity connection	4,000.00	1	\$4,000
Water connection	2,750.00	1	\$2,750
Fencing and bollards (lm)	35.00	200	\$7,000
Lock rail	500.00	1	\$500
<b>Total land preparation</b>			<b>\$48,250</b>
<b>Park embellishments</b>	<b>price (\$)</b>	<b>qty</b>	<b>cost</b>
aluminium seats	1000.00	3	\$3,000
Enclosed rubbish bin	1650.00	1	\$1,650
Drinking fountain	880.00	1	\$880
Medium play facility	30000.00	1	\$30,000
Dog off-leash area	25000.00	1	\$25,000
Small trees	30.00	30	\$900
Turfing	5.20	2500	\$13,000
Grass seeding (lump sum)	1000.00	1	\$1,000
Park sign	1500.00	1	\$1,500
<b>Total embellishments</b>			<b>\$76,930</b>
<b>TOTAL COST P2.3</b>			<b>\$125,180</b>



<b>P2.4 Informal recreation node - LMR and LR areas</b>			
<b>Land preparation</b>	<b>price (\$)</b>	<b>qty</b>	<b>cost</b>
Land prep and site clearing (m2)	2.00	7000	\$14,000
Electricity connection	4,000.00	1	\$4,000
Water connection	2,750.00	1	\$2,750
Fencing and bollards (lm)	35.00	200	\$7,000
Lock rail	500.00	1	\$500
<b>Total land preparation</b>			<b>\$28,250</b>
<b>Park embellishments</b>	<b>price (\$)</b>	<b>qty</b>	<b>cost</b>
aluminium seats	1000.00	3	\$3,000
shelters with tables	12000.00	1	\$12,000
Double electric barbecue	10000.00	1	\$10,000
Enclosed rubbish bin	1650.00	1	\$1,650
Drinking fountain	880.00	1	\$880
Small play facility	20000.00	1	\$20,000
Small trees	30.00	30	\$900
Turfing	5.20	2500	\$13,000
Grass seeding (lump sum)	1000.00	1	\$1,000
Park sign	1500.00	1	\$1,500
<b>Total embellishments</b>			<b>\$63,930</b>
<b>TOTAL COST P2.4</b>			<b>\$92,180</b>

Total number of parks P

4

## Appendix B13 Parks Embellishments Detailed Costings

### PROPOSED LOCAL PARKS IN UNDERWOOD ROAD NEIGHBOURHOOD

<b>U2.1 - Informal recreation node along waterway</b>			
<b>Land preparation</b>	<b>price (\$)</b>	<b>qty</b>	<b>cost</b>
Land prep and site clearing (m2)	2.00	7000	\$14,000
Electricity connection	4,000.00	1	\$4,000
Water connection	2,750.00	1	\$2,750
Bollards (lm)	35.00	200	\$7,000
Lock rail	500.00	1	\$500
<b>Total land preparation</b>			<b>\$28,250</b>
<b>Park embellishments</b>	<b>price (\$)</b>	<b>qty</b>	<b>cost</b>
aluminium seats	1000.00	3	\$3,000
shelters with tables	12000.00	1	\$12,000
Drinking fountain	880.00	1	\$880
Double electric barbecue	10000.00	1	\$10,000
Enclosed rubbish bin	1650.00	1	\$1,650
Small play facility (toddlers)	20000.00	1	\$20,000
Turfing	5.20	2500	\$13,000
Grass seeding (lump sum)	1000.00	1	\$1,000
Advanced trees	275.00	10	\$2,750
Small trees	30.00	30	\$900
Park sign	1500.00	1	\$1,500
<b>Total embellishments</b>			<b>\$66,680</b>
<b>TOTAL COST U2.1</b>			<b>\$94,930</b>

<b>U2.2 - Main informal recreation node along waterway</b>			
<b>Land preparation</b>	<b>price (\$)</b>	<b>qty</b>	<b>cost</b>
Land prep and site clearing (m2)	2.00	17000	\$34,000
Electricity connection	4,000.00	1	\$4,000
Water connection	2,750.00	1	\$2,750
Bollards (lm)	35.00	100	\$3,500
Lock rail	500.00	1	\$500
<b>Total land preparation</b>			<b>\$44,750</b>
<b>Park embellishments</b>	<b>price (\$)</b>	<b>qty</b>	<b>cost</b>
aluminium seats	1000.00	3	\$3,000
shelters with tables	12000.00	1	\$12,000
Drinking fountain	880.00	1	\$880
Double electric barbecue	10000.00	1	\$10,000
Lights	3500.00	6	\$21,000
Enclosed rubbish bin	1650.00	1	\$1,650
Large play facility	50000.00	1	\$50,000
Turfing	5.20	2500	\$13,000
Grass seeding (lump sum)	1000.00	1	\$1,000
Advanced trees	275.00	10	\$2,750
Small trees	30.00	30	\$900
Park sign	1500.00	1	\$1,500
<b>Total embellishments</b>			<b>\$117,680</b>
<b>TOTAL COST U2.2</b>			<b>\$162,430</b>

<b>U2.3 Corridor link/nature park - LR area</b>			
<b>Land preparation</b>	<b>price (\$)</b>	<b>qty</b>	<b>cost</b>
Land prep and site clearing (m2)	2.00	6000	\$12,000
Electricity connection	4,000.00	1	\$4,000
Water connection	2,750.00	1	\$2,750
Fencing and bollards (lm)	35.00	192	\$6,720
Lock rail	500.00	1	\$500
<b>Total land preparation</b>			<b>\$25,970</b>
<b>Park embellishments</b>	<b>price (\$)</b>	<b>qty</b>	<b>cost</b>
Timber bridge	25000.00	1	\$25,000
Pathway	65.00	100	\$6,500
Drinking fountain	880.00	1	\$880
Enclosed rubbish bin	1650.00	1	\$1,650
Small trees (reveg)	30.00	15	\$450
Park sign	1500.00	1	\$1,500
<b>Total embellishments</b>			<b>\$35,980</b>
<b>TOTAL COST U2.3</b>			<b>\$61,950</b>

Total Parks in Underwood Rd precinct

## Appendix B14 Parks Embellishments Detailed Costings

### PROPOSED DISTRICT SPORTS PARKS

DS1 Northern District Sports Park - Business Park and LR areas			
Demolition	price (\$)	qty	cost
Removal of Existing Custard Apple Trees - clearing with bulldozer, ball and chain, grub up roots, mulch or burn on site (medium vegetation - per ha)	\$2,500.00	3	\$7,500
Allowance for sundries (item)	\$2,500.00	1	\$2,500
<b>Subtotal demolition</b>			<b>\$10,000</b>
Site preparation	price (\$)	qty	cost
Site clearing (light vegetation, m2)	\$0.50	90000	\$45,000
Excavations and filling (sporting areas only - m2)	\$4.00	47250	\$189,000
Topsoil trim and grade (as above, m2)	\$5.00	47250	\$236,250
Decompaction (areas of cut only, m2)	\$10.00	19000	\$190,000
General park preparation (outside of sporting areas - m2)	\$2.00	52750	\$105,500
Allowance for sundries	\$2,500.00	1	\$2,500
<b>Subtotal site preparation</b>			<b>\$768,250</b>
Basic infrastructure works	price (\$)	qty	cost
Mains connections	\$15,000.00	1	\$15,000
Sewer	\$75,000.00	1	\$75,000
Stormwater collection and storage	\$75,000.00	1	\$75,000
Water mains and reticulation	\$50,000.00	1	\$50,000
Electrical mains and reticulation	\$100,000.00	1	\$100,000
Other external services	\$50,000.00	1	\$50,000
Allowance for sundries	\$3,000.00	1	\$3,000
<b>Subtotal site preparation</b>			<b>\$368,000</b>
Roadworks and pathways	price (\$)	qty	cost
New car park with tree planting (1 tree for every six spaces), line marking, kerb or drainage channel (m2)	\$75.00	3065	\$229,875
Entry feature/sign to car park	\$5,000.00	1	\$5,000
Main Circuit - 2.5m wide Bikeway/walkway (in addition to main spine - by Traffic and Transport - lm)	\$150.00	890	\$133,500
Lights along main paths (15.0 m spacing - in addition to main spine, by Traffic and Transport)	\$3,000.00	20	\$60,000
1.5m wide pedestrian walkway (lm)	\$90.00	900	\$81,000
Allowance for directional and interpretative signage	\$50,000.00	1	\$50,000
Allowance for sundries	\$3,000.00	1	\$3,000
<b>Subtotal roadworks and pathways</b>			<b>\$562,375</b>
Sporting facilities	price (\$)	qty	cost
Toilet block and change rooms	\$170,000.00	1	\$170,000
Netball courts (hard surface)	\$35,000.00	6	\$210,000
Basket ball courts	\$30,000.00	4	\$120,000
Beach volleyball courts	\$7,500.00	4	\$30,000
Tennis courts	\$30,000.00	8	\$240,000
Lighting of fields (lump sum)	\$300,000.00	1	\$300,000
Goal posts	\$5,000.00	4	\$20,000
Allowance for sundries	\$3,000.00	1	\$3,000
<b>Subtotal sporting facilities</b>			<b>\$1,093,000</b>
Informal recreation facilities	price (\$)	qty	cost
District playground	\$550,000.00	1	\$550,000
Fitness circuit	\$15,000.00	1	\$15,000
Dog off-leash area	\$25,000.00	1	\$25,000
shelters with tables	\$12,000.00	8	\$96,000
Double electric barbecue	\$10,000.00	5	\$50,000
Enclosed rubbish bin	\$1,650.00	6	\$9,900
Drinking fountain	\$880.00	5	\$4,400
Bench Seat	\$500.00	4	\$2,000
Picnic Tables	\$2,000.00	6	\$12,000
Allowance for sundries and furniture not shown	\$5,000.00	1	\$5,000
<b>Subtotal informal recreation facilities</b>			<b>\$769,300</b>
Landscaping	price (\$)	qty	cost
Fencing and bollards - south boundary only (lm)	\$35.00	135	\$4,725
Lock rail	\$500.00	2	\$1,000
Turfing to sportsfields - incl. 100mm topsoil, spread, levelled, A grade couch (m2)	\$12.50	27900	\$348,750
Grass seeding to areas outside of sportsfields - incl. 50mm topsoil, spread, levelled, couch seeding (m2)	\$5.50	42000	\$231,000
pop-up irrigation to turf (sports fields only - m2)	\$11.00	27900	\$306,900
Amenity Planting Areas - incl. 300mm topsoil, 100mm mulch, 1 x 200mm plant & 2 x 140mm plants	\$50.00	1000	\$50,000
Advanced trees	\$275.00	100	\$27,500
Semi Advanced trees	\$150.00	100	\$15,000
Small trees (reveg)	\$30.00	500	\$15,000
<b>Subtotal landscaping</b>			<b>\$999,875</b>
<b>TOTAL COST DS1</b>			<b>\$4,570,800</b>

Note: figures include site preparation and embellishments for both Public Recreation Land and Land for Other Community Purposes

<b>DS2 Southern District Sports Park - LR and Community Use (school) areas</b>			
<b>Demolition</b>	<b>price (\$)</b>	<b>qty</b>	<b>cost</b>
Removal of existing orchard - clearing with bulldozer, ball and chain, grub up roots, mulch or burn on site (medium vegetation - per ha)	\$2,500.00	3.08	\$7,700
Removal of part of existing vegetation- clearing with bulldozer, ball and chain, grub up roots, burn on site (medium vegetation - per ha)	\$2,500.00	1.7	\$4,250
allowance for sundries	\$2,500.00	1	\$2,500
<b>Subtotal demolition</b>			<b>\$14,450</b>
<b>Site preparation</b>	<b>price (\$)</b>	<b>qty</b>	<b>cost</b>
Site clearing (m2)	\$0.50	125000	\$62,500
Excavations and filling (sporting areas only - m2)	\$4.00	65000	\$260,000
Topsoil trim and grade (as above, m2)	\$5.00	65000	\$325,000
Decompaction (areas of cut only, m2)	\$10.00	35000	\$350,000
General park preparation (outside of sporting areas - m2)	\$2.00	75000	\$150,000
allowance for sundries	\$2,500.00	1	\$2,500
<b>Subtotal site preparation</b>			<b>\$1,150,000</b>
<b>Basic infrastructure works</b>	<b>price (\$)</b>	<b>qty</b>	<b>cost</b>
Mains connections	\$15,000.00	1	\$15,000
Sewer	\$75,000.00	1	\$75,000
Stormwater collection and storage	\$75,000.00	1	\$75,000
Water mains and reticulation	\$50,000.00	1	\$50,000
Electrical mains and reticulation	\$100,000.00	1	\$100,000
Other external services	\$50,000.00	1	\$50,000
allowance for sundries	\$3,000.00	1	\$3,000
<b>Subtotal site preparation</b>			<b>\$368,000</b>
<b>Roadworks and pathways</b>	<b>price (\$)</b>	<b>qty</b>	<b>cost</b>
New car park with tree planting (1 tree for every six spaces), line marking, kerb or drainage channel (m2)	\$75.00	7500	\$562,500
Entry feature/sign to car park	\$5,000.00	1	\$5,000
Bikeway/walkway circuit (2.5m wide, in addition to main spine - by Traffic and Transport - lm)	\$150.00	1314	\$197,100
Lights along main paths (15.0 m spacing - in addition to main spine, by Traffic and Transport)	\$3,000.00	1	\$3,000
1.5m wide pedestrian walkway (lm)	\$90.00	525	\$47,250
Allowance for directional and interpretative signage	\$50,000.00	1	\$50,000
allowance for sundries	\$3,000.00	1	\$3,000
<b>Subtotal roadworks and pathways</b>			<b>\$867,850</b>
<b>Sporting facilities</b>	<b>price (\$)</b>	<b>qty</b>	<b>cost</b>
Toilet block and change rooms	\$170,000.00	1	\$170,000
Hard Surface for Modular Skate Park in Youth Space	\$35,000.00	1	\$35,000
Basket ball courts	\$30,000.00	1	\$30,000
Bocce / or Croquet (elderly users)	\$15,000.00	1	\$15,000
Lighting of fields (lump sum)	\$300,000.00	1	\$300,000
Goal posts	\$5,000.00	8	\$40,000
allowance for sundries	\$3,000.00	1	\$3,000
<b>Subtotal sporting facilities</b>			<b>\$593,000</b>
<b>Informal recreation facilities</b>	<b>price (\$)</b>	<b>qty</b>	<b>cost</b>
District playground	\$550,000.00	1	\$550,000
Fitness circuit	\$15,000.00	1	\$15,000
Dog off-leash area	\$25,000.00	1	\$25,000
shelters with tables	\$12,000.00	8	\$96,000
Double electric barbecue	\$10,000.00	3	\$30,000
Enclosed rubbish bin	\$1,650.00	6	\$9,900
Drinking fountain	\$880.00	5	\$4,400
Bench Seat	\$500.00	14	\$7,000
Picnic Tables	\$2,000.00	5	\$10,000
allowance for sundries and furniture not shown	\$5,000.00	1	\$5,000
<b>Subtotal informal recreation facilities</b>			<b>\$752,300</b>
<b>Landscaping</b>	<b>price (\$)</b>	<b>qty</b>	<b>cost</b>
Fencing and bollards - south and west boundaries (lm)	\$35.00	1040	\$36,400
Lock rail	\$500.00	2	\$1,000
Turfing to sportsfields - incl. 100mm topsoil, spread, levelled, A grade couch (m2)	\$12.50	75000	\$937,500
Grass seeding to areas outside of sportsfields - incl. 50mm topsoil, spread, levelled, couch seeding (m2)	\$5.50	36000	\$198,000
Pop-up irrigation to turf (sports fields only - m2)	\$11.00	75000	\$825,000
Amenity Planting Areas - incl. 300mm topsoil, 100mm mulch, 1 x 200mm plant & 2 x 140mm plants	\$50.00	1000	\$50,000
Advanced trees	\$275.00	100	\$27,500
Semi Advanced trees	\$150.00	100	\$15,000
Small trees (reveg)	\$30.00	500	\$15,000
	\$10.00	10000	\$100,000
Revegetation & Buffer areas - includes cultivation, 100mm topsoil, tubestock (1/sqm), bamboo marker stakes, jute			
<b>Subtotal landscaping</b>			<b>\$2,205,400</b>
<b>TOTAL COST DS2</b>			<b>\$5,951,000</b>

Note: figures include site preparation and embellishments for both Public Recreation Land and Land for Other Community Purposes

## Appendix C1 Waterway Infrastructure

Table C.1.1a Conversion Rates

Local Plan Land Use Type	Equivalent Impervious Area (%)	Equivalent Hectares (EHs)
Very low density residential	0.74	0.025
Low density residential	0.8	1
Low-medium density residential	0.86	1.075
Mixed use in Town Centre	0.86	1.075
Mixed use not in Town Centre	0.9	1.125
Town Centre	0.88	1.1
Neighbourhood Centre	0.88	1.1
Business Centre	0.88	1.1
Business Park	0.82	1.025
Gateway Civic	0.88	1.1
State Service Centre	0.88	1.1
Community Use	0.88	1.1

ICU value  
51.42

### All Charge Areas

Table C.1.2a Forecast development as Waterways EHs - All Charge Areas

Existing situation*	Very low density res.	Low density res.	Low-medium density res.	Mixed use in Town Centre	Mixed use not in Town Centre	Town Centre	Neighbourhood Centre	Business Centre	Business Park	Gateway Civic	State Service Centre	Community Use	Total
NPV 2021 (Ultimate) situation	20.63	185.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	364.57

\*For the purposes of the waterway infrastructure charges, the number of existing EHs has been assumed to be zero

Table C.1.3a Annual Development as Waterways EHs - All Charge Areas

Stage No.	Very low density res.	Low density res.	Low-medium density res.	Mixed use in Town Centre	Mixed use not in Town Centre	Town Centre	Neighbourhood Centre	Business Centre	Business Park	Gateway Civic	State Service Centre	Community Use	Total
Stage 0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stage 1	0.02	132.32	31.83	0.00	0.65	0.00	1.32	0.76	49.88	0.01	0.00	0.00	216.77
Stage 2	32.85	31.78	45.32	12.38	0.00	5.72	0.88	0.00	41.31	8.70	0.00	22.21	221.21
Stage 3	0.00	49.30	15.24	0.00	4.96	0.00	0.00	0.00	5.64	0.00	2.68	15.46	93.28
Total	32.87	263.41	92.40	12.38	5.61	5.72	2.30	0.76	61.19	14.35	2.68	37.67	531.23
NPV*	20.63	185.53	62.31	7.77	2.87	3.59	1.72	0.64	48.97	8.11	1.26	21.19	364.57

\*Discount rate is 6%

Table C.1.4a Waterways Infrastructure Cost (excluding Piped Drainage) - All Charge Areas

Item Identification	Item Description	Construction Cost (2006-07\$)	Stage	Assumed Discounting Year	NPV (2006-07\$)	NPV ICUs
C101	Culvert under motorway	566,557	1	2009	804,512	566,558
R-4a	Core Waterway Corridor - Total Planting	5,028,059	1	2009	4,221,656	2,972,997
R-4d	Core Waterway Corridor - Total Planting	1,598,723	1	2009	1,342,318	945,295
R-4e	Core Waterway Corridor - Supplementary Planting	2,811,300	1	2009	2,360,422	1,662,268
R-4f	Core Waterway Corridor - Total Planting	1,940,941	1	2009	1,629,652	1,147,642
C-1a	Upgrade crossing for stream mgmt and flows	1,180,448	1	2009	991,043	697,917
C-4b	Upgrade crossing for stream mgmt and flows	5,371,642	1	2009	4,510,134	3,176,151
C-4c	Upgrade crossing for stream mgmt and flows	533,592	1	2009	448,014	315,503
C201	Culvert under motorway	1,660,163	2	2014	1,041,607	733,526
S-1a	Boretention swale	225,669	1	2009	189,476	133,434
S-1b	Boretention swale	236,813	1	2009	198,833	140,023
S-1c	Boretention swale	164,376	1	2009	138,014	97,193
C-1c	Upgrade crossing for stream mgmt and flows	1,489,580	1	2009	1,250,680	880,761
C-1h	Upgrade crossing for stream mgmt and flows	1,072,314	1	2009	900,890	634,429
S2-a	Boretention swale	158,804	2	2014	99,636	70,166
WA1	Waterways acquisition (Waterway Corridor Public: Stage 0)	285,750	1	2009	239,922	168,959
WA2	Waterways acquisition (Waterway Corridor Public + Fringe Public)	8,844,733	1	2009	7,426,209	5,229,234
WA3	Waterways acquisition (Waterway Corridor Public: Stage 0)	8,329,904	1	2009	6,993,948	4,925,315
WA4	Waterways acquisition (Fringe Public)	12,307	1	2009	10,333	7,277
R-1c	Core Waterway Corridor - Supplementary Planting	173,312	1	2009	149,288	107,244
R-4b	Core Waterway Corridor - Supplementary Planting	1,214,621	1	2009	1,019,819	718,182
R-4c	Core Waterway Corridor - Total Planting	4,600,503	1	2009	3,781,251	2,662,374
C-1b	Upgrade crossing for stream mgmt and flows	875,594	1	2009	735,165	517,722
WA5	Waterways acquisition (Waterway Corridor Public: Stage 0)	1,468,427	1	2009	1,203,256	868,490
WA6	Waterways acquisition (Waterway Corridor Public: Stage 1)	5,724,818	1	2009	4,814,896	3,390,172
R-1e	Core Waterway Corridor - Supplementary Planting	1,117,574	1	2009	938,336	660,800
R-2a	Core Waterway Corridor - Supplementary Planting	2,768,295	1	2009	2,324,398	1,636,950
S-1d	Boretention swale	292,534	1	2009	245,617	172,570
S-1e	Boretention swale	128,158	1	2009	107,604	75,777
C-2b	Upgrade crossing for stream mgmt and flows	2,293,628	2	2014	1,439,050	1,013,416
C-2c	Upgrade crossing for stream mgmt and flows	4,141,703	2	2014	2,598,556	1,829,989
C-2d	Upgrade crossing for stream mgmt and flows	2,311,542	2	2014	1,460,290	1,021,231
S-2b	Boretention swale	289,748	2	2014	181,792	128,022
S-2c	Boretention swale	203,381	2	2014	127,604	89,862
S-2d	Boretention swale	97,511	2	2014	61,180	42,864
WA7	Waterways acquisition (Waterway Corridor Public: Stage 1)	5,785,729	1	2009	4,857,810	3,420,993
WA8	Waterways acquisition (Waterway Corridor Public: Stage 2)	6,399,391	2	2014	4,012,798	2,825,914
C-3a	Upgrade crossing for stream mgmt and flows	2,158,072	3	2019	1,011,769	712,257
C601	Culvert under motorway (Item) (2006\$)	1,341,127	3	2019	628,773	442,798
C602	Culvert under motorway (Item) (2006\$)	519,105	3	2019	243,377	171,262
WA9	Waterways acquisition (Waterway Corridor Private: Stage 3)	2,341,880	3	2019	1,027,965	733,215
<b>Total Cost</b>		<b>84,607,218</b>			<b>64,564,908</b>	<b>45,742,893</b>

Table C.1.5a Cost Apportionment - Waterways Infrastructure (excluding Piped Drainage) - All Charge Areas

Item Identification	Item Description	NPV ICUs	External Use		Existing Use		Future use		Change	
			% total use	Apportioned cost	% total use	Apportioned cost	% total use	Apportioned cost	NPV future demand (EHs)	Change (ICUs/EH)
C101	Culvert under motorway	566,557	0%	-	0%	0	100%	566,558	364.6	1,554
R-4a	Core Waterway Corridor - Total Planting	2,972,996.84	0%	-	0%	0	100%	2,972,997	364.6	8,155
R-4d	Core Waterway Corridor - Total Planting	945,294.61	0%	-	0%	0	100%	945,295	364.6	2,593
R-4e	Core Waterway Corridor - Supplementary Planting	1,662,268.85	0%	-	0%	0	100%	1,662,269	364.6	4,950
R-4f	Core Waterway Corridor - Total Planting	1,147,642.01	0%	-	0%	0	100%	1,147,642	364.6	3,148
C-1a	Upgrade crossing for stream mgmt and flows	697,917.26	0%	-	0%	0	100%	697,917	364.6	1,914
C-4b	Upgrade crossing for stream mgmt and flows	3,176,150.58	0%	-	0%	0	100%	3,176,151	364.6	8,712
C-4c	Upgrade crossing for stream mgmt and flows	315,503.09	0%	-	0%	0	100%	315,503	364.6	865
C201	Culvert under motorway	733,526.05	0%	-	0%	0	100%	733,526	364.6	2,012
S-1a	Boretention swale	133,433.98	0%	-	0%	0	100%	133,434	364.6	366
S-1b	Boretention swale	140,023.31	0%	-	0%	0	100%	140,023	364.6	384
S-1c	Boretention swale	97,192.85	0%	-	0%	0	100%	97,193	364.6	267
C-1c	Upgrade crossing for stream mgmt and flows	880,760.63	0%	-	0%	0	100%	880,761	364.6	2,416
C-1h	Upgrade crossing for stream mgmt and flows	634,429.25	0%	-	0%	0	100%	634,429	364.6	1,740
S2-a	Boretention swale	70,166.04	0%	-	0%	0	100%	70,166	364.6	192
WA1	Waterways acquisition (Waterway Corridor Public: Stage 0)	168,959.84	0%	-	0%	0	100%	168,959	364.6	463
WA2	Waterways acquisition (Waterway Corridor Public + Fringe Public)	5,229,234.31	0%	-	0%	0	100%	5,229,234	364.6	14,345
WA3	Waterways acquisition (Waterway Corridor Public: Stage 0)	4,925,315.49	0%	-	0%	0	100%	4,925,315	364.6	13,510
WA4	Waterways acquisition (Fringe Public)	7,277.02	0%	-	0%	0	100%	7,277	364.6	20
R-1c	Core Waterway Corridor - Supplementary Planting	457,244.74	0%	-	0%	0	100%	457,245	364.6	1,254
R-4b	Core Waterway Corridor - Supplementary Planting	718,182.29	0%	-	0%	0	100%	718,182	364.6	1,970
R-4c	Core Waterway Corridor - Total Planting	266,373.75	0%	-	0%	0	100%	266,374	364.6	731
C-1b	Upgrade crossing for stream mgmt and flows	517,722.17	0%	-	0%	0	100%	517,722	364.6	1,420
WA5	Waterways acquisition (Waterway Corridor Public: Stage 0)	868,499.86	0%	-	0%	0	100%	868,499	364.6	2,382
WA6	Waterways acquisition (Waterway Corridor Public: Stage 1)	3,390,771.61	0%	-	0%	0	100%	3,390,772	364.6	9,301
R-1e	Core Waterway Corridor - Supplementary Planting	660,800.19	0%	-	0%	0	100%	660,800	364.6	1,813
R-2a	Core Waterway Corridor - Supplementary Planting	1,636,959.92	0%	-	0%	0	100%	1,636,960	364.6	4,490
S-1d	Boretention swale	172,869.97	0%	-	0%	0	100%	172,870	364.6	474
S-1e	Boretention swale	75,777.32	0%	-	0%	0	100%	75,777	364.6	208
C-2b	Upgrade crossing for stream mgmt and flows	1,013,416.37	0%	-	0%	0	100%	1,013,416	364.6	2,780
C-2c	Upgrade crossing for stream mgmt and flows	1,829,968.84	0%	-	0%	0	100%	1,829,969	364.6	5,020
C-2d	Upgrade crossing for stream mgmt and flows	1,021,330.62	0%	-	0%	0	100%	1,021,331	364.6	2,801
S-2b	Boretention swale	128,022.24	0%	-	0%	0	100%	128,022	364.6	351
S-2c	Boretention swale	89,861.76	0%	-	0%	0	100%	89,862	364.6	246
S-2d	Boretention swale	43,084.41	0%	-	0%	0	100%	43,084	364.6	119
WA7	Waterways acquisition (Waterway Corridor Public: Stage 1)	3,420,992.77	0%	-	0%	0	100%	3,420,993	364.6	9,384
WA8	Waterways acquisition (Waterway Corridor Public: Stage 2)	2,825,914.19	0%	-	0%	0	100%	2,825,914	364.6	7,751
C-3a	Upgrade crossing for stream mgmt and flows	712,527.12	30%	213,758	0%	0	70%	498,769	364.6	1,365
C601	Culvert under motorway (Item) (2006\$)	442,797.57	30%	132,839	0%	0	70%	309,958	364.6	850
C602	Culvert under motorway (Item) (2006\$)	171,362.18	30%	51,418	0%	0	70%	119,945	364.6	329
WA9	Waterways acquisition (Waterway Corridor Private: Stage 3)	773,214.68	30%	231,964	0%	0	70%	541,250	364.6	1,485
<b>Total Cost</b>		<b>45,742,893</b>						<b>45,112,913</b>		<b>123,743</b>

Table C.1.6a Infrastructure Charges - Waterways (excluding Piped Drainage) - All Charge Areas

Type of development	Charge ICU/ha
Very low density residential	114,462
Low density residential	123,743
Low-medium density residential	123,743
Mixed use in Town Centre	133,024
Mixed use not in Town Centre	133,024
Town Centre	139,211
Neighbourhood Centre	136,117
Business Centre	136,117
Business Park	126,830
Gateway Civic	136,117
State Service Centre	136,117
Community Use	136,117

Note: the above charge excludes the additional charge payable for piped drainage/ drainage easement in the Charge Areas/ Catchments

## Piped Drainage

### Charge Area 1 (Catchment 1)

Table C.1-1 Forecast development as Waterways EHS - Charge Area 1 (Catchment 1)

Existing situation*	Very low density res.		Low density res.		Low-medium density res.		Mixed use in Town Centre		Mixed use not in Town Centre		Neighbourhood Centre			Business Centre		Business Park		Gateway Civic		State Service Centre		Community Use		Total	
	res.	res.	res.	res.	res.	res.	res.	res.	res.	res.	res.	res.	res.	res.	res.	res.	res.	res.	res.	res.	res.	res.	res.		
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NPV 2021 (Ultimate) situation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	4.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.17

\*For the purposes of the waterway infrastructure charges, the number of existing EHS has been assumed to be zero

Table C.1-2 Annual Development as Waterways EHS - Charge Area 1 (Catchment 1)

Stage No.	Very low density res.		Low density res.		Low-medium density res.		Mixed use in Town Centre		Mixed use not in Town Centre		Neighbourhood Centre			Business Centre		Business Park		Gateway Civic		State Service Centre		Community Use		Total	
	res.	res.	res.	res.	res.	res.	res.	res.	res.	res.	res.	res.	res.	res.	res.	res.	res.	res.	res.	res.	res.	res.	res.		
Stage 0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.15	4.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.97
Stage 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stage 2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stage 3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.15	4.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.97
NPV **	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	4.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.17

\*\*Discount rate is 6%

Table C.1-3 Piped Drainage/Drainage Easement Cost - Charge Area 1 (Catchment 1)

Item Identification	Item Description		Construction Cost (2006-07\$)	Stage	Assumed Discounting Year	NPV (2006-07\$)	NPV ICUs
	Node	Node					
D001	1/1001	to 2/1001	31,443	1	2009	26,400	18,592
D002	2/1001	to 3/1001	157,054	1	2009	131,866	92,863
D003	3/1001	to 4/1001	11,046	1	2009	9,275	6,531
D004	4/1001SQID		108,872	1	2009	91,411	64,374
D005	1/1005	to 2/1005	27,600	1	2009	23,174	16,319
D006	1/1006	to 2/1006	18,811	1	2009	14,115	9,940
D007	2/1006	to 3/1006	231,773	1	2009	194,608	137,046
D008	1/1008	to 2/1008	12,129	1	2009	10,184	7,171
D009	2/1008SQID		207,534	1	2009	174,250	122,711
D010	1/1004	to 2/1007	99,630	1	2009	83,652	58,910
D011	1/1007	to 2/1007	55,322	1	2009	46,449	32,711
D012	2/1007	to 3/1007	146,029	1	2009	122,609	86,344
D013	3/1007SQID		129,475	1	2009	108,710	76,556
3/1006 (Drainage Easement)			40,440	1	2009	33,821	23,988
2/1007 (Drainage Easement)			46,000	1	2009	38,622	27,199
			1,321,125			1,109,242	

Table C.1-4 Cost Apportionment: Piped Drainage/Drainage Easement - Charge Area 1 (Catchment 1)

Item Identification	Item Description		NPV ICUs	External Use		Existing Use		Future use		NPV future demand (EHS)	Charge (ICUs/EHS)
	Node	Node		% total use	Apportioned cost	% total use	Apportioned cost	% total use	Apportioned cost		
D001	1/1001	to 2/1001	18,592	0%	0	0%	0	100%	18,592	4.17	4,458
D002	2/1001	to 3/1001	92,863	0%	0	0%	0	100%	92,863	4.17	22,268
D003	3/1001	to 4/1001	6,531	0%	0	0%	0	100%	6,531	4.17	1,566
D004	4/1001SQID		64,374	0%	0	0%	0	100%	64,374	4.17	15,437
D005	1/1005	to 2/1005	16,319	0%	0	0%	0	100%	16,319	4.17	3,913
D006	1/1006	to 2/1006	9,940	0%	0	0%	0	100%	9,940	4.17	2,384
D007	2/1006	to 3/1006	137,046	0%	0	0%	0	100%	137,046	4.17	32,865
D008	1/1008	to 2/1008	7,171	0%	0	0%	0	100%	7,171	4.17	1,720
D009	2/1008SQID		122,711	0%	0	0%	0	100%	122,711	4.17	29,427
D010	1/1004	to 2/1007	58,910	0%	0	0%	0	100%	58,910	4.17	14,127
D011	1/1007	to 2/1007	32,711	0%	0	0%	0	100%	32,711	4.17	7,844
D012	2/1007	to 3/1007	86,344	0%	0	0%	0	100%	86,344	4.17	20,706
D013	3/1007SQID		76,556	0%	0	0%	0	100%	76,556	4.17	18,359
3/1006 (Drainage Easement)			23,988	0%	0	0%	0	100%	23,988	4.17	5,728
2/1007 (Drainage Easement)			27,199	0%	0	0%	0	100%	27,199	4.17	6,522
								781,156	TOTAL		187,327

Table C.1-5 Infrastructure Charges Rates: Piped Drainage/Drainage Easement - Charge Area 1 (Catchment 1)

Type of development	Charge ICUs/ha
Very low density residential	177,644
Low density residential	192,049
Low-medium density residential	192,049
Mixed use in Town Centre	206,453
Mixed use not in Town Centre	206,453
Town Centre	216,056
Neighbourhood Centre	211,254
Business Centre	211,254
Business Park	195,850
Gateway Civic	211,254
State Service Centre	211,254
Community Use	211,254

Note the above charge includes the additional charge payable for the Overall Charge Area for piped drainage/ drainage easement (refer to Table C.6-6)

### Charge Area 2 (Catchment 2 & 3)

Table C.2-1: Forecast development as Waterways EHS - Charge Area 2 (Catchment 2 & 3)

Existing situation*	Very low density res.		Low density res.		Low-medium density res.		Mixed use in Town Centre		Mixed use not in Town Centre		Neighbourhood Centre			Business Centre		Business Park		Gateway Civic		State Service Centre		Community Use		Total
	res.	res.	res.	res.	res.	res.	res.	res.	res.	res.	res.	res.	res.	res.	res.	res.	res.	res.	res.	res.	res.	res.		
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NPV 2021 (Ultimate) situation	20.63	73.77	17.73	17.73	0.00	0.00	0.00	0.00	0.00	1.11	0.51	30.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.41	0.00	144.36

Table C.2-2 Annual Development as Waterways EHS - Charge Area 2 (Catchment 2 & 3)

Stage No.	Very low density res.		Low density res.		Low-medium density res.		Mixed use in Town Centre		Mixed use not in Town Centre		Neighbourhood Centre			Business Centre		Business Park		Gateway Civic		State Service Centre		Community Use		Total
	res.	res.	res.	res.	res.	res.	res.	res.	res.	res.	res.	res.	res.	res.	res.	res.	res.	res.	res.	res.	res.	res.	res.	
Stage 1	0.00	58.65	16.81	16.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	104.34
Stage 2	32.85	39.08	6.03	6.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	69.52
Stage 3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	32.85	97.74	22.84	22.84	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	173.86
NPV **	20.63	73.77	17.73	17.73	0.00	0.00	0.00	0.00	0.00	1.11	0.51	30.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.41	0.00	144.36

\*\*Discount rate is 6%

Table C.2-3 Cost of Apportioned Items: Piped Drainage - Charge Area 2 (Catchment 2 & 3)

Item Identification	Item Description		Construction Cost (2006-07\$)	Stage	Assumed Discounting Year	NPV (2006-07\$)	NPV ICUs
	Node	Node					
D014	1/2001	to 2/2001	13,958	1	2009	11,417	8,040
D015	2/2001	to 3/2001	32,447	1	2009	27,572	19,248
D016	3/2001	to 4/2001	180,181	1	2009	151,267	106,526
D017	4/2001	to 5/2001	30,047	1	2009	24,877	18,237
D018	5/2001	to 6/2001	111,505	1	2009	93,622	66,901
D019	6/2001	to 7/2001	57,258	1	2009	48,075	33,896
D020	7/2001	to 8/2001	130,044	1	2009	107,791	70,980
D021	1/2004	to 2/2004	11,830	1	2009	9,933	6,995
D022	2/2004	to 5/2001	39,148	1	2009	32,869	23,147
D023	5/2004SQID	shared with Line 2006	158,470	1	2009	133,055	93,702
D024	1/3001	to 2/3001	9,669	1	2009	8,118	5,717
D025	2/3001	to 3/3001	162,026	1	2009	136,040	96,803
D026	3/3001	to 4/3001	177,989	1	2009	148,410	105,218
D027	4/3001	to 5/3001	196,911	1	2009	165,330	116,430
D028	5/3001	to 6/3001	229,258	1	2009	192,489	135,556
D029	6/3001	to 7/3001	275,056	1	2009	230,942	162,636
D030	7/3001	to 8/3001	1,787,771	1	2009	1,501,0	





Table C-4.3 Cost of Apportioned Items - Piped Drainage - Charge Area 4 (Catchment 5)

Item Identification	Item Description		Construction Cost 2006 (\$)	Stage	Assumed Discounting Year	NPV 2006 (\$)	NPV ICUs
	Node	to Node					
D072	15001	to 25001	15,800	1	2009	13,266	9,342
D073	15006	to 19001	10,342	1	2009	8,663	6,115
D074	25001	to 35001	332,365	1	2009	279,060	196,521
D075	35001	to 45001	256,842	1	2009	214,810	151,275
D076	45001	to 55001	162,118	1	2009	90,778	63,328
D077	55001	to 65001	142,070	1	2009	119,285	84,003
D078	65001	to 75001	164,345	1	2009	137,887	97,174
D079	75001	to 85001	514,094	1	2009	431,643	303,974
D080	85001	to 95001	467,461	1	2009	382,480	276,491
D081	95001	to 105001	626,483	1	2009	526,007	370,428
D082	105001	to 115001	806,734	1	2009	677,349	477,007
D083	115001	to 125001	339,119	1	2009	284,730	200,014
D084	125001	shared with Line 5023	470,442	1	2009	394,592	278,163
D085	15020	to 25020	11,808	1	2009	9,914	6,982
D086	25020	to 35020	201,177	1	2009	168,912	118,952
D087	35020	to 45020	77,278	1	2009	64,884	46,592
D088	45020	shared with Line 5028	53,206	1	2009	44,528	31,911
D097	15007	to 25007	10,706	2	2014	6,717	4,730
D098	25007	to 35007	147,851	2	2014	92,625	65,229
D099	35007	to 45007	323,191	2	2014	202,774	142,758
D100	45007	to 55007	177,609	2	2014	111,434	78,475
D101	55007	to 65007	294,603	2	2014	184,838	130,167
D102	65007	to 75007	215,616	2	2014	130,280	95,267
D103	75007	to 85007	585,867	2	2014	367,580	268,859
D104	85007	to 95007	442,164	2	2014	277,419	195,366
D105	95007	to 105007	239,237	2	2014	150,130	105,704
D106	105007	to 115007	207,609	2	2014	130,276	91,743
D107	115007	to 125007	445,196	2	2014	279,321	196,705
D108	125007	to 135007	303,048	2	2014	221,507	155,991
D109	135007	to 145007	883,330	2	2014	616,563	434,474
D110	145007	to 155007	610,343	2	2014	382,937	269,674
D111	155007	to 165007	665,311	2	2014	417,425	293,961
D112	165007	to 175007	383,448	2	2014	238,032	169,596
D113	175007	to 185007	207,809	2	2014	130,668	91,598
D114	185007	to 195007	79,248	2	2014	49,721	35,015
D115	195007	shared with Line 5023	491,204	2	2014	251,720	177,268
D116	19022	to 25022	11,573	2	2014	7,261	5,113
D117	25022	to 35022	166,368	2	2014	104,381	73,508
D118	35022	to 45022	74,777	2	2014	46,916	33,040
D119	45022	shared with Line 5028	60,313	2	2014	36,390	26,486
D120	19023	to 25023	110,291	2	2014	69,141	49,691
D121	25023	to 35023	95,180	2	2014	59,717	42,055
D122	35023	to 45023	48,786	2	2014	30,609	21,556
D123	45023	shared with Line 5007	37,172	2	2014	23,322	16,404
D124	19024	to 25024	161,174	2	2014	101,499	71,478
D125	25024	to 35024	107,471	2	2014	67,429	47,485
D126	35024	shared with Line 5028	162,804	2	2014	102,145	71,933
D127	19026	to 25026	4,273	2	2014	2,681	1,888
D128	25026	to 35026	215,518	2	2014	135,218	95,224
D129	35026	to 45026	403,083	2	2014	252,899	178,098
D130	45026	to 55026	513,283	2	2014	322,028	228,786
D131	55026	to 65026	228,483	2	2014	143,341	100,944
D132	18001	to 35026	4,667	2	2014	2,928	2,062
D133	35026	shared with Line 5025	203,823	2	2014	127,881	90,007
D134	19028	to 25028	212,486	2	2014	133,216	93,885
D135	25028	to 35028	78,919	2	2014	49,514	34,869
D136	35028	shared with Line 5022	130,284	2	2014	81,742	57,565
D137	19039	to 25039	148,451	2	2014	90,399	21,407
D138	25039	to 35039	102,473	2	2014	63,028	44,393
			14,589,504			10,137,571	

Table C-4.4 Cost Apportionment: Piped Drainage - Charge Area 4 (Catchment 5)

Item Identification	Item Description		NPV ICUs	External Use		Existing Use		Future use		Charge	
	Node	to Node		% total use	Apportioned cost	% total use	Apportioned cost	% total use	Apportioned cost	NPV future demand (EHS)	Charge (ICUs/EH)
D072	15001	to 25001	9,342	0%	0	0%	0	100%	0	9,342	121.42
D073	15006	to 19001	6,115	0%	0	0%	0	100%	0	6,115	50
D074	25001	to 35001	196,521	0%	0	0%	0	100%	196,521	121.42	1,619
D075	35001	to 45001	151,275	0%	0	0%	0	100%	151,275	121.42	1,246
D076	45001	to 55001	63,328	0%	0	0%	0	100%	63,328	121.42	527
D077	55001	to 65001	84,003	0%	0	0%	0	100%	84,003	121.42	692
D078	65001	to 75001	97,174	0%	0	0%	0	100%	97,174	121.42	800
D079	75001	to 85001	303,974	0%	0	0%	0	100%	303,974	121.42	2,503
D080	85001	to 95001	276,491	0%	0	0%	0	100%	276,491	121.42	2,276
D081	95001	to 105001	370,428	0%	0	0%	0	100%	370,428	121.42	3,051
D082	105001	to 115001	477,007	0%	0	0%	0	100%	477,007	121.42	3,959
D083	115001	to 125001	200,014	0%	0	0%	0	100%	200,014	121.42	1,651
D084	125001	shared with Line 5023	278,163	0%	0	0%	0	100%	278,163	121.42	2,291
D085	15020	to 25020	6,982	0%	0	0%	0	100%	6,982	121.42	57
D086	25020	to 35020	118,952	0%	0	0%	0	100%	118,952	121.42	960
D087	35020	to 45020	46,993	0%	0	0%	0	100%	46,993	121.42	376
D088	45020	shared with Line 5028	55,111	0%	0	0%	0	100%	55,111	121.42	454
D097	15007	to 25007	4,730	0%	0	0%	0	100%	4,730	121.42	39
D098	25007	to 35007	65,229	0%	0	0%	0	100%	65,229	121.42	537
D099	35007	to 45007	142,758	0%	0	0%	0	100%	142,758	121.42	1,176
D100	45007	to 55007	78,475	0%	0	0%	0	100%	78,475	121.42	646
D101	55007	to 65007	130,167	0%	0	0%	0	100%	130,167	121.42	1,072
D102	65007	to 75007	95,267	0%	0	0%	0	100%	95,267	121.42	785
D103	75007	to 85007	268,859	0%	0	0%	0	100%	268,859	121.42	2,132
D104	85007	to 95007	195,366	0%	0	0%	0	100%	195,366	121.42	1,600
D105	95007	to 105007	105,704	0%	0	0%	0	100%	105,704	121.42	871
D106	105007	to 115007	91,743	0%	0	0%	0	100%	91,743	121.42	756
D107	115007	to 125007	196,705	0%	0	0%	0	100%	196,705	121.42	1,620
D108	125007	to 135007	155,991	0%	0	0%	0	100%	155,991	121.42	1,285
D109	135007	to 145007	434,474	0%	0	0%	0	100%	434,474	121.42	3,578
D110	145007	to 155007	269,674	0%	0	0%	0	100%	269,674	121.42	2,221
D111	155007	to 165007	293,961	0%	0	0%	0	100%	293,961	121.42	2,421
D112	165007	to 175007	160,596	0%	0	0%	0	100%	160,596	121.42	1,323
D113	175007	to 185007	91,598	0%	0	0%	0	100%	91,598	121.42	754
D114	185007	to 195007	35,015	0%	0	0%	0	100%	35,015	121.42	288
D115	195007	shared with Line 5023	177,268	0%	0	0%	0	100%	177,268	121.42	1,460
D116	19022	to 25022	5,113	0%	0	0%	0	100%	5,113	121.42	42
D117	25022	to 35022	73,508	0%	0	0%	0	100%	73,508	121.42	605
D118	35022	to 45022	33,040	0%	0	0%	0	100%	33,040	121.42	272
D119	45022	shared with Line 5028	36,486	0%	0	0%	0	100%	36,486	121.42	292
D120	19023	to 25023	49,691	0%	0	0%	0	100%	49,691	121.42	403
D121	25023	to 35023	42,055	0%	0	0%	0	100%	42,055	121.42	346
D122	35023	to 45023	21,556	0%	0	0%	0	100%	21,556	121.42	178
D123	45023	shared with Line 5007	16,404	0%	0	0%	0	100%	16,404	121.42	134
D124	19024	to 25024	71,478	0%	0	0%	0	100%	71,478	121.42	589
D125	25024	to 35024	47,485	0%	0	0%	0	100%	47,485	121.42	391
D126	35024	shared with Line 5028	71,933	0%	0	0%	0	100%	71,933	121.42	592
D127	19026	to 25026	1,888	0%	0	0%	0	100%	1,888	121.42	16
D128	25026	to 35026	95,224	0%	0	0%	0	100%	95,224	121.42	784
D129	35026	to 45026	178,098	0%	0	0%	0	100%	178,098	121.42	1,467
D130	45026	to 55026	228,786	0%	0	0%	0	100%	228,786	121.42	1,868
D131	55026	to 65026	100,944	0%	0	0%	0	100%	100,944	121.42	831
D132	18001	to 35026	2,062	0%	0	0%	0	100%	2,062	121.42	17
D133	35026	shared with Line 5025	90,007	0%	0	0%	0	100%	90,007	121.42	742
D134	19028	to 25028	93,885	0%	0	0%	0	100%	93,885	121.42	773
D135	25028	to 35028	34,869	0%	0	0%	0	100%	34,869	121.42	287
D136	35028	shared with Line 5022	57,565	0%	0	0%	0	100%	57,565	121.42	474
D137	19039	to 25039	21,407	0%	0	0%	0	100%	21,407	121.42	176
D138	25039	to 35039	44,393	0%	0	0%	0	100%	44,393	121.42	365
									7,139,135 TOTAL		58,797

Table C-4.5 Infrastructure Charges Rates: Piped Drainage - Charge Area 4 (Catchment 5)

Type of development	Charge ICUs/ha
Very low density residential	58,716
Low density residential	63,519
Low-medium density residential	63,519
Mixed use in Town Centre	68,283

Item Identification	Item Description		Construction Cost 2006 (\$)	Stage	Assumed Discounting Year	NPV 2006 (\$)	NPV ICUs
	Node to	Node					
D139	1/6026	to 2/6026	108,666	2	2014	68,178	48,013
D140	1/6026	to 2/6026					
D141	2/6026	to 3/6026	178,008	2	2014	110,429	77,767
D142	2/6026	to 3/6026					
D143	3/6026	to 4/6026	351,436	2	2014	220,495	155,279
D144	3/6026	to 4/6026					
D145	4/6026	to 5/6026	286,273	2	2014	179,611	126,487
D146	5/6026	to 6/6026	309,604	2	2014	194,250	136,796
D147	6/6026	to 7/6026	319,691	2	2014	200,578	141,252
D148	7/6026	to 8/6026	85,772	2	2014	53,815	37,898
D149	8/6026	to 9/6026	171,421	2	2014	107,852	75,741
D150	9/6026	to 10/6026	286,380	2	2014	185,637	133,744
D151	10/6026	to 11/6026	140,017	2	2014	87,848	61,866
D152	11/6026S/QID	to 12/6026	244,586	2	2014	153,707	108,245
D195	1/6002	to 2/6002	5,216	3	2019	2,446	1,722
D196	2/6002	to 3/6002	79,940	3	2019	36,072	25,403
D197	3/6002	to 4/6002	113,286	3	2019	53,534	37,397
D198	4/6002	to 5/6002	803,413	3	2019	376,671	265,261
D199	5/6002	to 6/6002	179,480	3	2019	83,678	58,928
D200	1/6007	to 2/6007	8,355	3	2019	3,917	2,759
D201	2/6007	to 3/6007	214,463	3	2019	100,549	70,809
D202	3/6007	to 4/6007	483,884	3	2019	226,864	159,763
D203	4/6007	to 5/6007	703,583	3	2019	329,867	232,301
D204	4/6002S/QID	to 5/6002	310,862	3	2019	146,744	102,637
D205	1/6012	to 2/6012	1,215	3	2019	5,867	4,132
D206	2/6012	to 3/6012	109,990	3	2019	51,568	36,315
D207	3/6012	to 4/6012	178,665	3	2019	82,623	58,326
D208	4/6012	to 5/6012	152,666	3	2019	71,576	50,406
D209	5/6012	to 6/6012	189,200	3	2019	88,704	62,468
D210	6/6012	to 7/6012	755,536	3	2019	354,398	249,576
D211	7/6012S/QID	to 8/6012	166,329	3	2019	77,982	54,917
D212	1/6019	to 2/6019	67,451	3	2019	31,624	22,270
D213	2/6019	to 3/6019	62,255	3	2019	29,187	20,555
D214	3/6019	to 4/6019	191,095	3	2019	89,503	63,094
D215	4/6019	to 5/6019	175,996	3	2019	83,779	59,719
D216	5/6019S/QID	to 6/6019	99,975	3	2019	46,872	33,009
D217	1/6025	to 2/6025	35,753	3	2019	16,762	11,804
D218	2/6025	to 3/6025	313,828	3	2019	147,135	103,616
D219	3/6025	to 4/6025	119,499	3	2019	56,026	39,456
D220	4/6025S/QID	shared with Line 5026	65,288	3	2019	37,642	26,500
11/6026 (Drainage Easement)			9,802	2	2014	6,149	4,330
						4,262,808	

Item Identification	Item Description		NPV ICUs	External Use		Existing Use		Future use		NPV Future demand (E/ha)	Charge (ICUs/E/ha)
	Node to	Node		% total use	Apportioned cost	% total use	Apportioned cost	% total use	Apportioned cost		
D139	1/6026	to 2/6026	48,013	0%	0	0%	0	100%	48,013	55.79	861
D140	1/6026	to 2/6026									
D141	2/6026	to 3/6026	77,767	0%	0	0%	0	100%	77,767	55.79	1,354
D142	2/6026	to 3/6026									
D143	3/6026	to 4/6026	155,279	0%	0	0%	0	100%	155,279	55.79	2,783
D144	3/6026	to 4/6026									
D145	4/6026	to 5/6026	126,487	0%	0	0%	0	100%	126,487	55.79	2,267
D146	5/6026	to 6/6026	136,796	0%	0	0%	0	100%	136,796	55.79	2,452
D147	6/6026	to 7/6026	141,252	0%	0	0%	0	100%	141,252	55.79	2,532
D148	7/6026	to 8/6026	37,898	0%	0	0%	0	100%	37,898	55.79	679
D149	8/6026	to 9/6026	75,741	0%	0	0%	0	100%	75,741	55.79	1,354
D150	9/6026	to 10/6026	109,744	0%	0	0%	0	100%	109,744	55.79	1,967
D151	10/6026	to 11/6026	61,866	0%	0	0%	0	100%	61,866	55.79	1,109
D152	11/6026S/QID	to 12/6026	108,245	0%	0	0%	0	100%	108,245	55.79	1,940
D195	1/6002	to 2/6002	1,722	0%	0	0%	0	100%	1,722	55.79	31
D196	2/6002	to 3/6002	25,403	0%	0	0%	0	100%	25,403	55.79	455
D197	3/6002	to 4/6002	37,397	0%	0	0%	0	100%	37,397	55.79	670
D198	4/6002	to 5/6002	265,261	0%	0	0%	0	100%	265,261	55.79	4,756
D199	5/6002	to 6/6002	58,928	0%	0	0%	0	100%	58,928	55.79	1,056
D200	1/6007	to 2/6007	2,759	0%	0	0%	0	100%	2,759	55.79	49
D201	2/6007	to 3/6007	70,809	0%	0	0%	0	100%	70,809	55.79	1,289
D202	3/6007	to 4/6007	159,763	0%	0	0%	0	100%	159,763	55.79	2,864
D203	4/6007	to 5/6007	232,301	0%	0	0%	0	100%	232,301	55.79	4,164
D204	4/6002S/QID	to 5/6002	102,637	0%	0	0%	0	100%	102,637	55.79	1,840
D205	1/6012	to 2/6012	4,132	0%	0	0%	0	100%	4,132	55.79	74
D206	2/6012	to 3/6012	36,315	0%	0	0%	0	100%	36,315	55.79	651
D207	3/6012	to 4/6012	58,326	0%	0	0%	0	100%	58,326	55.79	1,046
D208	4/6012	to 5/6012	50,406	0%	0	0%	0	100%	50,406	55.79	904
D209	5/6012	to 6/6012	62,468	0%	0	0%	0	100%	62,468	55.79	1,120
D210	6/6012	to 7/6012	249,576	0%	0	0%	0	100%	249,576	55.79	4,474
D211	7/6012S/QID	to 8/6012	54,917	0%	0	0%	0	100%	54,917	55.79	984
D212	1/6019	to 2/6019	22,270	0%	0	0%	0	100%	22,270	55.79	396
D213	2/6019	to 3/6019	20,555	0%	0	0%	0	100%	20,555	55.79	368
D214	3/6019	to 4/6019	63,094	0%	0	0%	0	100%	63,094	55.79	1,131
D215	4/6019	to 5/6019	59,719	0%	0	0%	0	100%	59,719	55.79	1,024
D216	5/6019S/QID	to 6/6019	33,009	0%	0	0%	0	100%	33,009	55.79	592
D217	1/6025	to 2/6025	11,804	0%	0	0%	0	100%	11,804	55.79	212
D218	2/6025	to 3/6025	103,616	0%	0	0%	0	100%	103,616	55.79	1,857
D219	3/6025	to 4/6025	39,456	0%	0	0%	0	100%	39,456	55.79	707
D220	4/6025S/QID	shared with Line 5026	26,500	0%	0	0%	0	100%	26,500	55.79	476
11/6026 (Drainage Easement)			4,330	0%	0	0%	0	100%	4,330	55.79	78
									3,001,878	TOTAL	53,813

Table C-5 Infrastructure Charges Rates: Piped Drainage/Drainage Easement - Charge Area 5 (Catchment 6)

Type of development	Charge ICU/ha
Very low density residential	54,145
Low density residential	58,036
Low-medium density residential	58,035
Mixed use in Town Centre	62,925
Mixed use not in Town Centre	62,925
Town Centre	65,852
Neighbourhood Centre	64,389
Business Centre	64,389
Business Park	59,999
Gateway Civic	64,389
State Service Centre	64,389
Community Use	64,389

Note the above charge includes the additional charge payable for the Overall Charge Area for piped drainage/ drainage easement (refer to Table C-6-6)

**Additional Overall Charge**

Item Identification	Item Description		Construction Cost 2006 (\$)	Stage	Assumed Discounting Year	NPV 2006 (\$)	NPV ICUs
	Node to	Node					
D089	1/4013	to 2/4013	111,008	1	2009	136,210	95,219
D090	2/4013	to 3/4013	100,417	1	2009	84,312	59,375
D091	3/4013	to 4/4013	160,647	1	2009	134,862	94,987
D092	4/4013S/QID	shared with Line 2034	75,710	1	2009	64,038	45,997
D153	1/2007	to 2/2007	58,690	2	2014	36,823	25,932
D154	2/2007S/QID	to 3/2007	81,386	2	2014	51,585	35,991
D155	1/2008	to 2/2008	41,832	2	2014	26,246	18,483
D156	1/2011	to 2/2011	47,735	2	2014	29,950	21,091
D157	1/2012	to 2/2012	32,863	2	2014	20,430	14,386
D158	1/2015	to 2/2015	67,770	2	2014	42,520	29,944
D159	2/2015	to 3/2015	27,568	2	2014	17,296	12,180
D160	1/2017	to 2/2017	151,089	2	2014	94,753	66,748
D161	2/2017	to 3/2017	55,193	2	2014	34,629	24,386
D162	3/2017S/QID	to 4/2017	82,268	2	2014	52,049	36,654
D163	1/2019	to 2/2019	63,922	2	2014	40,106	28,243
D164	2/2019	to 3/2019	107,448	2	2014	67,414	47,475
D165	3/2019	to 4/2019	36,349	2	2014	22,806	16,060
D166	4/2019	to 5/2019	22,695	2	2014	14,239	10,028
D167	5/2019	to 6/2019	165,148	2	2014	87,824	61,794
D168	6/2019	to 7/2019	131,206	2	2014	82,320	57,872
D169	7/2019	to 8/2019	80,752	2	2014	50,665	35,680
D170	8/2019S/QID	to 9/2019	112,786	2	2014	70,763	49,823
D171	1/2025	to 2/2025	17,310	2	2014	10,861	7,648
D172	1/2026	to 2/2026	8,971	2	2014	5,566	3,920
D173	2/2026	to 3/2026	167,983	2	2014	105,018	73,956
D174	3/2026	to 4/2026	62,594	2	2014	39,272	27,656
D175	4/2026S/QID	shared with Line 2034	71,661	2	2014	44,861	31,662
D176	1/2031	to 2/2031	125,421	2	2014	78,691	56,416
D177	2/2031	to 3/2031	42,467	2	2014	26,644	18,764
D178	1/2032	to 2/2032	15,304	2	2014	9,602	6,762
D179	2/2032	to 3/2032	63,355	2	2014	39,750	27,993
D180	3/2032S/QID	to 4/2032	79,896	2	2014	47,618	33,524
D181	1/2034	to 2/2034	8,979	2	2014	4,316	3,029
D182	2/2034	to 3/2034	122,295	2	2014	76,917	54,167
D183	3/2034	to 4/2034	89,717	2	2014	56,296	39,646
D184	4/2034	to 5/2034	53,373	2	2014	33,487	23,582
D185	5/2034	to 6/2034	41,021	2	2014		

Table C-4 Cost Apportionment: Piped Drainage/Drainage Easement- Additional Overall Charge Area

Item Identification	Item Description		NPV ICUs	External Use		Existing Use		Future use		Charge	
	Node	Node		% total use	Apportioned cost	% total use	Apportioned cost	% total use	Apportioned cost	NPV future demand (€/ha)	Charge (€/Cu/E/ha)
	to	to									
D089	14013	to 24013	95,219	0%	0	0%	0	100%	95,219	364.57	261
D090	24013	to 34013	59,375	0%	0	0%	0	100%	59,375	364.57	163
D091	34013	to 44013	94,867	0%	0	0%	0	100%	94,867	364.57	261
D092	44013SQID	shared with Line 2034	45,097	0%	0	0%	0	100%	45,097	364.57	124
D153	12007	to 22007	25,932	0%	0	0%	0	100%	25,932	364.57	71
D154	22007SQID		35,951	0%	0	0%	0	100%	35,951	364.57	99
D155	12008	to 22008	18,483	0%	0	0%	0	100%	18,483	364.57	51
D156	12011	to 22011	21,091	0%	0	0%	0	100%	21,091	364.57	58
D157	12012	to 22012	14,388	0%	0	0%	0	100%	14,388	364.57	39
D158	12015	to 22015	29,944	0%	0	0%	0	100%	29,944	364.57	82
D159	22015	to 22017	12,160	0%	0	0%	0	100%	12,160	364.57	33
D160	12017	to 22017	66,748	0%	0	0%	0	100%	66,748	364.57	183
D161	22017	to 32017	24,386	0%	0	0%	0	100%	24,386	364.57	67
D162	32017SQID		36,654	0%	0	0%	0	100%	36,654	364.57	101
D163	12019	to 22019	28,243	0%	0	0%	0	100%	28,243	364.57	77
D164	22019	to 32019	47,475	0%	0	0%	0	100%	47,475	364.57	130
D165	32019	to 42019	16,060	0%	0	0%	0	100%	16,060	364.57	44
D166	42019	to 52019	10,028	0%	0	0%	0	100%	10,028	364.57	28
D167	52019	to 62019	47,784	0%	0	0%	0	100%	47,784	364.57	131
D168	62019	to 72019	57,972	0%	0	0%	0	100%	57,972	364.57	159
D169	72019	to 82019	35,660	0%	0	0%	0	100%	35,660	364.57	98
D170	82019SQID		49,833	0%	0	0%	0	100%	49,833	364.57	137
D171	12025	to 22019	7,648	0%	0	0%	0	100%	7,648	364.57	21
D172	12026	to 22026	3,920	0%	0	0%	0	100%	3,920	364.57	11
D173	22026	to 32026	73,956	0%	0	0%	0	100%	73,956	364.57	203
D174	32026	to 42026	27,656	0%	0	0%	0	100%	27,656	364.57	76
D175	42026SQID	shared with Line 2004	31,662	0%	0	0%	0	100%	31,662	364.57	87
D176	12031	to 22031	55,416	0%	0	0%	0	100%	55,416	364.57	152
D177	22031	to 22032	18,764	0%	0	0%	0	100%	18,764	364.57	51
D178	12032	to 22032	6,762	0%	0	0%	0	100%	6,762	364.57	19
D179	22032	to 32032	27,993	0%	0	0%	0	100%	27,993	364.57	77
D180	32032SQID		33,034	0%	0	0%	0	100%	33,034	364.57	90
D181	12034	to 22034	3,039	0%	0	0%	0	100%	3,039	364.57	8
D182	22034	to 32034	54,167	0%	0	0%	0	100%	54,167	364.57	149
D183	32034	to 42034	39,645	0%	0	0%	0	100%	39,645	364.57	109
D184	42034	to 52034	23,582	0%	0	0%	0	100%	23,582	364.57	65
D185	52034	to 62034	18,129	0%	0	0%	0	100%	18,129	364.57	50
D186	62034SQID	shared with Line 4013	17,133	0%	0	0%	0	100%	17,133	364.57	47
D187	15033	to 25033	3,889	0%	0	0%	0	100%	3,889	364.57	11
D188	25033	to 35033	72,191	0%	0	0%	0	100%	72,191	364.57	198
D189	35033	to 45033	67,417	0%	0	0%	0	100%	67,417	364.57	185
D190	45033	to 55033	11,655	0%	0	0%	0	100%	11,655	364.57	32
D191	55033	to 65033	35,376	0%	0	0%	0	100%	35,376	364.57	97
D192	65033	to 75033	4,949	0%	0	0%	0	100%	4,949	364.57	14
D193	75033SQID		13,962	0%	0	0%	0	100%	13,962	364.57	38
D194	22007 (Drainage Easement)		10,339	0%	0	0%	0	100%	10,339	364.57	28
22008 (Drainage Easement)			11,753	0%	0	0%	0	100%	11,753	364.57	32
22011 (Drainage Easement)			16,613	0%	0	0%	0	100%	16,613	364.57	46
22012 (Drainage Easement)			62,741	0%	0	0%	0	100%	62,741	364.57	172
22019 (Drainage Easement)			94,285	0%	0	0%	0	100%	94,285	364.57	255
55033 (Drainage Easement)									1,721,601	TOTAL	4,722

Table C-5 Infrastructure Charges Rates: Piped Drainage/Drainage Easement- Additional Overall Charge Area

Type of development	Charge ICUL/ha
Very low density residential	4,300
Low density residential	4,722
Low-medium density residential	5,076
Mixed use in Town Centre	5,076
Mixed use not in Town Centre	5,213
Town Centre	5,195
Neighbourhood Centre	5,195
Business Centre	5,195
Business Park	4,840
Gateway Civic	5,195
State Service Centre	5,195
Community Use	5,195

**C2 Waterway Infrastructure Detailed Costings**

ID	Description	Catchment	Rate (2005-06\$) <i>Unless noted otherwise in Description</i>	Quantity (m²)	Cost (2006-07\$)	Infrastructure cost (2006-07\$)				TOTAL WATERWAYS INFRASTRUCTURE 2006-07\$ (Acquisition + Contingencies)	
						Cost (2006-07\$)	Contingencies	Design	ICP		
<b>Stage 1</b>											
R-1c	Core Waterway Corridor - Supplementary Planting (/m2)	4	33	15,140	544,596	544,596	163,376	163,376	54,459	10,892	773,312
R-1o	Core Waterway Corridor - Supplementary Planting (/m2)	5	33	21,880	737,024	737,024	236,107	236,107	78,702	15,740	1,117,574
R-2a	Core Waterway Corridor - Supplementary Planting (/m2)	5	33	54,200	1,949,574	1,949,574	584,872	584,872	194,957	38,991	2,768,395
R-4a	Core Waterway Corridor - Total Planting (/m2)	2	66	49,220	3,540,887	3,540,887	1,062,266	1,062,266	354,089	70,818	5,028,059
R-4b	Core Waterway Corridor - Supplementary Planting (/m2)	4	33	23,780	855,367	855,367	256,610	256,610	85,537	17,107	1,214,621
R-4c	Core Waterway Corridor - Total Planting (/m2)	4	66	4,410	317,255	317,255	95,177	95,177	31,726	6,345	450,503
R-4d	Core Waterway Corridor - Total Planting (/m2)	2	66	15,650	1,125,861	1,125,861	337,759	337,759	112,586	22,517	1,588,723
R-4e	Core Waterway Corridor - Supplementary Planting (/m2)	2	33	55,040	1,979,789	1,979,789	593,937	593,937	197,979	39,596	2,811,300
R-4f	Core Waterway Corridor - Total Planting (/m2)	2	66	19,000	1,366,860	1,366,860	410,058	410,058	136,686	27,337	1,940,941
S-1a	Bioretention swale (/m)	3	180.00	810	158,922	158,922	47,677	47,677	15,892	3,178	225,669
S-1b	Bioretention swale (/m)	3	180.00	850	166,770	166,770	50,031	50,031	16,677	3,335	236,813
S-1c	Bioretention swale (/m)	3	180.00	590	115,758	115,758	34,727	34,727	11,576	2,315	164,376
S-1d	Bioretention swale (/m)	5	180.00	1,050	206,010	206,010	61,803	61,803	20,601	4,120	292,534
S-1e	Bioretention swale (/m)	5	180.00	460	90,252	90,252	27,076	27,076	9,025	1,805	128,158
C-1a	Upgrade crossing for stream mgt and flows (Item)	2	1	1,080,600	831,231	831,231	249,369	249,369	83,123	16,625	1,180,348
C-1b	Upgrade crossing for stream mgt and flows (Item)	4	1	801,600	616,615	616,615	184,985	184,985	61,662	12,332	875,594
C-1c	Upgrade crossing for stream mgt and flows (Item)	3	1	1,363,700	1,049,000	1,049,000	314,700	314,700	104,900	20,980	1,489,580
C-1h	Upgrade crossing for stream mgt and flows (Item)	3	1	862,300	755,615	755,615	226,685	226,685	75,562	15,112	1,072,974
C-1b	Upgrade crossing for stream mgt and flows (Item)	2	1	4,917,700	3,792,846	3,792,846	1,134,854	1,134,854	379,285	75,657	5,371,642
C-4c	Upgrade crossing for stream mgt and flows (Item)	2	1	488,500	375,769	375,769	112,731	112,731	37,577	7,515	533,592
C101	Culvert under motorway (Item)	1	1	871,079	725,899	725,899	145,180	145,180	72,590	14,518	958,187
										<b>TOTAL Stage 1</b>	<b>30,232,894</b>
<b>Stage 2</b>											
C-2b	Upgrade crossing for stream mgt and flows (m2)	5	1	2,009,800	1,615,231	1,615,231	484,569	484,569	161,523	32,305	2,293,628
C-2c	Upgrade crossing for stream mgt and flows (m2)	5	1	3,791,700	2,916,692	2,916,692	875,008	875,008	291,669	58,334	4,141,703
C-2d	Upgrade crossing for stream mgt and flows (m2)	5	1	2,116,200	1,627,846	1,627,846	488,354	488,354	162,785	32,557	2,311,542
C201	Culvert under motorway	2	1	1,509,230	1,257,696	1,257,696	251,549	251,549	83,849	16,770	1,660,163
S-2a	Bioretention swale (/m)	3	180.00	570	111,834	111,834	33,550	33,550	11,183	2,237	158,804
S-2b	Bioretention swale (/m)	5	180.00	1,040	204,048	204,048	61,214	61,214	20,405	4,081	289,748
S-2c	Bioretention swale (/m)	5	180.00	730	143,226	143,226	42,968	42,968	14,323	2,865	203,381
S-2d	Bioretention swale (/m)	5	180.00	350	68,670	68,670	20,601	20,601	6,867	1,373	97,511
										<b>TOTAL Stage 2</b>	<b>11,156,480</b>
<b>Stage 3</b>											
C-3a	Upgrade crossing for stream mgt and flows (Item) (2006\$)	6	1	1,975,700	1,519,769	1,519,769	455,931	455,931	151,977	30,395	2,158,072
C601	Culvert under motorway (Item) (2006\$)	6	1	1,219,205	1,016,005	1,016,005	293,201	293,201	101,601	20,320	1,341,127
C602&3	Culvert under motorway (Item) (2006\$)	6	1	471,914	393,262	393,262	78,652	78,652	39,326	7,865	519,105
										<b>TOTAL Stage 3</b>	<b>4,018,304</b>

Catchment	Stage	Land** (2006-07\$)			Sub-total cost
		Core waterway public (m²)	Fringe public (m²)	Core waterway private (m²)	
		Rate (\$/m²)	Rate (\$/m²)	Rate (\$/m²)	
		\$28	\$80	\$14	
Catchment 1	stage 0	0	0	0	0
	stage 1	0	0	0	0
	stage 2	0	0	0	0
	stage 3	0	0	0	0
Catchment 2	stage 0 (WA3)	178,029	39,652	12,353	8,329,904
	stage 1 (WA4)	0	154	0	12,307
	stage 2	0	0	0	0
	stage 3	0	0	0	0
Catchment 3	stage 0 (WA1)	6,847	1,175	0	285,750
	stage 1 (WA2)	125,906	66,492	0	8,844,733
	stage 2	0	0	0	0
	stage 3	0	0	0	0
Catchment 4	stage 0 (WA5)	20,548	11,169	0	9,130,484
	stage 1 (WA6)	79,793	43,755	0	1,468,827
	stage 2	0	0	0	5,734,618
	stage 3	0	0	0	0
Catchment 5	stage 0	0	0	0	0
	stage 1 (WA7)	75,841	45,777	0	5,785,729
	stage 2 (WA8)	101,058	44,577	0	6,395,791
	stage 3	0	0	0	0
Catchment 6	stage 0	0	0	0	0
	stage 1	0	0	0	0
	stage 2	0	0	0	0
	stage 3 (WA9)	0	0	167,277	2,341,880
<b>Total all catchments</b>	<b>588,022</b>	<b>252,751</b>	<b>179,630</b>	<b>39,199,540</b>	

\* for discounting purposes, the stage 0 of development has been assumed to be the stage 1

Sub Total Cost	Land** (2006-07\$)	
	Contingencies & Indirect	TOTAL WATERWAYS LAND 2006 (\$) (Acquisition + Contingencies)
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0
8,329,904	0	8,329,904
12,307	0	12,307
0	0	0
0	0	0
0	0	0
8,342,211	0	8,342,211
285,750	0	285,750
8,844,733	0	8,844,733
0	0	0
0	0	0
9,130,484	0	9,130,484
1,468,827	0	1,468,827
5,734,618	0	5,734,618
0	0	0
0	0	0
0	0	0
7,203,445	0	7,203,445
0	0	0
5,785,729	0	5,785,729
6,395,791	0	6,395,791
0	0	0
0	0	0
12,181,520	0	12,181,520
0	0	0
0	0	0
0	0	0
2,341,880	0	2,341,880
2,341,880	0	2,341,880
<b>39,199,540</b>	<b>Total</b>	<b>39,199,540</b>

Infrastructure Contingencies & Indirect		
Construction	Design	ICP
30%	10%	2%

  

Land Contingencies	
Contingencies	0%

**Appendix C3 Piped Drainage Costs**

**Pipe Quantities and Costs**

ID	Reach		Pipe dia/ Box Culvt (mm)	No of Cells	Reach length (/m)	Total length of pipe (m)	Rate * (/m)	Cost (\$)	Development Stage	Charge Area
	Node to	Node								
D001	1/1001	to 2/1001	1050	1	15.621	15.621	\$1,380	\$21,557	1	1
D002	2/1001	to 3/1001	1050	1	78.025	78.025	\$1,380	\$107,675	1	1
D003	3/1001	to 4/1001	1200	1	4.763	4.763	\$1,590	\$7,573	1	1
D004	4/1001SQID							\$74,642	1	1
D005	1/1005	to 2/1006	1650	1	8.245	8.245	\$2,295	\$18,922	1	1
D006	1/1006	to 2/1006	675	1	17.075	17.075	\$675	\$11,526	1	1
D007	2/1006	to 3/1006	1200	2	55.854	111.708	\$2,845	\$158,905	1	1
D008	1/1008	to 2/1006	750	1	8.233	8.233	\$1,010	\$8,315	1	1
D009	2/1008SQID							\$142,283	1	1
D010	1/1004	to 2/1007	375	1	162.632	162.632	\$420	\$68,305	1	1
D011	1/1007	to 2/1007	1200	1	23.854	23.854	\$1,590	\$37,928	1	1
D012	2/1007	to 3/1007	1350	1	55.62	55.62	\$1,800	\$100,116	1	1
D013	3/1007SQID							\$88,767	1	1
D014	1/2001	to 2/2001	825	1	8.399	8.399	\$1,110	\$9,323	1	2
D015	2/2001	to 3/2001	825	1	199.776	199.776	\$1,110	\$221,751	1	2
D016	3/2001	to 4/2001	825	1	111.276	111.276	\$1,110	\$123,516	1	2
D017	4/2001	to 5/2001	825	1	197.676	197.676	\$1,110	\$219,420	1	2
D018	5/2001	to 6/2001	1050	1	55.396	55.396	\$1,380	\$76,446	1	2
D019	6/2001	to 7/2001	1050	1	28.446	28.446	\$1,380	\$39,255	1	2
D020	7/2001	to 8/2001	1650	1	35.861	35.861	\$2,295	\$82,301	1	2
D021	1/2004	to 2/2004	900	1	6.759	6.759	\$1,200	\$8,111	1	2
D022	2/2004	to 5/2001	900	1	22.366	22.366	\$1,200	\$26,839	1	2
D023	5/2004SQID shared with Line 2026							\$108,645	1	2
D024	1/3001	to 2/3001	525	1	11.944	11.944	\$555	\$6,629	1	2
D025	2/3001	to 3/3001	525	1	200.15	200.15	\$555	\$111,083	1	2
D026	3/3001	to 4/3001	600	1	200	200	\$610	\$122,000	1	2
D027	4/3001	to 5/3001	675	1	200	200	\$675	\$135,000	1	2
D028	5/3001	to 6/3001	1050	1	113.896	113.896	\$1,380	\$157,176	1	2
D029	6/3001	to 7/3001	1350	1	104.764	104.764	\$1,800	\$188,575	1	2
D030	7/3001	to 8/3001	2100	2	205.134	410.268	\$5,975	\$1,225,676	1	2
D031	8/3001	to 9/3001	2400	2	91.844	183.688	\$7,540	\$692,504	1	2
D032	9/3001	to 10/3001	2400	2	157.568	315.136	\$7,540	\$1,188,063	1	2
D033	10/3001	to 11/3001	2400	3	59.833	179.499	\$11,310	\$676,711	1	2
D034	1/3012	to 2/3012	1200	1	9.561	9.561	\$1,590	\$15,202	1	2
D035	2/3012	to 3/3012	1200	1	130.782	130.782	\$1,590	\$207,943	1	2
D036	3/3012	to 4/3012	1350	1	199.298	199.298	\$1,800	\$358,736	1	2
D037	4/3012	to 5/3012	1350	1	199.961	199.961	\$1,800	\$359,930	1	2
D038	5/3012	to 6/3012	1500	1	76.79	76.79	\$2,005	\$153,964	1	2
D039	6/3012	to 7/3012	1650	1	122.903	122.903	\$2,295	\$282,062	1	2
D040	7/3012	to 8/3012	1650	2	142.332	284.664	\$4,135	\$588,543	1	2
D041	8/3012	to 9/3012	1800	2	22.643	45.286	\$4,615	\$104,497	1	2
D042	9/3012SQID shared with Line 4005							\$227,143	1	2
D043	1/3021	to 2/3021	675	1	6.467	6.467	\$675	\$4,365	1	2
D044	2/3021	to 3/3021	675	1	190.088	190.088	\$675	\$128,309	1	2
D045	3/3021	to 4/3021	825	1	130.078	130.078	\$1,110	\$144,387	1	2
D046	4/3021	to 5/3021	825	1	115.193	115.193	\$1,110	\$127,864	1	2
D047	5/3021	to 6/3021	900	1	84.649	84.649	\$1,200	\$101,579	1	2
D048	6/3021	to 7/3021	1350	1	33.319	33.319	\$1,800	\$59,974	1	2
D049	7/3021SQID shared with Line 3028							\$83,907	1	2
D050	1/3023	to 2/3023	750	1	7.531	7.531	\$1,010	\$7,606	1	2
D051	2/3023	to 3/3023	750	1	159.091	159.091	\$1,010	\$160,682	1	2
D052	3/3023	to 4/3023	1050	1	52.983	52.983	\$1,380	\$73,117	1	2
D053	4/3023	to 5/3023	1350	1	45.138	45.138	\$1,800	\$81,248	1	2
D054	5/3023SQID							\$85,167	1	2
D055	1/3028	to 2/3028	900	1	15.711	15.711	\$1,200	\$18,853	1	2
D056	2/3028	to 3/3028	900	1	228.656	228.656	\$1,200	\$274,387	1	2
D057	3/3028	to 4/3028	1350	1	25.413	25.413	\$1,800	\$45,743	1	2
D058	4/3028SQID shared with Line 3021							\$67,626	1	2
D059	1/4005	to 2/4005	750	1	9.063	9.063	\$1,010	\$9,154	1	2
D060	2/4005	to 3/4005	750	1	77.909	77.909	\$1,010	\$78,688	1	2
D061	3/4005	to 4/4005	1050	1	17.504	17.504	\$1,380	\$24,156	1	2
D062	4/4005SQID shared with Line 3012							\$31,975	1	2
D063	1/4008	to 2/4008	900	1	11.203	11.203	\$1,200	\$13,444	1	4
D064	2/4008	to 3/4008	900	1	200.028	200.028	\$1,200	\$240,034	1	4
D065	3/4008	to 4/4008	1200	1	58.003	58.003	\$1,590	\$92,225	1	4
D066	4/4008	to 5/4008	1500	1	24.364	24.364	\$2,005	\$48,850	1	4
D067	5/4008SQID							\$91,300	1	4
D068	1/4015	to 2/4015	750	1	6.207	6.207	\$1,010	\$6,269	1	4
D069	2/4015	to 3/4015	750	1	97.37	97.37	\$1,010	\$98,344	1	4
D070	3/4015	to 4/4015	825	1	21.51	21.51	\$1,110	\$23,876	1	4
D071	4/4015SQID							\$64,967	1	4
D072	1/5001	to 2/5001	900	1	9.027	9.027	\$1,200	\$10,832	1	5
D073	1/5006	to 10/5001	1050	1	5.138	5.138	\$1,380	\$7,090	1	5
D074	2/5001	to 3/5001	900	1	189.888	189.888	\$1,200	\$227,866	1	5
D075	3/5001	to 4/5001	1200	1	110.316	110.316	\$1,590	\$175,402	1	5
D076	4/5001	to 5/5001	1200	1	46.619	46.619	\$1,590	\$74,124	1	5
D077	5/5001	to 6/5001	1200	1	61.259	61.259	\$1,590	\$97,402	1	5
D078	6/5001	to 7/5001	1650	1	49.095	49.095	\$2,295	\$112,673	1	5

Cost	Contingencies & Indirect				Total Contingencies + Indirect	Total 2006 (\$)
	Contingencies	Design 2006 (\$)	ICP 2006 (\$)			
21,557	6,467	2,802	617	9,886	31,443	
107,675	32,302	13,998	3,079	49,380	157,054	
7,573	2,272	985	217	3,473	11,046	
74,642	22,393	9,703	2,135	34,231	108,872	
18,922	5,677	2,460	541	8,678	27,600	
11,526	3,458	1,498	330	5,286	16,811	
158,905	47,871	20,658	4,545	72,874	231,778	
8,315	2,495	1,081	238	3,813	12,129	
142,283	42,685	18,497	4,069	65,251	207,534	
68,305	20,492	8,880	1,954	31,325	99,630	
37,928	11,378	4,931	1,085	17,394	55,322	
100,116	30,035	13,015	2,863	45,913	146,029	
88,767	26,630	11,540	2,539	40,708	129,475	
9,323	2,797	1,212	267	4,275	13,598	
221,751	66,525	28,828	6,342	101,695	323,447	
123,516	37,055	16,057	3,533	56,645	180,161	
219,420	65,826	28,525	6,275	100,626	320,047	
76,446	22,934	9,938	2,186	35,058	111,505	
39,255	11,777	5,103	1,123	18,003	57,258	
82,301	24,690	10,699	2,354	37,743	120,044	
8,111	2,433	1,054	232	3,720	11,830	
26,839	8,052	3,489	768	12,308	39,148	
108,645	32,594	14,124	3,107	49,825	158,470	
6,629	1,989	862	190	3,040	9,669	
111,083	33,325	14,441	3,177	50,943	162,026	
122,000	36,600	15,860	3,489	55,949	177,949	
135,000	40,500	17,550	3,861	61,911	196,911	
157,176	47,153	20,433	4,495	72,081	229,258	
188,575	56,573	24,515	5,393	86,481	275,056	
1,225,676	367,703	159,338	35,054	562,095	1,787,771	
692,504	207,751	90,025	19,806	317,582	1,010,086	
1,188,063	356,419	154,448	33,979	544,846	1,732,908	
676,711	203,013	87,972	19,354	310,340	987,051	
15,202	4,561	1,976	435	6,972	22,174	
207,943	62,383	27,033	5,947	95,363	303,306	
358,736	107,621	46,636	10,260	164,517	523,253	
359,930	107,979	46,791	10,294	165,064	524,994	
153,964	46,189	20,015	4,403	70,608	224,572	
282,062	84,619	36,668	8,067	129,354	411,416	
588,543	176,563	76,511	16,832	269,906	858,449	
104,497	31,349	13,585	2,989	47,923	152,420	
227,143	68,143	29,529	6,496	104,168	331,311	
4,365	1,310	567	125	2,002	6,367	
128,309	38,493	16,680	3,670	58,843	187,152	
144,387	43,316	18,770	4,129	66,216	210,602	
127,864	38,359	16,622	3,657	58,639	186,503	
101,579	30,474	13,205	2,905	46,584	148,163	
59,974	17,992	7,797	1,715	27,504	87,478	
83,907	25,172	10,908	2,400	38,480	122,387	
7,606	2,282	989	218	3,488	11,095	
160,682	48,205	20,889	4,596	73,689	234,371	
73,117	21,935	9,505	2,091	33,531	106,648	
81,248	24,375	10,562	2,324	37,261	118,509	
85,167	25,550	11,072	2,436	39,057	124,224	
18,853	5,656	2,451	539	8,646	27,499	
274,387	82,316	35,670	7,847			

ID	Reach		Pipe dia/ Box Culvt (mm)	No of Calls	Reach length (m)	Total length of pipe (m)	Rate * (m)	Cost (\$)	Development Stage	Charge Area
	Node	to Node								
D079	7/5001	to 8/5001	1650	1	153.576	153.576	\$2.295	\$352,457	1	5
D080	8/5001	to 9/5001	1800	1	125.435	125.435	\$2.555	\$320,486	1	5
D081	9/5001	to 10/5001	2100	1	130.352	130.352	\$3.295	\$429,510	1	5
D082	10/5001	to 11/5001	2100	2	92.567	185.134	\$5.975	\$653,088	1	5
D083	11/5001	to 12/5001	2400	2	30.835	61.67	\$7.540	\$232,496	1	5
D084	12/5001SQID	shared with Line 5020						\$322,530	1	5
D085	1/5020	to 2/5020	900	1	6.746	6.746	\$1.200	\$8,095	1	5
D086	2/5020	to 3/5020	900	1	114.937	114.937	\$1.200	\$137,924	1	5
D087	3/5020	to 4/5020	1350	1	29.434	29.434	\$1.800	\$52,981	1	5
D088	4/5020SQID							\$63,901	1	5
D089	1/4013	to 2/4013	525	1	198.929	198.929	\$555	\$110,406	1	A
D090	2/4013	to 3/4013	600	1	112.86	112.86	\$610	\$68,845	1	A
D091	3/4013	to 4/4013	1200 x 450	2	24.475	48.95	\$4.500	\$110,138	1	A
D092	4/4013SQID	shared with Line 2034						\$52,290	1	A
D093	1/3005	to 2/3005	900	1	13.258	13.258	\$1.200	\$15,910	2	2
D094	2/3005	to 3/3005	900	1	202.256	202.256	\$1.200	\$242,707	2	2
D095	3/3005	to 7/3001	2100	2	154.476	308.952	\$5.975	\$922,994	2	2
D096	7/3001SQID							\$441,914	2	2
D097	1/5007	to 2/5007	450	1	14.115	14.115	\$520	\$7,340	2	5
D098	2/5007	to 3/5007	450	1	194.642	194.642	\$520	\$101,214	2	5
D099	3/5007	to 4/5007	825	1	199.618	199.618	\$1.110	\$221,576	2	5
D100	3/5007	to 4/5007	600	1	199.618	199.618	\$610	\$121,767	2	5
D101	4/5007	to 5/5007	1050	1	146.36	146.36	\$1.380	\$201,977	2	5
D102	4/5007	to 5/5007	750	1	146.36	146.36	\$1.010	\$147,824	2	5
D103	5/5007	to 6/5007	1200	1	252.619	252.619	\$1.590	\$401,664	2	5
D104	5/5007	to 6/5007	900	1	252.619	252.619	\$1.200	\$303,143	2	5
D105	6/5007	to 7/5007	1200	1	103.156	103.156	\$1.590	\$164,018	2	5
D106	6/5007	to 7/5007	1050	1	103.156	103.156	\$1.380	\$142,355	2	5
D107	7/5007	to 8/5007	1500	1	152.23	152.23	\$2.005	\$305,221	2	5
D108	7/5007	to 8/5007	1200	1	152.23	152.23	\$1.590	\$242,046	2	5
D109	8/5007	to 9/5007	1950	1	232.469	232.469	\$2.900	\$674,160	2	5
D110	8/5007	to 9/5007	1350	1	232.469	232.469	\$1.800	\$418,444	2	5
D111	9/5007	to 10/5007	2100	1	138.431	138.431	\$3.295	\$456,130	2	5
D112	9/5007	to 10/5007	1350	1	138.431	138.431	\$1.800	\$249,176	2	5
D113	10/5007	to 11/5007	1950	2	27.098	54.196	\$5.245	\$142,129	2	5
D114	10/5007	to 11/5007	1500	1	27.098	27.098	\$2.005	\$54,331	2	5
D115	11/5007SQID	shared with Line 5023						\$275,061	2	5
D116	1/5022	to 2/5022	900	1	6.612	6.612	\$1.200	\$7,934	2	5
D117	2/5022	to 3/5022	900	1	95.05	95.05	\$1.200	\$114,060	2	5
D118	3/5022	to 4/5022	1200	1	32.243	32.243	\$1.590	\$51,266	2	5
D119	4/5022SQID	shared with Line 5028						\$55,062	2	5
D120	1/5023	to 2/5023	450	1	145.293	145.293	\$520	\$75,552	2	5
D121	2/5023	to 3/5023	1050	1	47.286	47.286	\$1.380	\$65,255	2	5
D122	3/5023	to 4/5023	1050	1	24.237	24.237	\$1.380	\$33,447	2	5
D123	4/5023SQID	shared with Line 5007						\$25,485	2	5
D124	1/5024	to 2/5024	1200	1	69.755	69.755	\$1.590	\$110,910	2	5
D125	2/5024	to 3/5024	1650	1	32.105	32.105	\$2.295	\$73,681	2	5
D126	3/5024SQID							\$111,617	2	5
D127	1/5026	to 2/5026	525	1	5.278	5.278	\$555	\$2,929	2	5
D128	2/5026	to 3/5026	525	1	266.228	266.228	\$555	\$147,757	2	5
D129	3/5026	to 4/5026	1050	1	200.253	200.253	\$1.380	\$276,349	2	5
D130	4/5026	to 5/5026	1050	1	254.991	254.991	\$1.380	\$351,888	2	5
D131	5/5026	to 6/5026	1950	1	54.011	54.011	\$2.900	\$156,632	2	5
D132	1/6001	to 3/6026	675	1	4.74	4.74	\$675	\$3,200	2	5
D133	3/5026SQID	shared with Line 6025						\$139,738	2	5
D134	1/5028	to 2/5028	525	1	262.483	262.483	\$555	\$145,678	2	5
D135	2/5028	to 3/5028	1050	1	39.207	39.207	\$1.380	\$54,106	2	5
D136	3/5028SQID	shared with Line 5022						\$89,321	2	5
D137	1/5039	to 2/5039	900	1	27.681	27.681	\$1.200	\$33,217	2	5
D138	2/5039SQID							\$68,883	2	5
D139	1/6026	to 2/6026	825	1	67.117	67.117	\$1.110	\$74,500	2	6
D140	1/6026	to 2/6026	750	1	67.117	existing			2	6
D141	2/6026	to 3/6026	1500	1	60.184	60.184	\$2.005	\$120,669	2	6
D142	2/6026	to 3/6026	1050	1	60.184	existing			2	6
D143	3/6026	to 4/6026	1500	1	120.17	120.17	\$2.005	\$240,941	2	6
D144	3/6026	to 4/6026	1050	1	120.17	existing			2	6
D145	4/6026	to 5/6026	1500	1	97.888	97.888	\$2.005	\$196,265	2	6
D146	5/6026	to 6/6026	1500	1	105.866	105.866	\$2.005	\$212,261	2	6
D147	6/6026	to 7/6026	1500	1	109.315	109.315	\$2.005	\$219,177	2	6
D148	7/6026	to 8/6026	1500	1	29.329	29.329	\$2.005	\$58,805	2	6
D149	8/6026	to 9/6026	1650	1	51.209	51.209	\$2.295	\$117,525	2	6
D150	9/6026	to 10/6026	1650	1	74.199	74.199	\$2.295	\$170,287	2	6
D151	10/6026	to 11/6026	1800	1	37.571	37.571	\$2.555	\$95,994	2	6
D152	11/6026SQID							\$167,960	2	6
D153	1/2007	to 2/2007	750	1	39.839	39.839	\$1.010	\$40,237	2	A
D154	2/2007SQID							\$55,783	2	A
D155	1/2008	to 2/2008	675	1	42.488	42.488	\$675	\$28,679	2	A
D156	1/2011	to 2/2011	450	1	62.936	62.936	\$520	\$32,727	2	A
D157	1/2012	to 2/2012	525	1	40.225	40.225	\$555	\$22,325	2	A
D158	1/2015	to 2/2015	375	1	110.625	110.625	\$420	\$46,463	2	A

Cost	Contingencies & Indirect			Total Contingencies + Indirect	Total 2006 (\$)
	Contingencies	Design 2006 (\$)	ICP 2006 (\$)		
352,457	105,737	45,819	10,080	161,637	514,094
320,486	96,146	41,663	9,166	146,975	467,461
429,510	128,853	55,836	12,284	196,973	626,483
553,088	165,926	71,901	15,818	253,646	806,734
232,496	69,749	30,224	6,649	106,623	339,119
322,530	96,759	41,929	9,224	147,912	470,442
8,095	2,429	1,052	232	3,712	11,808
137,924	41,377	17,930	3,945	63,252	201,177
52,981	15,894	6,888	1,515	24,297	77,278
63,901	19,170	8,307	1,828	29,305	93,206
110,406	33,122	14,353	3,158	50,632	161,038
68,845	20,653	8,950	1,969	31,572	100,417
110,138	33,041	14,318	3,150	50,509	160,647
52,290	15,687	6,798	1,495	23,980	76,270
15,910	4,773	2,068	455	7,296	23,206
242,707	72,812	31,552	6,941	111,306	354,013
922,994	276,898	119,989	26,398	423,285	1,346,279
441,914	132,574	57,449	12,639	202,662	644,576
7,340	2,202	954	210	3,366	10,706
101,214	30,364	13,158	2,895	46,417	147,631
221,576	66,473	28,805	6,337	101,615	323,191
121,767	36,530	15,830	3,483	55,842	177,609
201,977	60,593	26,257	5,777	92,627	294,603
147,824	44,347	19,217	4,228	67,792	215,616
401,664	120,499	52,216	11,488	184,203	585,867
303,143	90,943	39,409	8,670	139,021	442,164
164,018	49,205	21,322	4,691	75,219	239,237
142,355	42,707	18,506	4,071	65,284	207,639
305,221	91,566	39,679	8,729	139,974	445,196
242,046	72,614	31,466	6,923	111,002	353,048
674,160	202,248	87,641	19,281	309,170	983,330
418,444	125,533	54,398	11,968	191,899	610,343
456,130	136,839	59,297	13,045	209,181	665,311
249,176	74,753	32,393	7,126	114,272	363,448
142,129	42,639	18,477	4,065	65,180	207,309
54,331	16,299	7,063	1,554	24,916	79,248
275,061	82,518	35,758	7,867	126,143	401,204
7,934	2,380	1,031	227	3,639	11,573
114,060	34,218	14,828	3,262	52,308	166,368
51,266	15,380	6,665	1,466	23,511	74,777
55,062	16,519	7,158	1,575	25,251	80,313
75,552	22,666	9,822	2,161	34,648	110,201
65,255	19,576	8,483	1,866	29,926	95,180
33,447	10,034	4,348	957	15,339	48,786
25,485	7,646	3,313	729	11,687	37,172
110,910	33,273	14,418	3,172	50,864	161,774
73,681	22,104	9,579	2,107	33,790	107,471
111,617	33,485	14,510	3,192	51,187	162,804
2,929	879	381	84	1,343	4,273
147,757	44,327	19,208	4,226	67,761	215,518
82,905	35,925	16,232	3,547	55,908	138,813
351,888	105,566	45,745	10,064	161,376	513,263
156,632	46,990	20,362	4,480	71,831	228,463
3,200	960	416	92	1,467	4,667
139,738	41,922	18			

ID	Reach			Pipe dia/ Box Culvt (mm)	No of Calls	Reach length (/m)	Total length of pipe (m)	Rate * (/m)	Cost (\$)	Development Stage	Charge Area
	Node	to	Node								
D159	2/2015	to	2/2017	375	1	45	45	\$420	\$18,900	2	A
D160	1/2017	to	2/2017	450	1	199.176	199.176	\$520	\$103,572	2	A
D161	2/2017	to	3/2017	750	1	37.465	37.465	\$1,010	\$37,840	2	A
D162	3/2017SQID								\$56,875	2	A
D163	1/2019	to	2/2019	525	1	78.963	78.963	\$555	\$43,824	2	A
D164	2/2019	to	3/2019	600	1	120.763	120.763	\$610	\$73,665	2	A
D165	3/2019	to	4/2019	675	1	36.919	36.919	\$675	\$24,920	2	A
D166	4/2019	to	5/2019	675	1	23.051	23.051	\$675	\$15,559	2	A
D167	5/2019	to	6/2019	675	1	109.845	109.845	\$675	\$74,145	2	A
D168	6/2019	to	7/2019	675	1	133.264	133.264	\$675	\$89,953	2	A
D169	7/2019	to	8/2019	1050	1	40.118	40.118	\$1,380	\$55,363	2	A
D170	8/2019SQID								\$77,325	2	A
D171	1/2025	to	7/2019	525	1	21.383	21.383	\$555	\$11,868	2	A
D172	1/2026	to	2/2026	450	1	11.696	11.696	\$520	\$6,082	2	A
D173	2/2026	to	3/2026	450	1	220.684	220.684	\$520	\$114,756	2	A
D174	3/2026	to	4/2026	825	1	38.661	38.661	\$1,110	\$42,914	2	A
D175	4/2026SQID shared with Line 2004								\$49,130	2	A
D176	1/2031	to	2/2031	375	1	204.732	204.732	\$420	\$85,987	2	A
D177	2/2031	to	2/2032	450	1	55.99	55.99	\$520	\$29,115	2	A
D178	1/2032	to	2/2032	450	1	20.177	20.177	\$520	\$10,482	2	A
D179	2/2032	to	3/2032	825	1	39.131	39.131	\$1,110	\$43,435	2	A
D180	3/2032SQID								\$52,033	2	A
D181	1/2034	to	2/2034	375	1	11.229	11.229	\$420	\$4,716	2	A
D182	2/2034	to	3/2034	375	1	200.118	200.118	\$420	\$84,050	2	A
D183	3/2034	to	4/2034	450	1	118.3	118.3	\$520	\$61,516	2	A
D184	4/2034	to	5/2034	525	1	65.931	65.931	\$555	\$36,592	2	A
D185	5/2034	to	6/2034	525	2	27.852	55.704	\$1,010	\$28,131	2	A
D186	6/2034SQID shared with Line 4013								\$26,585	2	A
D187	1/5033	to	2/5033	525	1	10.874	10.874	\$555	\$6,035	2	A
D188	2/5033	to	3/5033	525	1	201.581	201.581	\$555	\$111,877	2	A
D189	2/5033	to	3/5033	300	1	201.581	existing			2	A
D190	3/5033	to	4/5033	525	1	188.484	188.484	\$555	\$104,609	2	A
D191	3/5033	to	4/5033	375	1	188.484	existing			2	A
D192	4/5033	to	5/5033	825	1	16.292	16.292	\$1,110	\$18,084	2	A
D193	4/5033	to	5/5033	450	1	16.292	existing			2	A
D194	5/5033SQID								\$54,892	2	A
D195	1/6002	to	2/6002	675	1	5.298	5.298	\$675	\$3,576	3	6
D196	2/6002	to	3/6002	675	1	78.147	78.147	\$675	\$52,749	3	6
D197	3/6002	to	4/6002	675	1	115.043	115.043	\$675	\$77,654	3	6
D198	4/6002	to	5/6002	1500	2	153.003	306.006	\$3,600	\$550,811	3	6
D199	5/6002	to	7/6002	1500	2	33.99	67.98	\$3,600	\$122,364	3	6
D200	1/6007	to	2/6007	1050	1	4.151	4.151	\$1,380	\$5,728	3	6
D201	2/6007	to	3/6007	1050	1	106.546	106.546	\$1,380	\$147,033	3	6
D202	3/6007	to	4/6007	1950	1	114.395	114.395	\$2,900	\$331,746	3	6
D203	4/6007	to	4/6002	1950	1	166.334	166.334	\$2,900	\$482,369	3	6
D204	4/6002SQID								\$213,123	3	6
D205	1/6012	to	2/6012	900	1	7.15	7.15	\$1,200	\$8,580	3	6
D206	2/6012	to	3/6012	900	1	62.84	62.84	\$1,200	\$75,408	3	6
D207	3/6012	to	4/6012	900	1	100.927	100.927	\$1,200	\$121,112	3	6
D208	4/6012	to	5/6012	900	1	87.222	87.222	\$1,200	\$104,666	3	6
D209	5/6012	to	6/6012	1050	1	93.995	93.995	\$1,380	\$129,713	3	6
D210	6/6012	to	7/6012	2100 x 750	1	92.543	92.543	\$5,600	\$56,241	3	6
D211	7/6012SQID								\$114,033	3	6
D212	1/6019	to	2/6019	375	1	110.104	110.104	\$420	\$46,244	3	6
D213	2/6019	to	3/6019	525	1	76.903	76.903	\$555	\$42,681	3	6
D214	3/6019	to	4/6019	600	1	214.775	214.775	\$610	\$131,013	3	6
D215	4/6019	to	5/6019	2400 x 750	1	39.369	39.369	\$6,600	\$259,835	3	6
D216	5/6019SQID								\$68,542	3	6
D217	1/8025	to	2/8025	1050	1	17.762	17.762	\$1,380	\$24,512	3	6
D218	2/8025	to	3/8025	1050	1	155.911	155.911	\$1,380	\$215,157	3	6
D219	3/8025	to	4/8025	1350	1	45.515	45.515	\$1,800	\$81,927	3	6
D220	4/8025SQID shared with Line 5026								\$55,045	3	6

Cost	Contingencies & Indirect			Total Contingencies + Indirect	Total 2006 (\$)
	Contingencies	Design 2006 (\$)	ICP 2006 (\$)		
18,900	5,670	2,457	541	8,668	27,568
103,572	31,071	13,464	2,962	47,498	151,069
37,840	11,352	4,919	1,082	17,353	55,193
56,875	17,063	7,394	1,627	26,083	82,958
43,824	13,147	5,697	1,253	20,098	63,922
73,665	22,100	9,577	2,107	33,783	107,448
24,920	7,476	3,240	713	11,428	36,349
15,559	4,668	2,023	445	7,136	22,695
74,145	22,244	9,639	2,121	34,003	108,148
89,953	26,986	11,694	2,573	41,253	131,206
55,363	16,609	7,197	1,583	25,389	80,752
77,325	23,198	10,052	2,211	35,461	112,786
11,868	3,560	1,543	339	5,442	17,310
6,082	1,825	791	174	2,789	8,871
114,756	34,427	14,918	3,282	52,627	167,383
42,914	12,874	5,579	1,227	19,680	62,594
49,130	14,739	6,387	1,405	22,531	71,661
85,987	25,796	11,178	2,459	39,434	125,421
29,115	8,734	3,785	833	13,352	42,467
10,492	3,148	1,364	300	4,812	15,304
43,435	13,031	5,647	1,242	19,919	63,355
52,033	15,610	6,764	1,488	25,862	75,896
4,716	1,415	613	135	2,163	6,879
84,050	25,215	10,926	2,404	38,545	122,595
61,516	18,455	7,997	1,759	28,211	89,727
36,592	10,978	4,757	1,047	16,781	53,373
28,131	8,439	3,657	805	12,901	41,031
26,585	7,976	3,456	760	12,192	38,777
6,035	1,811	785	173	2,768	8,803
111,877	33,563	14,544	3,200	51,307	163,184
104,609	31,383	13,599	2,992	47,974	152,582
18,084	5,425	2,351	517	8,293	26,377
54,892	16,468	7,136	1,570	25,173	80,065
3,576	1,073	465	102	1,640	5,216
52,749	15,825	6,857	1,509	24,191	76,940
77,654	23,296	10,095	2,221	35,612	113,266
550,811	165,243	71,605	15,753	252,602	803,413
122,364	36,709	15,907	3,500	56,116	178,480
5,728	1,719	745	164	2,627	8,355
147,033	44,110	19,114	4,205	67,430	214,463
331,746	99,524	43,127	9,488	152,138	483,884
482,369	144,711	62,708	13,796	221,214	703,583
213,123	63,937	27,706	6,095	97,738	310,862
8,580	2,574	1,115	245	3,935	12,515
75,408	22,622	9,803	2,157	34,582	109,990
121,112	36,334	15,745	3,464	55,542	176,655
104,666	31,400	13,607	2,993	48,000	152,666
129,713	38,914	16,863	3,710	59,486	189,200
58,241	15,542	6,731	1,482	23,765	81,996
114,033	34,210	14,824	3,261	52,296	166,329
46,244	13,873	6,012	1,323	21,207	67,451
42,681	12,804	5,549	1,221	19,574	62,255
131,013	39,304	17,032	3,747	60,082	191,095
259,835	77,951	33,779	7,431	119,161	378,996
68,542	20,563	8,910	1,960	31,433	99,975
24,512	7,353	3,187	701	11,241	35,753
215,157	64,547	27,970	6,153	98,671	313,828
81,927	24,578	10,651	2,343	37,572	119,499
55,045	16,513	7,156	1,574	25,244	80,288

Totals \$30,358,561 \$ 30,358,561 \$30,358,561 \$9,107,568 \$3,946,613 \$868,255 \$13,922,436 \$44,280,997

\*Includes culverts, manholes, gully pits and ancillaries

Contingencies & Indirect		
Construction 30%	Design 10%	ICP 2%

## Appendix C4a Rehabilitation Detailed Costs

### Breakdown of m<sup>2</sup> Costs for Rehabilitation

#### Core Waterway Corridor - Total Planting

Item	Description	Quantity/ m <sup>2</sup>	Rate	Unit	Total (\$/m <sup>2</sup> ) (\$2005)
Site Establishment	Allowance for costs associated with contractor to establish on site and general health and safety requirements associated with a workplace. Cost may include site sheds, barricading, signage or security	1	1.25	m <sup>2</sup>	1.25
Sediment control devices	Allowance for the erection and monitoring of sediment control devices and the use of stacked straw bails along the waterway to control water velocity run off	0.02	12.50	linear m (allows for both banks)	0.25
Weed eradication/ herbicides	Allowance to spray all weeds for their removal, and minimisation of further infestation	1	1.00	m <sup>2</sup>	1.00
Site preparation	Allowance for the ripping/ cultivation of site material to 150mm deep by hand ensuring caution with tree roots and/ or services	1	9.00	m <sup>2</sup>	9.00
Soil Quality Improvement	Allowance for site topsoil improvement through the addition of compost to the natural soil	1	1.60	m <sup>2</sup>	1.60
Jutemaster erosion control	Allowance for the supply and placement of erosion control mat	1	5.50	m <sup>2</sup>	5.50
Mulch forest blend	Allowance for the supply and placement of mulch on the upper bank only	0.67	4.00	m <sup>2</sup>	2.68
Planting	Lower bank - 7/ m <sup>2</sup> ; Middle bank - 6/ m <sup>2</sup> , Upper bank - 5.15/ m <sup>2</sup> . (50mm stock), where the following assumptions have been made for each side of the bank: lower bank width - 2.5m; middle bank width = 7.5m; and upper bank/ floodplain width = 20m.	1	27.90	6 tube stock/ m <sup>2</sup>	27.90
Watering during establishment period	13 visits over the 1st 2 months: Week 1 – Every 2nd day Week 2 – Every 2nd day Week 4 to Week 8 (2 month period) – weekly watering	1	7.80	m <sup>2</sup>	7.80
Weed control	Allowance for spot spraying 8 times over 3 years: 1-3 Month - Monthly visits 3 Month – 3yrs, 6 monthly visits (depends canopy cover devel.)	1	4.80	m <sup>2</sup>	4.80
Battering	Includes excavation, transport and disposal of soil for an eighth of the lower and middle banks = 2.5m <sup>3</sup> in total across the 60m wide waterway corridor, assuming depth of 1m. (I.e 2.5(W)*1(H)*1(D)	0.04	52.55	m <sup>3</sup>	2.10
Boulders	Strategically placed to aid bank stabilisation over a quarter of the lower and middle banks = 2.5m <sup>3</sup> in total across the 60m wide waterway corridor, assuming depth of 1m. (I.e 2.5(W)*1(H)*1(D)	0.04	57.00	m <sup>3</sup>	2.28
<b>TOTAL</b>					<b>\$66.16</b>



**Inner Core Waterway Corridor - Total Planting**

Item	Description	Quantity/ m <sup>2</sup>	Rate	Unit	Total (\$/m <sup>2</sup> ) (\$2005)
Site Establishment	Allowance for costs associated with contractor to establish on site and general health and safety requirements associated with a workplace. Cost may include site sheds, barricading, signage or security	1	1.25	m <sup>2</sup>	1.25
Sediment control devices	Allowance for the erection and monitoring of sediment control devices and the use of stacked straw bails along the waterway to control water velocity run off	0.03	12.50	linear m (allows for both banks)	0.38
Weed eradication/ herbicides	Allowance to spray all weeds for their removal, and minimisation of further infestation	1	1.00	m <sup>2</sup>	1.00
Site preparation	Allowance for the ripping/ cultivation of site material to 150mm deep by and ensuring caution with tree roots and/ or services	1	9.00	m <sup>2</sup>	9.00
Soil Quality Improvement	Allowance for site topsoil improvement through the addition of compost to the natural soil	1	1.60	m <sup>2</sup>	1.60
Jutemaster erosion control	Allowance for the supply and placement of erosion control mat	1	5.50	m <sup>2</sup>	5.50
Mulch forest blend	Allowance for the supply and placement of mulch on the upper bank only	0.33	4.00	m <sup>2</sup>	1.32
Planting	Lower bank - 7/ m <sup>2</sup> ; Middle bank - 6/ m <sup>2</sup> , Upper bank - 5.15/ m <sup>2</sup> . (50mm stock), where the following assumptions have been made for each side of the bank: lower bank width - 2.5m; middle bank width = 7.5m; and upper bank/ floodplain width = 20m.	1	27.90	6 tube stock/ m <sup>2</sup>	27.90
Watering during establishment period	13 visits over the 1st 2 months: Week 1 – Every 2nd day Week 2 – Every 2nd day Week 4 to Week 8 (2 month period) – weekly watering	1	7.80	m <sup>2</sup>	7.80
Weed control	Allowance for spot spraying 8 times over 3 years: 1-3 Month - Monthly visits 3 Month – 3yrs, 6 monthly visits (depends canopy cover devel.)	1	4.80	m <sup>2</sup>	4.80
Battering	Includes excavation, transport and disposal of soil for an eighth of the lower and middle banks = 2.5m <sup>3</sup> in total across the 30m wide waterway corridor, assuming depth of 1m. (I.e 2.5(W)*1(H)*1(D))	0.08	52.55	m <sup>3</sup>	4.20
Boulders	Strategically placed to aid bank stabilisation over an eighth of the lower and middle banks = 2.5m <sup>3</sup> in total across the 30m wide waterway corridor, assuming depth of 1m. (I.e 2.5(W)*1(H)*1(D))	0.08	57.00	m <sup>3</sup>	4.56
<b>TOTAL</b>					<b>\$69.31</b>

Core waterway corridor - supplementary planting = 50% of the Core waterway corridor - total planting cost =	33.08
Inner supplementary planting (half of the Inner Full Rehabilitation cost)	34.65

## Appendix C4b OVERLAND FLOW DRAINAGE EASEMENTS

### Drainage Easements (Local)

Easement Node	Stage	Catchment	Total Area (Ha)	Land valuation	Rate (m <sup>2</sup> )	Total cost 2006 (\$)
3/1006	1	1	0.202	Low	20.000	40,400
2/1007	1	1	0.230	Low	20.000	46,000
2/2007	2	A	0.056	Low	20.000	11,200
2/2008	2	A	0.158	Low	20.000	31,600
2/2011	2	A	0.117	Low	20.000	23,400
2/2012	2	A	0.133	Low	20.000	26,600
3/2017	2	A	0.188	Low	20.000	37,600
8/2019	2	A	0.710	Low	20.000	142,000
5/5033	2	A	1.067	Low	20.000	213,400
11/6026	2	6	0.014	Medium	70.000	9,800
<b>Total</b>			<b>2.875</b>			<b>582,000</b>

## Appendix C5 Major Culvert Detailed Costs

### Culvert Estimate for Q50 Cross Drainage + Stream Mgt

Summary of Level 1 Estimates

All costs are in 2006 dollars.

1. CROSSING 1A	
<ul style="list-style-type: none"> <li>• 2/3600x2100 plus 1/2400x1800 box culverts x 27.1 m long</li> <li>• Create fauna crossing by filling in sides of outer culverts (450 h x 1000 w min.)</li> <li>• Create stepped base slab for low flow under 1 culvert if necessary.</li> <li>• Allow for staged construction</li> <li>• Allow for management of traffic and pedestrians during construction</li> <li>• Allow for some relocation of local services</li> <li>• Allow for environmental management plans and testing for acid sulphate soils and fire ants</li> <li>• Allow for demolition of existing pipes</li> <li>• Allow for site rehabilitation after construction</li> </ul>	
Furniture in culverts, fences, Koala poles, mound, gravel and signage:	\$28,000
Design, Approvals and Construction Administration:	\$224,000
Construction:	\$828,600
<b>TOTAL=</b>	<b>\$1,080,600</b>

2. CROSSING 1B	
<ul style="list-style-type: none"> <li>• 2/3600x2100 plus 1/3600x1800 box culverts x 20.74 m long</li> <li>• Create fauna crossing by filling in sides of outer culverts (450 h x 1000 w min.)</li> <li>• Create stepped base slab for low flow under 1 culvert if necessary.</li> <li>• Allow for management of traffic and pedestrians during construction</li> <li>• Allow for environmental management plans and testing for acid sulphate soils and fire ants</li> <li>• Allow for site rehabilitation after construction</li> </ul>	
Furniture in culverts, fences, Koala poles, mound, gravel and signage:	\$28,000
Design, Approvals and Construction Administration:	\$168,300
Construction:	\$605,300
<b>TOTAL=</b>	<b>\$801,600</b>

3. CROSSING 1C	
<ul style="list-style-type: none"> <li>• 2/3000x2100 plus 2/3000x1800 plus 1/2400x1800 box culverts x 30.5 m long</li> <li>• Create fauna crossing by filling in sides of outer culverts (450 h x 1000 w min.)</li> <li>• Create stepped base slab for low flow under 1 culvert if necessary.</li> <li>• Allow for environmental management plans and testing for acid sulphate soils and fire ants</li> <li>• Allow for site rehabilitation after construction</li> </ul>	
Furniture in culverts, fences, Koala poles, mound, gravel and signage:	\$28,000
Design, Approvals and Construction Administration:	\$281,000
Construction:	\$1,054,700
<b>TOTAL=</b>	<b>\$1,363,700</b>

13. CROSSING 1H	
<ul style="list-style-type: none"> <li>• 2/3300x2100 plus 1/2400x1800 box culverts x 31.72 m long</li> <li>• Create fauna crossing by filling in sides of outer culverts (450 h x 1000 w min.)</li> <li>• Create stepped base slab for low flow under 1 culvert if necessary.</li> <li>• Allow for environmental management plans and testing for acid sulphate soils and fire ants</li> <li>• Allow for site rehabilitation after construction</li> </ul>	
Furniture in culverts, fences, Koala poles, mound, gravel and signage:	\$28,000
Design, Approvals and Construction Administration:	\$204,500
Construction:	\$749,800
<b>TOTAL=</b>	<b>\$982,300</b>

6. CROSSING 2B	
<ul style="list-style-type: none"> <li>• 2/3600x2100 plus 3/3000x1800 box culverts x 41.9 m long</li> <li>• Create fauna crossing by filling in sides outer culverts (450 h x 1000 w min.)</li> <li>• Create stepped base slab for low flow under 1 culvert if necessary.</li> <li>• Allow for environmental management plans and testing for acid sulphate soils and fire ants</li> <li>• Allow for site rehabilitation after construction</li> </ul>	
Furniture in culverts, fences, Koala poles, mound, gravel and signage:	\$28,000
Design, Approvals and Construction Administration:	\$428,000
Construction:	\$1,643,800
<b>TOTAL=</b>	<b>\$2,099,800</b>

7. CROSSING 2C	
<ul style="list-style-type: none"> <li>• 2/3300x2100 plus 3/3300x1800 plus 1/2400x1800 box culverts x 50 m long</li> <li>• Create fauna crossing by filling in sides of outer culverts (450 h x 1000 w min.)</li> <li>• Create stepped base slab for low flow under 1 culvert if necessary.</li> <li>• Allow for staged construction</li> <li>• Allow for management of traffic and pedestrians during construction</li> <li>• Allow for some relocation of local services</li> <li>• Allow for environmental management plans and testing for acid sulphate soils and fire ants</li> <li>• Allow for demolition of existing pipes</li> <li>• Allow for site rehabilitation after construction</li> </ul>	
Furniture in culverts, fences, Koala poles, mound, gravel and signage:	\$28,000
Design, Approvals and Construction Administration:	\$768,300
Construction:	\$2,997,400
<b>TOTAL=</b>	<b>\$3,791,700</b>

8. CROSSING 2D	
<ul style="list-style-type: none"> <li>• 2/3300x2100 plus 2/3300x1800 plus 1/2400x1800 box culverts x 44.35 m long</li> <li>• Create fauna crossing by filling in sides of outer culverts (450 h x 1000 w min.)</li> <li>• Create stepped base slab for low flow under 1 culvert if necessary.</li> <li>• Allow for environmental management plans and testing for acid sulphate soils and fire ants</li> <li>• Allow for site rehabilitation after construction</li> </ul>	
Furniture in culverts, fences, Koala poles, mound, gravel and signage:	\$28,000
Design, Approvals and Construction Administration:	\$433,200
Construction:	\$1,655,000
<b>TOTAL=</b>	<b>\$2,116,200</b>

**9. CROSSING 3A**

- 2/3600x2100 plus 2/2700x1800 box culverts x 48.8 m long
- Create fauna crossing by filling in sides of outer culverts (450 h x 1000 w min.)
- Create stepped base slab for low flow under 1 culvert if necessary.
- Allow for environmental management plans and testing for acid sulphate soils and fire ants
- Allow for site rehabilitation after construction

Furniture in culverts, fences, Koala poles, mound, gravel and signage: \$28,000  
 Design, Approvals and Construction Administration: \$403,000  
 Construction: \$1,544,700  
**TOTAL= \$1,975,700**

**11. CROSSING 4B**

- 2/3600x2100 plus 5/3600x1800 box culverts x 40.26 m long (added to ext'g 3/2400x1800 box culverts)
- Create fauna crossing by filling in sides of outer culverts (450 h x 1000 w min.)
- Can fill in sides/steps in existing culverts to create a low flow channel if necessary
- Allow for staged construction
- Allow for management of traffic and pedestrians during construction
- Allow for some relocation of local services
- Allow for environmental management plans and testing for acid sulphate soils and fire ants
- Allow for site rehabilitation after construction

Furniture in culverts, fences, Koala poles, mound, gravel and signage: \$28,000  
 Design, Approvals and Construction Administration: \$991,500  
 Construction: \$3,898,200  
**TOTAL= \$4,917,700**

**12. CROSSING 4C**

- 1/1210x2100 box culvert x 50 m long (added to ext'g 2/3000x2400 box culverts)
- Create fauna crossing by setting base of new culvert 300mm higher than existing box culverts.
- Can also fill in sides/steps in existing culverts to create a low flow channel if necessary
- Allow for staged construction
- Allow for management of traffic and pedestrians during construction
- Allow for some relocation of local services
- Allow for environmental management plans and testing for acid sulphate soils and fire ants
- Allow for site rehabilitation after construction

Furniture in culverts, fences, Koala poles, mound, gravel and signage: \$28,000  
 Design, Approvals and Construction Administration: \$105,700  
 Construction: \$354,800  
**TOTAL= \$488,500**

**Rochedale ICP Approx Costing of Culverts Under Pacific Motorway and Gateway Motorway (2006\$)**

ANCILLARY ITEMS CAPITAL	Culvert 101		Culvert 201		Culvert 601		Culvert 602 & 603		
	Unit	Rate	Unit	Rate	Unit	Rate	Unit	Rate	
RD3 Est Major Drainage works GT \$200,000	RD3	EA	1	85,990.91	1	1.00	1	1.00	
EMP1 Compliance with EMP - Site Specific	EMP1	EA	1	20,000.00	1	20,000.00	1	20,000.00	
ERRS2 Provision for Traffic Minor	ERRS2	EA	1	283.80	1	283.80	1	283.80	
ERRS3 Provision for Traffic Major	ERRS3	EA	1	30,000.00	1	30,000.00	1	30,000.00	
ERRS8 Locate Services - Electronic	ERRS8	HR	1	5,000.00	1	5,000.00	1	5,000.00	
ERRS10 Locate Services - Vacuum Excavation	ERRS10	HR	8	250.40	8	250.40	8	250.40	
ERRS22 Use Traffic Controller Week Day	ERRS22	HR	2500	41.11	2500	41.11	2500	41.11	
ERRS15 Service Alter Water	ERRS15	EA	1	1.00	1	1.00	1	1.00	
ERRS16 Service Alter Sewerage	ERRS16	EA	1	1.00	1	1.00	1	1.00	
ERRS11 Service Alter ENERGEX Underground	ERRS11	EA	1	1.00	1	1.00	1	1.00	
ERRS12 Service Alter ENERGEX Overhead Lighting	ERRS12	EA	1	60,000.00	1	60,000.00	1	60,000.00	
ERRS13 Service Alter Telstra/Optus	ERRS13	EA	1	20,000.00	1	20,000.00	1	20,000.00	
ERRS14 Service Alter Gas	ERRS14	EA	1	1.00	1	1.00	1	1.00	
ERRS19 Service Alter Other	ERRS19	EA	1	1.00	1	1.00	1	1.00	
L&E Misc. Landscape inc new sites	4021093	EA	1	10,000.00	1	10,000.00	1	10,000.00	
<b>Pipes and Culverts</b>									
SW10 E S L and J 750mm dia Pipes	SW10	M							
SW11 E S L and J 825mm dia Pipes	SW11	M							
SW12 E S L and J 900mm dia Pipes	SW12	M							
SW13 E S L and J 1050mm dia Pipes	SW13	M							
SW14 E S L and J 1200mm dia Pipes	SW14	M							
Supply only 1350 dia Pipes Class 3	SW15	M	165	292.82					
SW16 E S L and J 1500mm dia Pipes	SW16	M							
SW17 E S L and J 1650mm dia Pipes	SW17	M							
SW18 E S L and J 1800mm dia Pipes	SW18	M							
MG2 Supply only 1800 x 750 RCBC	SW19	M					65	617.13	
MG2 Supply only 3000 x 1800 RCBC	SW20	M			110	1371.85			
MG2 Supply only 3600 x 2400 RCBC	MG2	EA	120	1883.8					
MG2 Supply only " " " RCBC	MG3	EA							
<b>ANCILLARY PIPE TRENCH</b>									
EED4 Extra for rock in trench	EED4	M3		151.9		151.90		151.90	
EEG1 Extra cartage of all spoil GT 7Km	EEG1	M3KM	5011.875	1.23	6,164.81	15552	1.23	19,128.96	
SD1 Inlets and Outlets & Scour Protection	GD1	EA	2	30,000.00	2	45,000.00	2	40,000.00	
MG2 Misc. Pipe Jacking	MG2	EA	1	267,300.00	1	518,400.00	1	396,000.00	
MG3 Misc. Jacking / Receiving Pile	MG3	EA	2	15,000.00	2	20,000.00	2	18,000.00	
MG4 Miscellaneous General	MG4	EA	1	1.00	1	1.00	1	1.00	
Assumes only 2 headwalls required									
Sub Total (Excluding Establishment)				659,908.11		1,143,363.16		823,641.00	
Sub Total (Including Establishment)				725,898.92		1,257,699.48		393,261.70	
Contingency Percent	%	20	145,179.78	%	251,539.90	%	203,201.02	%	78,652.34
<b>Total</b>				<b>871,078.70</b>		<b>1,509,239.37</b>		<b>1,219,206.12</b>	

(2006)

## Appendix C6 Major Culvert Detailed Costs

infrastructure required to service the Rochedale development.

This spreadsheet contains a summary of cost estimates for the waterway

The following should be noted.

- All estimates are in 2006 dollars unless otherwise indicated
- Unit rates and costs shown in this spreadsheet are total including all factors, contingency and indirect costs
- The calculation of charges has been undertaken on the basis of six discrete **Charge Areas** and the infrastructure required to be constructed within each
- The timing of construction of infrastructure is indicated by **Stages**. Each stage is a 5 year period, and infrastructure will be required some time within the period.
- For the purposes of calculating NPVs, it is assumed that infrastructure within each stage is built in the middle year. Staging is as follows:

Stage	Period	Year*	NPV%	Base Year	ICU value 2006-07\$
1	2007-2011	2009	6.00%	2006	1.42
2	2012-2016	2014			
3	2017-2021	2019			

\* Assumed year of construction for NPV purposes.

For the purposes of calculating land values, the following land rates are used

Land valuation rate	\$/ha	\$/m2
Core waterway corridor - priv:	\$140,000	\$14
Core waterway corridor - publ	\$280,000	\$28
Fringe waterway corridor - pu	\$800,000	\$80

Note: The value of land required for waterway fringe is based on potential land use if the land had not been required for public infrastructure. For the purposes of calculating the total cost of acquisition of land required for waterway fringe, an average value \$80/m2 was adopted.

Appendix C7 Sewerage Infrastructure

**SEWERAGE INFRASTRUCTURE**

**COLLECTION SYSTEM**

ID	Description	Stage	Length (m)	Nominal Diameter (mm)	Internal Diameter (mm)	Minimum Grade Required	Tunnel Boring Assumed?	Approx. Average Depth	Unit Rate (2006-07 \$/m)	Direct Construction Cost (2006-07 \$)	Indirect Costs 23% (2006-07 \$)	Contingency 20% (2006-07 \$)	Total Construction Cost (2006-07 \$)	Land Acquisition Cost (2006-07 \$)	Total Cost (2006-07 \$)	NPV of Total Cost (2006-07 \$)	
RDS-PS1	Prebble St PS (99 L/s @ approx. 17 m head)	1							-	512,176	117,800	125,995	755,971	7,200	763,171	640,773	
RDS-RM1	Prebble St PS Rising Main	1	1490	250 + 355	192 + 273				665.83	992,084	228,179	244,053	1,464,316	-	1,464,316	1,229,468	
RDS-OF1	Overflow from Prebble St PS	1	663	500	452	1 in 280		4.1	849.93	563,507	129,607	138,623	831,736	-	831,736	698,341	
RDS-NS1	NuSewer 1	1	13	500	452	1 in 280		5.4	923.99	12,012	2,763	2,955	17,730	-	17,730	14,886	
RDS-NS2	NuSewer 2	1	1111	400	361	1 in 500		3.3	627.76	697,443	160,412	171,571	1,029,425	-	1,029,425	864,325	
RDS-NS3	NuSewer 3	1	825	250	226	1 in 300		4.7	285.16	235,255	54,109	57,873	347,236	-	347,236	291,546	
RDS-NS5	NuSewer 5	1	485	250	226	1 in 170		1.4	191.03	92,648	21,309	22,792	136,749	-	136,749	114,817	
RDS-NS6	NuSewer 6	1	114	250	226	1 in 280		2	211.79	24,144	5,553	5,939	35,637	-	35,637	29,921	
RDS-NS7	NuSewer 7	1	1111	250	226	1 in 300		1.4	191.03	212,232	48,813	52,209	313,254	-	313,254	263,014	
RDS-NS8	NuSewer 8	1	97	500	452	1 in 600	Yes	2.9	1351.04	131,051	30,142	32,238	193,431	-	193,431	162,408	
RDS-NS9	NuSewer 9	1	466	500	452	1 in 600		4.4	849.93	396,070	91,096	97,433	584,599	-	584,599	490,840	
RDS-NS10	NuSewer 10	1	372	500	452	1 in 700	Yes	14.6	1351.04	502,585	115,595	123,636	741,816	-	741,816	622,843	
RDS-NS11	NuSewer 11	1	660	500	452	1 in 700		3.4	815.33	538,117	123,767	132,377	794,260	-	794,260	666,876	
RDS-NS18	NuSewer 18	1	595	250	226	1 in 300		1.4	191.03	113,661	26,142	27,961	167,764	-	167,764	140,858	
RDS-NS4	NuSewer 4	2	179	250	226	1 in 300		3.3	236.02	42,247	9,717	10,393	62,356	-	62,356	39,123	
RDS-NS12	NuSewer 12	2	107	400	361	1 in 400		2.9	627.76	67,170	15,449	16,524	99,144	-	99,144	62,204	
RDS-NS13	NuSewer 13	2	81	400	361	1 in 400	Yes	3	1285.98	104,164	23,958	25,624	153,746	-	153,746	96,462	
RDS-NS14	NuSewer 14	2	291	400	361	1 in 400		3.6	662.37	192,749	44,332	47,416	284,498	-	284,498	178,497	
RDS-NS15	NuSewer 15	2	374	315	285	1 in 140		3.6	460.96	172,398	39,652	42,410	254,460	-	254,460	159,651	
RDS-NS16	NuSewer 16	2	674	315	285	1 in 320		2.1	392.44	264,503	60,836	65,068	390,406	-	390,406	244,946	
RDS-NS17	NuSewer 17	2	234	250	226	1 in 160		1.7	211.79	49,559	11,399	12,192	73,149	-	73,149	45,895	
RDS-NS19	NuSewer 19	2	123	250	226	1 in 300		1.4	191.03	23,496	5,404	5,780	34,681	-	34,681	21,759	
RDS-PS2	Priestdale Rd PS (22 L/s @ approx. 26 m head)	3							-	371,673	85,485	91,432	548,590	7,200	555,790	260,576	
RDS-RM2	Priestdale Rd PS Rising Main	3	810	125 + 200	96 + 154				413.89	335,254	77,108	82,472	494,834	-	494,834	231,998	
RDS-OF2	Overflow from Priestdale Rd PS	3	89	250	226	1 in 180	Yes	3.5	771.72	68,683	15,797	16,896	101,377	-	101,377	47,529	
RDS-NS20	NuSewer 20	3	10	250	226	1 in 180		3.9	256.09	2,561	589	630	3,780	-	3,780	1,772	
RDS-NS21	NuSewer 21	3	626	250	226	1 in 300		2.6	236.02	147,746	33,982	36,346	218,073	-	218,073	102,241	
RDS-NS22	NuSewer 22	3	78	250	226	1 in 300	Yes	2.5	771.72	60,194	13,845	14,808	88,847	-	88,847	41,655	
RDS-NS23	NuSewer 23	3	417	250	226	1 in 300		1.9	211.79	88,317	20,313	21,726	130,356	-	130,356	61,116	
<b>TOTAL</b>															<b>10,366,621</b>	<b>7,826,344</b>	
<b>Stage 1 Total</b>		1														<b>7,421,124</b>	<b>6,230,919</b>
<b>Stage 2 Total</b>		2														<b>1,352,440</b>	<b>848,537</b>
<b>Stage 3 Total</b>		3														<b>1,593,057</b>	<b>746,887</b>

**SEWERAGE INFRASTRUCTURE**

**TREATMENT SYSTEM**

ID	Description	Stage	Construction Year	Unit Rate (2006-07 \$/m)	Direct Construction Cost (2006-07 \$)	Indirect Costs 27.2% (2006-07 \$)	Contingency 30% (2006-07 \$)	Total Construction Cost (2006-07 \$)	Land Acquisition Cost (2006-07 \$)	Total Cost (2006-07 \$)	NPV of Total Cost (2006-07 \$)		
RDS-WRP1	Water Reclamation Plant Stage 1 (10,000 EP*)	1	2008	-	7,978,181	2,170,065	3,044,474	13,192,719	72,000	13,264,719	11,805,553		
RDS-WRP2	Water Reclamation Plant Stage 2 (20,000 EP*) *Cumulative Capacity	2	2013	-	4,456,142	1,212,071	1,700,464	7,368,676	-	7,368,676	4,900,591		
<b>TOTAL</b>										<b>20,633,396</b>	<b>16,706,144</b>		
<b>Stage 1 Total</b>		1										<b>13,264,719</b>	<b>11,805,553</b>
<b>Stage 2 Total</b>		2										<b>7,368,676</b>	<b>4,900,591</b>
<b>Stage 3 Total</b>		3										<b>0</b>	<b>0</b>

**Appendix C8 Non-Drinking Water Infrastructure**

NON-DRINKING WATER INFRASTRUCTURE													DISTRIBUTION SYSTEM		
ID	Description	Stage	Length (m)	Nominal Diameter (mm)	Internal Diameter (mm)	Unit Rate (2006-07 \$/m)	Direct Construction Cost (2006-07 \$)	Indirect Costs 23% (2006-07 \$)	Contingency 20% (2006-07 \$)	Total Construction Cost (2006-07 \$)	Land Acquisition Cost (2006-07 \$)	Total Cost (2006-07 \$)	NPV of Total Cost (2006-07 \$)		
RDN-1.01	491 m of DN 250 in new east-west road near town centre from Gardner Road towards Rochedale Road	1	491	250	192	293.46	144,090	33,141	35,446	212,677	-	212,677	178,568		
RDN-1.02	574 m of DN 315 in new east-west road near town centre from Rochedale Road towards Gardner Road	1	574	315	242	391.05	224,464	51,627	55,218	331,309	-	331,309	278,174		
RDN-1.03	647 m of DN 250 in new extension of Ford Road from Rochedale Road towards Gardner Road	1	647	250	192	293.46	189,870	43,670	46,708	280,249	-	280,249	235,302		
RDN-1.04	1842 m of DN 400 in Gardner Road between Prebble Street and Miles Plating Road	1	1842	400	308	566.16	1,042,870	239,860	256,546	1,539,276	-	1,539,276	1,292,406		
RDN-1.05	1169 m of DN 450 in Miles Plating Road between Gardner Road and the Reservoir near Rochedale Road	1	1169	450	346	660.98	772,690	177,719	190,082	1,140,490	-	1,140,490	957,577		
RDN-1.06	1350 m of DN 250 in Gardner Road between the Landfill entrance and Mt Gravatt-Capalaba Road	1	1350	250	192	293.46	396,175	91,120	97,459	584,754	-	584,754	490,971		
RDN-1.07	1095 m of DN 250 in Rochedale Road between the Booster Pump Station near Miles Plating Road and Ford Road	1	1095	250	192	293.46	321,342	73,909	79,050	474,300	-	474,300	398,232		
RDN-1.08	2158 m of DN 315 in Rochedale Road between Miles Plating Road and Fairley Road	1	2158	315	242	391.05	843,892	194,095	207,598	1,245,585	-	1,245,585	1,045,817		
RDN-1.09	575 m of DN 315 Gardner Road between the Landfill entrance and Prebble Street	1	575	315	242	391.05	224,855	51,717	55,314	331,887	-	331,887	278,658		
RDN-1.10	270 m of DN 315 in Prebble Street from Gardner Road towards Kyeema Street	1	270	315	242	391.05	105,584	24,284	25,974	155,842	-	155,842	130,848		
RDN-1.11	403 m of DN 400 in the Landfill entrance road between the Water Reclamation Plant and Gardner Road	1	403	400	308	566.16	228,163	52,478	56,128	336,769	-	336,769	282,758		
RDN-1.12	469 m of DN 250 in new extension of Prebble Street from Rochedale Road towards Gardner Road	1	469	250	192	293.46	137,634	31,656	33,858	203,148	-	203,148	170,567		
RDN-1.13	Booster Pump Station (42 L/s @ 70 m) at the Water Reclamation Plant in the Landfill	1	-	-	-	-	427,833	98,402	105,247	631,482	-	631,482	530,205		
RDN-1.14	Booster Pump (150 L/s @ 25 m) at the reservoir site near the corner of Rochedale Road and Miles Plating Road	1	-	-	-	-	501,015	115,233	123,250	739,498	-	739,498	620,897		
RDN-1.15	6.85 ML Reservoir near the corner of Rochedale Road and Miles Plating Road	1	-	-	-	-	1,339,295	308,038	329,467	1,976,799	280,500	2,257,299	1,895,272		
RDN-2.01	611 m of DN 315 in Miles Plating Road between Gardner Road and School Road	2	611	315	242	391.05	238,933	54,955	58,778	352,666	-	352,666	221,267		
RDN-2.02	1453 m of DN 250 in Ford Road between Rochedale Road and Grieve Road, and in Grieve Road from Ford Road towards Pilling Road (uniform)	2	1453	250	192	293.46	426,401	98,072	104,895	629,369	-	629,369	394,874		
RDN-2.03	1592 m of DN 315 in Miles Plating Road between School Road and McKechnie Drive	2	1592	315	242	391.05	622,556	143,188	153,149	918,893	-	918,893	576,525		
RDN-2.04	312 m of DN 280 in McKechnie Drive between Miles Plating Road and Electronics Street	2	312	280	215	339.14	105,813	24,337	26,030	156,180	-	156,180	97,989		
RDN-3.01	942 m of DN 250 in new extension of Gardner Road between Priestdale Road and Underwood Road	3	942	250	192	293.46	276,442	63,582	68,005	408,028	-	408,028	191,300		
RDN-3.02	778 m of DN 250 in new extension of Gardner Road between Miles Plating Road and Priestdale Road	3	778	250	192	293.46	228,314	52,512	56,165	336,992	-	336,992	157,995		
RDN-3.03	291 m of DN 250 in Rochedale Road from south of Priestdale Road towards Underwood Road	3	291	250	192	293.46	85,398	19,641	21,008	126,047	-	126,047	59,096		
RDN-3.04	1174 m of DN 315 in Rochedale Road from Miles Plating Road to south of Priestdale Road	3	1174	315	242	391.05	459,096	105,592	112,938	677,626	-	677,626	317,698		
<b>TOTAL</b>												<b>14,070,366</b>	<b>10,802,994</b>		
<b>Stage 1 Total</b>		<b>1</b>										<b>10,464,566</b>	<b>8,786,252</b>		
<b>Stage 2 Total</b>		<b>2</b>										<b>2,057,107</b>	<b>1,290,654</b>		
<b>Stage 3 Total</b>		<b>3</b>										<b>1,548,693</b>	<b>726,088</b>		

NON-DRINKING WATER INFRASTRUCTURE													GROUNDWATER EXTRACTION SYSTEM		
ID	Description	Stage	Yield (L/s)	Unit Rate (2006-07 \$/m)	Direct Construction Cost (2006-07 \$)	Indirect Costs 23% (2006-07 \$)	Contingency 20% (2006-07 \$)	Total Construction Cost (2006-07 \$)	Land Acquisition Cost (2006-07 \$)	Total Cost (2006-07 \$)	NPV of Total Cost (2006-07 \$)				
RDN-HG1	Hydrogeological Investigation	1	-	-	249,167	57,308	61,295	367,770	-	367,770	308,778				
RDN-PB1	Groundwater Production Bore 1 (upgrade existing bore KBR137)	1	3.2	-	13,843	3,184	3,405	20,432	2,868	23,299	19,563				
RDN-PB2	Groundwater Production Bore 2 (upgrade existing bore KBR138)	1	3.2	-	13,843	3,184	3,405	20,432	2,868	23,299	19,563				
RDN-PB3	Groundwater Production Bore 3 (upgrade existing bore KBR149)	1	3.2	-	13,843	3,184	3,405	20,432	2,868	23,299	19,563				
RDN-PB4	Groundwater Production Bore 4 (upgrade existing bore KBR175)	1	3.2	-	13,843	3,184	3,405	20,432	2,868	23,299	19,563				
RDN-PB5	Groundwater Production Bore 5 (upgrade existing bore KBR203)	1	3.2	-	13,843	3,184	3,405	20,432	2,868	23,299	19,563				
RDN-PB6	Groundwater Production Bore 6 (upgrade existing bore KBR174)	1	3.8	-	13,843	3,184	3,405	20,432	2,868	23,299	19,563				
RDN-PB7	Groundwater Production Bore 7 (upgrade existing bore KBR136)	1	6.3	-	13,843	3,184	3,405	20,432	2,868	23,299	19,563				
RDN-PB8	Groundwater Production Bore 8 (upgrade existing bore KBR202)	1	6.3	-	13,843	3,184	3,405	20,432	2,868	23,299	19,563				
RDN-PB9	Groundwater Production Bore 9 (upgrade existing bore KBR132)	1	6.6	-	13,843	3,184	3,405	20,432	2,868	23,299	19,563				
RDN-PB10	Groundwater Production Bore 10 (upgrade existing bore KBR207)	1	7.6	-	13,843	3,184	3,405	20,432	2,868	23,299	19,563				
RDN-PB11	Groundwater Production Bore 11 (upgrade existing bore KBR208)	1	7.6	-	13,843	3,184	3,405	20,432	2,868	23,299	19,563				
RDN-MW1	Groundwater Monitoring Well 1 (new bore)	1	-	-	4,499	1,035	1,107	6,640	4,850	11,490	9,647				
RDN-MW2	Groundwater Monitoring Well 2 (new bore)	1	-	-	4,499	1,035	1,107	6,640	4,850	11,490	9,647				
RDN-MW3	Groundwater Monitoring Well 3 (new bore)	1	-	-	4,499	1,035	1,107	6,640	4,850	11,490	9,647				
RDN-MW4	Groundwater Monitoring Well 4 (new bore)	1	-	-	4,499	1,035	1,107	6,640	4,850	11,490	9,647				
RDN-PB12	Groundwater Production Bore 12 (upgrade existing bore KBR170)	2	5.7	-	13,843	3,184	3,405	20,432	2,868	23,299	14,618				
RDN-PB13	Groundwater Production Bore 13 (upgrade existing bore KBR186)	2	5.7	-	13,843	3,184	3,405	20,432	2,868	23,299	14,618				
RDN-PB14	Groundwater Production Bore 14 (upgrade existing bore KBR188)	2	5.7	-	13,843	3,184	3,405	20,432	2,868	23,299	14,618				
RDN-PB15	Groundwater Production Bore 15 (upgrade existing bore KBR63)	2	4.4	-	13,843	3,184	3,405	20,432	2,868	23,299	14,618				
RDN-PB16	Groundwater Production Bore 16 (upgrade existing bore KBR204)	2	7.6	-	13,843	3,184	3,405	20,432	2,868	23,299	14,618				
RDN-PB17	Groundwater Production Bore 17 (upgrade existing bore KBR168)	2	8.8	-	13,843	3,184	3,405	20,432	2,868	23,299	14,618				
RDN-PB18	Groundwater Production Bore 18 (upgrade existing bore KBR80)	2	15.2	-	13,843	3,184	3,405	20,432	2,868	23,299	14,618				
RDN-MW5	Groundwater Monitoring Well 5 (new bore)	2	-	-	4,499	1,035	1,107	6,640	4,850	11,490	7,209				
RDN-MW6	Groundwater Monitoring Well 6 (new bore)	2	-	-	4,499	1,035	1,107	6,640	4,850	11,490	7,209				
RDN-MW7	Groundwater Monitoring Well 7 (new bore)	2	-	-	4,499	1,035	1,107	6,640	4,850	11,490	7,209				
RDN-PB19	Groundwater Production Bore 19 (upgrade existing bore KBR77)	3	5.1	-	13,843	3,184	3,405	20,432	2,868	23,299	10,924				
RDN-PB20	Groundwater Production Bore 20 (upgrade existing bore KBR74)	3	5.7	-	13,843	3,184	3,405	20,432	2,868	23,299	10,924				
RDN-PB21	Groundwater Production Bore 21 (upgrade existing bore KBR71)	3	3.2	-	13,843	3,184	3,405	20,432	2,868	23,299	10,924				
RDN-PB22	Groundwater Production Bore 22 (upgrade existing bore KBR72)	3	3.3	-	13,843	3,184	3,405	20,432	2,868	23,299	10,924				
RDN-PB23	Groundwater Production Bore 23 (upgrade existing bore KBR187)	3	3.8	-	13,843	3,184	3,405	20,432	2,868	23,299	10,924				
RDN-PB24	Groundwater Production Bore 24 (upgrade existing bore KBR62)	3	3.8	-	13,843	3,184	3,405	20,432	2,868	23,299	10,924				
RDN-PB25	Groundwater Production Bore 25 (upgrade existing bore KBR64)	3	3.8	-	13,843	3,184	3,405	20,432	2,868	23,299	10,924				
RDN-PB26	Groundwater Production Bore 26 (upgrade existing bore KBR63)	3	3.8	-	13,843	3,184	3,405	20,432	2,868	23,299	10,924				
RDN-PB27	Groundwater Production Bore 27 (upgrade existing bore KBR190)	3	2.0	-	13,843	3,184	3,405	20,432	2,868	23,299	10,924				
RDN-PB28	Groundwater Production Bore 28 (upgrade existing bore KBR134)	3	2.5	-	13,843	3,184	3,405	20,432	2,868	23,299	10,924				
RDN-PB29	Groundwater Production Bore 29 (upgrade existing bore KBR147)	3	2.5	-	13,843	3,184	3,405	20,432	2,868	23,299	10,924				
RDN-PB30	Groundwater Production Bore 30 (upgrade existing bore KBR67)	3	2.9	-	13,843	3,184	3,405	20,432	2,868	23,299	10,924				
RDN-PB31	Groundwater Production Bore 31 (upgrade existing bore KBR68)	3	2.5	-	13,843	3,184	3,405	20,432	2,868	23,299	10,924				
RDN-PB32	Groundwater Production Bore 32 (upgrade existing bore KBR69)	3	2.8	-	13,843	3,184	3,405	20,432	2,868	23,299	10,924				
RDN-PB33	Groundwater Production Bore 33 (upgrade existing bore KBR73)	3	1.5	-	13,843	3,184	3,405	20,432	2,868	23,299	10,924				
RDN-PB34	Groundwater Production Bore 34 (upgrade existing bore KBR75)	3	1.8	-	13,843	3,184	3,405	20,432	2,868	23,299	10,924				
RDN-MW8	Groundwater Monitoring Well 8 (new bore)	3	-	-	4,499	1,035	1,107	6,640	4,850	11,490	5,387				
RDN-MW9	Groundwater Monitoring Well 9 (new bore)	3	-	-	4,499	1,035	1,107	6,640	4,850	11,490	5,387				
RDN-MW10	Groundwater Monitoring Well 10 (new bore)	3	-	-	4,499	1,035	1,107	6,640	4,850	11,490	5,387				
<b>TOTAL</b>										<b>1,274,849</b>	<b>877,459</b>				
<b>Stage 1 Total</b>		<b>1</b>								<b>670,023</b>	<b>562,564</b>				
<b>Stage 2 Total</b>		<b>2</b>								<b>197,566</b>	<b>123,955</b>				
<b>Stage 3 Total</b>		<b>3</b>								<b>407,260</b>	<b>190,939</b>				

NON-DRINKING WATER INFRASTRUCTURE													DISCHARGE TO WATERWAYS OF EXCESS NDW		
ID	Description	Stage	No. of Discharge Locations	Discharge (L/s per Location)	Unit Rate (2006-07 \$/m)	Direct Construction Cost (2006-07 \$)	Indirect Costs 23% (2006-07 \$)	Contingency 20% (2006-07 \$)	Total Construction Cost (2006-07 \$)	Land Acquisition Cost (2006-07 \$)	Total Cost (2006-07 \$)	NPV of Total Cost (2006-07 \$)			
RDN-ED1	NDW wayway discharges with RC flow control valve and FM - Stage 1	1	6	5	20,764	124,583	28,654	30,647	183,885	-	183,885	154,393			

Appendix C9 Drinking Water Infrastructure

**DRINKING WATER INFRASTRUCTURE**

ID	Description	Stage	Length (m)	Nominal Diameter (mm)	Internal Diameter (mm)	Unit Rate (2006-07 \$/m)	Direct Construction Cost (2006-07 \$)	Indirect Costs (2006-07 \$)	Contingency 20% (2006-07 \$)	Total Construction Cost (2006-07 \$)	Land Acquisition Cost (2006-07 \$)	Total Cost (2006-07 \$)	NPV of Total Cost (2006-07 \$)
RDP-1.01	Booster (60 L/s @ 22 m) at the proposed reservoir site	1					287,560	66,139	70,740	424,439	-	424,439	356,367
RDP-1.02	3.6 ML Reservoir	1					900,842	207,194	221,607	1,329,643	187,000	1,516,643	1,273,403
RDP-1.03	51 m of DN450 between the booster and existing drinking water infrastructure	1	51	450	346	624.30	31,839	7,323	7,832	46,995	-	46,995	39,458
RDP-1.04	118 m of DN450 between the reservoir and existing drinking water infrastructure	1	118	450	346	624.30	73,667	16,944	18,122	108,733	-	108,733	91,294
RDP-1.05	3189 m of DN315 along Rochedale Rd duplicating the existing 150 mm main	1	3189	315	242	366.83	1,169,816	269,058	287,775	1,726,648	-	1,726,648	1,449,727
RDP-1.06	123 m of DN450 Bypassing the Mt Gravatt/Capalaba booster to enable the rezoning of some areas to Wellers Hill zone	1	123	450	346	624.30	76,789	17,661	18,890	113,341	-	113,341	95,163
RDP-1.07	1047 m of DN450 along Rochedale Rd duplicating the existing 150 mm main	1	1047	450	346	624.30	653,643	150,338	160,796	964,777	-	964,777	810,045
RDP-1.08	PRV Set to 86.5 mAHD to ensure excessive pressures are not experienced in the existing urban areas to the north of Mt Gravatt/Capalaba Rd	1					63,710	14,653	15,673	94,036	-	94,036	78,954
RDP-2.01	Booster (4 L/s @ 9 m) Replacing the Miles Platting Road Boosters	2					118,409	27,234	29,129	174,772	-	174,772	109,654
RDP-2.02	Booster (100 L/s @ 35 m) Replacing the Mt Gravatt/Capalaba Road Booster	2					324,562	74,649	79,842	479,054	-	479,054	300,564
<b>TOTAL</b>												<b>5,649,438</b>	<b>4,604,630</b>
<b>Stage 1 Total</b>		1										<b>4,995,611</b>	<b>4,194,412</b>
<b>Stage 2 Total</b>		2										<b>653,826</b>	<b>410,219</b>
<b>Stage 3 Total</b>		3										<b>0</b>	<b>0</b>



## **Appendix C10 Approximate Land Areas Required For Water Supply and Sewerage Structures**

### **Sewage Pump Stations**

10 m x 10 m with 4 m wide access road

2 pump stations required

### **Water Reclamation Plant**

60 m x 30 m located within Landfill

Includes pumping station

Existing landfill access road used

### **Reservoir Site**

85 m x 55 m with 4 m wide access road

Includes both reservoirs (drinking & non-drinking) and booster stations

Located as close to the top of the hill as possible

### **Water Boosters**

Existing sites for Miles Platting Road and Mt Gravatt-Capalaba Road

boosters should be adequate

### **Groundwater Extraction Bores**

5 m x 5 m with 4 m wide access road

34 bores required

### **Groundwater Monitoring Bores**

5 m x 5 m with 4 m wide access road

10 bores required

## Appendix C11 ET Conversion Rates For Rochedale PSP

### Assumed Densities

LOCAL PLAN PRECINCT	ASSUMED DENSITIES (ET/ha)		
	Drinking Water	Non-Drinking Water	Sewerage
Very-low density residential (VLDR)	5.2	7.8	5.2
Low density residential (LDR)	14	14	14
Low-medium density residential (LMDR)	14.3	9.5	14.3
Mixed use (MU) in Town Centre	33.9	17	33.9
Mixed use (MU) not in Town Centre	27.1	13.6	27.1
Community uses (CU)	5.4	7.1	6.4
Parks (PK)	0	0	0
Town Centre (TC)	17.9	2.5	21.4
Neighbourhood Centre (NC)	8.9	2.5	10.7
Business Service Centre (BSC)	8.9	2.5	10.7
Business Park (BP)	8.9	2.5	10.7
Gateway Civic (GC)	17.9	2.5	21.4
State Service Centre (SSC)	5.4	1.5	6.4
Other	0	0	0

### Conversion Rates for Material Change of Use

TYPE OF DEVELOPMENT	UNIT OF MEASURE	ET CONVERSION RATE		
		Drinking Water	Non-Drinking Water	Sewerage
Detached dwelling	Dwelling	1	1	1
Single Unit Dwelling	Dwelling	0.8	0.8	0.8
Multi-unit dwelling in...				
VLDR or LDR area	Dwelling	0.8	0.8	0.8
LMDR area	Dwelling	0.71	0.47	0.71
MU or TC area	Dwelling	0.67	0.34	0.67
Non-residential building in...				
MU or TC area	m <sup>2</sup> of GFA	0.00119	0.00016	0.00142
CU area	m <sup>2</sup> of GFA	0.00108	0.00142	0.00128
NC or BSC area	m <sup>2</sup> of GFA	0.00111	0.00031	0.00133
BP area	m <sup>2</sup> of GFA	0.00178	0.00050	0.00214
GC area	m <sup>2</sup> of GFA	0.00149	0.00020	0.00178
SSC area	m <sup>2</sup> of GFA	0.00108	0.00030	0.00128

## Appendix C12 Staging Assumptions

### Percent Developed

The table below shows the percent of each *stage area* assumed to be developed in each *stage period*. For example, the Stage 1 area is assumed to be 80% developed in the Stage 1 period with a further 10% developed in the Stage 2 period and the final 10% developed in the Stage 3 period. The percentages have been set to give roughly equal numbers of ETs developed in each stage period.

Stage Area	Stage Period		
	Stage 1 2007-2011	Stage 2 2012-2016	Stage 3 2017-2021
Stage 1	80%	10%	10%
Stage 2	0%	70%	30%
Stage 3	0%	0%	100%

### ET PROJECTIONS

	Existing ET	Stage 1 ET	Stage 2 ET	Stage 3 ET	Future ET	Total ET	Future ET/Total ET	NPV of Future ET
Year applied	N/A	2009	2014	2019	N/A	N/A	N/A	N/A
<b>Sewerage</b>								
RDLE01 Charge Area	0	2277	2353	2321	6951	6951	100%	4476
RDLE02 Charge Area	0	45	6	6	56	56	100%	44
<b>Total in all Charge Areas</b>	0	2322	2358	2326	7007	7007	100%	4520
<b>Non-Drinking Water</b>	631	1765	1589	1688	5042	5673	89%	3270
<b>Drinking Water</b>								
Rochedale1 Charge Area	132	369	0	0	369	501	74%	310
Rochedale2 Charge Area	468	1809	1913	1766	5488	5956	92%	3547
Rochedale3 Charge Area	274	0	125	259	384	658	58%	200
<b>Total in all Charge Areas</b>	874	2178	2038	2025	6242	7115	88%	4057

## Appendix C13 Subsidy Scenario

SEWERAGE PSP RATES		SUBSIDY SCENARIO 1	
STATE SUBSIDIES APPLIED?	Yes	Charge Area	
Component		RDLE01	RDLE02
Collection System		1231 ICU/ET	2425 ICU/ET
Treatment System		1577 ICU/ET	1457 ICU/ET
PSP Preparation		5 ICU/ET	5 ICU/ET
<b>Total Charge Rate</b>		<b>2813 ICU/ET</b>	<b>3905 ICU/ET</b>
Subsidy Rate* (Subsidy only applies to the Water Reclamation Plant (WRP))		40%	

NON-DRINKING WATER PSP RATES	
STATE SUBSIDIES APPLIED?	No
Component	Charge Area
	RDLE-NDW
Distribution System	2068 ICU/ET
Groundwater Extraction System	168 ICU/ET
Excess NDW Discharge System	62 ICU/ET
PSP Preparation	5 ICU/ET
<b>Total Charge Rate</b>	<b>2302 ICU/ET</b>
Subsidy Rate* (Subsidy only applies to pipeline from WRP to storage reservoir)	
N/A	

DRINKING WATER PSP RATES		SUBSIDY SCENARIO 1		
SUBSIDY SCENARIO:		Charge Area		
Component		Rochedale1	Rochedale2	Rochedale3
Local Distribution System		727 ICUs/ET	914 ICUs/ET	865 ICUs/ET
Retail Shared/Bulk Distribution System		734 ICUs/ET	734 ICUs/ET	734 ICUs/ET
Treatment System		207 ICUs/ET	207 ICUs/ET	207 ICUs/ET
PSP Preparation		5 ICUs/ET	5 ICUs/ET	5 ICUs/ET
<b>Total Charge Rate</b>		<b>1673 ICU/ET</b>	<b>1860 ICU/ET</b>	<b>1811 ICU/ET</b>

## Appendix D1: Transport Cost Apportionment

Table D.1 Land Use Analysis for road and path charges

Local Plan Land Use Type	Stage 1	Stage 2	Stage 3	TOTAL
Very low density residential	0.00	32.87	0.00	32.87
Low density residential	132.32	81.79	49.30	263.41
Low-medium density residential	31.83	45.32	15.24	92.40
Mixed use in Town Centre	0.63	10.99	0.00	11.62
Mixed use not in Town Centre	0.02	1.39	4.98	6.37
Town Centre	0.00	5.72	0.00	5.72
Neighbourhood Centre	1.32	0.98	0.00	2.30
Business Centre	0.76	0.00	0.00	0.76
Business Park	49.88	11.31	0.00	61.19
Gateway Civic	0.01	8.70	5.64	14.35
State Service Centre	0.00	0.00	2.88	2.88
Community Use	0.00	22.21	15.48	37.67
<b>TOTAL</b>	<b>216.76</b>	<b>221.29</b>	<b>93.28</b>	<b>531.33</b>

Table D.2 Path Charge parameters

Path consumption by Rochdale users	100%
Total trips generated	18,069
Total infrastructure cost (2006 (£))	3,315,449
Cost per trip (2006 (£), NPV)	183

Table D.3 Path Charge calculation

Local Plan Land Use Type	Dwellings/ Ha	Assumed GFA rate: site area	Walk and cycle Trips per dwelling/ 100m <sup>2</sup> GFA	Total NPV Residential derived trips	Total NPV non-Residential derived trips	NPV Area per Land Use type (Ha)	TOTAL TRIPS (NPV)	Charge per composite trip (2006 (£))	Cost per total Ha of land use type (2006 (£))	Charge (2006 (£))/ Ha	Charge (2006 (£))/ Ha
Very low density residential	14	n/a	1.48	153	0	20.62	153	183	28,001	1,358	966
Low density residential	14	n/a	1.4	3,636	0	185.53	3,636	183	667,241	3,598	2,533
Low-medium density residential	20	n/a	1.02	1,271	0	62.31	1,271	183	233,231	3,743	2,636
Mixed use in Town Centre	40	1.65	1.75	364	643	7.43	1,007	183	184,813	24,886	17,525
Mixed use not in Town Centre	50	0.80	1.2	135	93	3.21	227	183	41,736	12,991	9,149
Town Centre	n/a	1.50	1.75	0	941	3.99	941	183	172,721	48,167	33,920
Neighbourhood Centre	n/a	0.80	2	0	276	1.72	276	183	50,595	29,359	20,675
Business Centre	n/a	0.80	2	0	102	0.64	102	183	18,708	29,359	20,675
Business Park	n/a	0.50	2	0	4,897	48.97	4,897	183	898,613	18,349	12,922
Gateway Civic	n/a	1.20	1.5	0	1,459	8.11	1,459	183	267,790	33,028	23,259
State Service Centre	n/a	0.50	1.5	0	94	1.26	94	183	17,299	13,762	9,691
Community Use	n/a	0.90	2.1	0	4,004	21.15	4,004	183	734,699	34,680	24,422
<b>TOTAL</b>							<b>18,069</b>				

Note: Charges are based on the infrastructure costs available on 18 December 2006 and exclude land acquisition costs

Table D.4 Path Charge

Local Plan Land Use Type	ICU/ Ha	ICU/ £t
Very low density residential	956	181
Low density residential	2,533	
Low-medium density residential	2,636	
Mixed use in Town Centre	17,525	
Mixed use not in Town Centre	9,149	
Town Centre	33,920	
Neighbourhood Centres	20,675	
Business Centre	20,675	
Business Park	12,922	
Gateway Civic	23,259	
State Service Centre	9,691	
Community Use	24,422	

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Table D.6 Road trips calculation

Local Plan Land Use Type	Development Stage (Ha)			Total (Ha)	Assumed Dwelling Rate/ Ha	Assumed Trips/ Dwelling
	1	2	3			
	2009	2014	2019			
Very low density residential	0.00	32.87	0.00	32.87	5	6.0
Low density residential	132.32	81.79	49.30	263.41	14	5.8
Low-medium density residential	31.83	45.32	15.24	92.40	20	4.1
Mixed use in Town Centre	0.63	10.99	0.00	11.62	40	3.9
Mixed use not in Town Centre	0.02	1.39	4.98	6.37	50	3.9
Town Centre	0.00	5.72	0.00	5.72	n/a	0.0
Neighbourhood Centres <sup>a</sup>	1.32	0.98	0.00	2.30	n/a	0.0
Business Centre <sup>b</sup>	0.76	0.00	0.00	0.76	n/a	0.0
Business Park	49.88	11.31	0.00	61.19	n/a	0.0
Gateway Civic	0.01	8.70	5.64	14.35	n/a	0.0
State Service Centre <sup>c</sup>	0.00	0.00	2.88	2.88	n/a	0.0
Community Use	0.00	22.21	15.48	37.67	n/a	0.0
<b>TOTAL</b>				<b>531.33</b>		

- Notes
- The NPV hectare rate has been overridden in calculations to reflect a maximum of 1Ha of development in this land use type (per draft Local Plan)
  - The NPV hectare rate has been overridden in calculations to reflect a maximum of 0.6 Ha of development in this land use type (per draft Local Plan)
  - The NPV hectare rate has been overridden in calculations to reflect a maximum of 0.6 Ha of development in this land use type (per draft Local Plan)
  - Nominal assumption of GFA rate: site area only
  - A low value of GFA rate: site area was used, based on a range of 0.9 to 1.4 in the draft Local Plan for similar uses
  - Charges are based on the infrastructure costs available as at 18 December 2006 and exclude cross drainage and signal costs

Table D.6 Land Use Schedule

Local Plan Land Use Type	2004					
	Dwellings	Retail	Service	Professional	Industry	Other
Low density residential	245					
Service Station			5			
Retail Shops		98				
Mixed Business				164		
Education			237			
Brickworks/landfill site					237	
Rural						74

Table D.6 Land Use Schedule

Local Plan Land Use Type	2016														
	Dwellings	Retail	Service	Professional	Industry	Other	Trips/dwelling	Trips/100sqm	Retail Trips	Service Trips	Professional Trips	Industry Trips	Other Trips	Total Trips	
Very low density residential	164						6.0								984
Low density residential	3688						5.8								21390
Low-medium density residential	1848						4.1								7577
Mixed use in Town Centre	695	130	574	1480			3.9	10	429	1378	3552	0	0	8069	
Mixed use not in Town Centre	295	290					3.9	10	957	0	0	0	0	1952	
Town Centre		300		1102				60	5940	0	15869	0	0	21909	
Neighbourhood Centres	60	470	180				20	396	2256	864	0	0	0	3516	
Business Centre		20	70					20	132	336	0	0	0	468	
Business Park		35	315	2207				4	48.2	302	2119	0	0	2487	
Gateway Civic			574	1102				10	0	1378	2645	0	0	4022	
State Service Centre								10	0	0	0	0	0	0	
Community Use						50		4	0	0	0	0	0	48	

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Table D.7

Daily Trips	79,631
Capacity Consumed	50,284.499
Capacity Consumed (CU's/Daily Trip	631
CU's/ET	3,680

Note: 1 ET = 5.8 Daily Trips

Table D.8 Road Charge

Local Plan Land Use Type	ICU/Ha	ET Conv Rate	CU/ET
Very low density residential	21,207	1.0345	4,100
Low density residential	57,400	1.0000	
Low-medium density residential	57,966	0.7069	
Mixed use in Town Centre	192,700	0.0210	
Mixed use not in Town Centre	237,800	0.0270	
Town Centre	1,467,800	0.2086	
Neighbourhood Centres	1,020,900	0.0345	
Business Centre	1,020,900	0.0345	
Business Park	1,590,800	0.0069	
Gateway Civic	196,800	0.0172	
State Service Centre	196,800	0.0172	
Community Use	254,200	0.0069	

Table D.8 Public Transport Charge

Public transport charges	ICU/ET
Total cost of infrastructure 2006 (\$)	821,284
Total land use area (Ha)	531
Standardised PT rate (2006 \$) per Ha	1,548
Public Transport Charge (ICUs) per Ha	1,089

Note: Charges are based on the infrastructure costs available as at 18 December 2006 and exclude land acquisition costs

## Appendix D2: Transport Conversions

Path Charge		Residential			Non-Residential			Total	Conversion						
Local Plan Land Use Type	Units of Measure	Assumed dwelling per unit of development (ha) (based on RUCLP)	Assumed trip rates trips per unit of measure (ha) (based on RUCLP)	Trips per Unit of Development (ha)	Assumed plot ratio	Assumed GFA (m <sup>2</sup> ) per unit of development (ha)	Assumed trip rates trips per unit of measure (m <sup>2</sup> GFA)	Trips per unit of development (ha)	Total trips per unit of development (ha)	Assumed Densities ETs/Ha	Convert units from res to non-res (/Ha to /m <sup>2</sup> GFA)	CONVERSION ET / Dwelling or ET / m <sup>2</sup> GFA	ICU/ Ha	Contribution rate ICU / ET	Contribution rate ICU / ET
Very low density residential	Dwelling	5.0	1.5	7					7	5		1.0571	956		180.91
Low density residential	Dwelling	14.0	1.4	20					20	14		1.0000	2,533		180.91
Low-medium density residential	Dwelling	20.0	1.0	20					20	15		0.7286	2,636		180.91
Mixed use in Town Centre	m <sup>2</sup> of GFA	40.0	1.8	49	1.65	4950	0.0175	86.6	136	97	0.0097	0.0196	17,525		180.91
Mixed use not in Town Centre	m <sup>2</sup> of GFA	50.0	1.2	42	0.80	2400	0.0120	28.8	71	51	0.0051	0.0211	9,149		180.91
Town Centre	m <sup>2</sup> of GFA				1.50	15000	0.0175	262.5	263	188	0.0188	0.0125	33,920	181	180.91
Neighbourhood Centres	m <sup>2</sup> of GFA				0.80	8000	0.0200	160.0	160	114	0.0114	0.0143	20,675		180.91
Business Centre	m <sup>2</sup> of GFA				0.80	8000	0.0200	160.0	160	114	0.0114	0.0143	20,675		180.91
Business Park	m <sup>2</sup> of GFA				0.50	5000	0.0200	100.0	100	71	0.0071	0.0143	12,922		180.91
Gateway Civic	m <sup>2</sup> of GFA				1.20	12000	0.0150	180.0	180	129	0.0129	0.0107	23,259		180.91
State Service Centre	m <sup>2</sup> of GFA				0.50	5000	0.0150	75.0	75	54	0.0054	0.0107	9,691		180.91
Community Use	m <sup>2</sup> of GFA				0.90	9000	0.0210	189.0	189	135	0.0135	0.0150	24,422		180.91

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Public Transport Charge		Residential			Non-Residential			Total	Conversion						
Local Plan Land Use Type	Units of Measure	Assumed dwelling per unit of development (ha) (based on RUCLP)	Assumed trip rates trips per unit of measure (ha) (based on RUCLP)	Trips per Unit of Development (ha)	Assumed plot ratio	Assumed GFA (m <sup>2</sup> ) per unit of development (ha)	Assumed trip rates trips per unit of measure (m <sup>2</sup> GFA)	Trips per unit of development (ha)	Total trips per unit of development (ha)	Assumed Densities ETs/Ha	Convert units from res to non-res (/Ha to /m <sup>2</sup> GFA)	CONVERSION ET / Dwelling or ET / m <sup>2</sup> GFA	ICU/ Ha	Contribution rate ICU / ET	Contribution rate ICU / ET
Very low density residential	Dwelling	5.0								5		0.3695	402		77.75
Low density residential	Dwelling	14.0								14		1.0000	1,089		77.75
Low-medium density residential	Dwelling	20.0								14		1.0099	1,099		77.75
Mixed use in Town Centre	m <sup>2</sup> of GFA	40.0			1.65	4950				190	0.0190	0.0014	14,735		77.75
Mixed use not in Town Centre	m <sup>2</sup> of GFA	50.0			0.80	2400				73	0.0073	0.0005	5,691		77.75
Town Centre	m <sup>2</sup> of GFA				1.50	15000				905	0.0905	0.0065	70,380	78	77.75
Neighbourhood Centres	m <sup>2</sup> of GFA				0.80	8000				276	0.0276	0.0020	21,449		77.75
Business Centre	m <sup>2</sup> of GFA				0.80	8000				276	0.0276	0.0020	21,449		77.75
Business Park	m <sup>2</sup> of GFA				0.50	5000				172	0.0172	0.0012	13,406		77.75
Gateway Civic	m <sup>2</sup> of GFA				1.20	12000				310	0.0310	0.0022	24,130		77.75
State Service Centre	m <sup>2</sup> of GFA				0.50	5000				129	0.0129	0.0009	10,054		77.75
Community Use	m <sup>2</sup> of GFA				0.90	9000				62	0.0062	0.0004	4,826		77.75

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### Appendix D3: Transport Total Costs

Segment	Stage	Assumed Construction Year	Road name	Section	Cross section type	Road Reserve		Section Code	length (m)	cross section cost (2006\$/m)	Total Construction Cost, \$
						width					
1a	3	2019	Gardner Road 1	Underwood Rd to Priestdale Rd	Suburban route	33.00		C33	950	4,137	3,930,150
1b	2	2014	Gardner Road 2	Priestdale Rd to Miles Platting Rd	Suburban route	33.00		C33	800	4,137	3,309,600
2a	2	2014	Gardner Road 3	Miles Platting Rd to School Road extension	Suburban route	38.00		C38	480	4,836	2,321,280
3a	1	2009	Gardner Road 4	School Road extension to Prebble St	Suburban route	33.00		C33	1,350	4,137	5,584,950
3b	3	2019	Gardner Road 5	Prebble St to Landfill Site (northern boundary)	Suburban route	33.00		C33	1,280	4,137	5,295,360
3c	3	2019	Gardner Road 6	Landfill Site (northern boundary) to Mt. Gravatt-Capalaba Rd	Suburban route	33.00		C33	640	4,137	2,647,680
4a	3	2019	Rochedale Road 1	Underwood Rd to Priestdale Rd	Suburban route	33.00		C33	900	4,137	3,723,300
4b	2	2014	Rochedale Road 2	Priestdale Rd to School Rd extension (east)	Suburban route	33.00		C33	1,230	4,137	5,088,510
4c	1	2009	Rochedale Road 3	School Rd extension (east) to Prebble St	Suburban route	33.00		C33	1,520	4,137	6,288,240
4d	2	2014	Rochedale Road 4	Prebble St to Grieve Rd	Suburban route	33.00		C33	1,140	4,137	4,716,180
5a	3	2019	Underwood Rd	Motorway to Rochedale Rd	Suburban route	33.00		C33	1,050	4,137	4,343,850
6a	3	2019	Priestdale Road	Motorway to Rochedale Rd	District Access	30.50		B30	1,820	3,400	6,188,000
7a	2	2014	Miles Platting Road 1	Motorway to Gardner Rd	Suburban route	40.00		D40	800	5,534	4,427,200
7b	2	2014	Miles Platting Road 2	Gardner Road to Rochedale Rd	Suburban route	33.00		C33	1,050	4,137	4,343,850
8a	3	2019	School Road 1	Underwood Rd to Miles Platting Rd	District Access	30.50		B30	1,870	3,400	6,358,000
8b	1	2009	School Road 2	Miles Platting Rd to Rochedale Rd	District Access	30.50		B30	1,980	3,400	6,732,000
9a	1	2009	Ford Road 1	Gardner Rd to Rochedale Rd	District Access	30.50		B30	1,050	3,400	3,570,000
9b	2	2014	Ford Road 2	Rochedale Rd to Priest Gully	District Access	30.50		B30	1,170	3,400	3,978,000
10a	1	2009	Prebble Street	Motorway to Rochedale Rd	District Access	30.50		B30	1,930	3,400	6,562,000
11a	2	2014	Grieve Rd 1	Ford Rd to extent of VLD (24m road reserve)	District Access	24.00		A20	920	2,428	2,233,760
11b	2	2014	Grieve Rd 2	Extent of VLD to Rochedale Rd	District Access	20.00		A20	1,890	2,428	4,588,920
11c	2	2014	Grieve Rd 3	Rochedale Rd to Mt. Gravatt-Capalaba Rd	Suburban route	33.00		C33	970	4,137	4,012,890
14a	1	2009	Interim - Interim works (Miles Platting)	Intersection of Miles Platting Rd and Gardner Rd	-	-	-	-	-	-	1,092,500
16a	1	2009	Ford Rd bridge	Priest Gully (refer to Note **)	-	-	-	-	-	-	883,000
17a	2	2014	Miles Platting Rd bridge	Motorway	-	-	-	-	-	-	8,750,000
<b>TOTALS</b>											<b>110,969,220</b>

\*\* Note that Item 16a Ford Rd Bridge was constructed in year 2006. Hence, no discounting to net present value is required for this item

road const



Associated Infrastructure Costs 2006 (\$)				
Total Services Cost, \$	Intersection costs (signals & land) (2006 \$)	Total Retaining Walls Cost, \$	Total Major Culverts Cost, \$	Cost (Infrastructure + Associated) \$
0	525,000	36,000	0	4,491,150
0	0	3,600	0	3,313,200
264,000	600,000	0	0	3,185,280
775,000	825,000	93,600	1,541,805	8,820,355
286,000	0	0	281,983	5,863,343
206,500	0	15,840	0	2,870,020
27,000	220,000	0	0	3,970,300
417,300	600,000	0	0	6,105,810
516,200	525,000	111,600	1,606,660	9,047,700
386,400	450,000	133,200	0	5,685,780
30,000	0	0	0	4,373,850
667,800	0	0	0	6,855,800
461,000	0	0	0	4,888,200
871,600	0	0	0	5,215,450
698,900	300,000	9,000	0	7,365,900
0	300,000	31,680	0	7,063,680
0	0	81,000	287,433	3,938,433
206,600	225,000	61,200	459,653	4,930,453
12,000	0	114,840	0	6,688,840
318,200	0	36,000	0	2,587,960
690,900	0	102,240	0	5,382,060
360,700	0	129,600	0	4,503,190
18,400	0	0	0	1,110,900
0	0	0	0	883,000
0	0	0	0	8,750,000
7,214,500	4,570,000	959,400	4,177,534	127,890,654

Associated Land Costs 2006 (\$)		
Total land requirement, m <sup>2</sup>	Land (Acquisition + Contingencies) 2006 (\$)	
27,550	1,902,495.52	
26,400	1,678,125.89	
8,640	1,958,766.54	
17,550	1,933,451.63	
16,640	344,548.79	
8,320	172,274.39	
11,700	873,324.44	
15,990	737,775.26	
19,760	2,929,915.19	
14,820	1,089,176.70	
13,650	1,018,878.51	
19,079	1,488,445.92	
14,000	3,500,752.45	
13,650	1,271,916.29	
19,635	1,550,705.62	
60,390	6,726,097.02	
32,025	3,318,048.19	
12,285	492,236.33	
41,240	8,081,661.11	
3,680	76,198.29	
0	-	
12,610	261,103.38	
0	-	
0	-	
0	-	
409,614	41,405,897.47	

Infrastructure Contingencies and On Costs 2006 (\$)			
Contingencies	Design	ICP	Total Contingencies and On Costs 2006 (\$)
1,347,345	639,365	167,607	2,154,317
993,960	499,133	129,688	1,622,781
955,584	514,405	132,281	1,602,269
2,646,107	1,075,381	289,506	4,010,993
1,759,003	620,789	171,754	2,551,546
861,006	304,229	84,151	1,249,386
1,191,090	484,362	130,382	1,805,834
1,831,743	684,359	187,194	2,703,295
2,714,310	1,197,762	317,794	4,229,865
1,705,734	677,496	183,164	2,566,393
1,312,155	539,273	144,883	1,996,311
2,056,740	834,425	224,708	3,115,873
1,466,460	838,895	213,886	2,519,241
1,564,635	648,737	174,015	2,387,386
2,209,770	891,661	240,361	3,341,791
2,119,104	1,378,978	345,757	3,843,839
1,181,530	725,648	183,273	2,090,451
1,479,136	542,269	148,882	2,170,287
2,006,652	1,477,050	365,084	3,848,786
776,388	266,416	74,139	1,116,943
1,614,618	538,206	150,698	2,303,522
1,350,957	476,429	131,834	1,959,220
333,270	111,090	31,105	475,465
0	0	17,660	17,660
2,625,000	875,000	245,000	3,745,000
38,102,296	16,841,355	4,484,804	59,428,455

TOTAL ROAD ESTABLISHMENT COSTS	
Infrastructure + Land Acquisition 2006 (\$)	
8,547,962	
6,614,107	
6,746,316	
14,764,800	
8,759,438	
4,291,680	
6,649,458	
9,546,881	
16,207,480	
9,341,350	
7,389,039	
11,460,119	
10,908,194	
8,874,753	
12,258,397	
17,633,616	
9,346,932	
7,592,976	
18,619,287	
3,781,101	
7,685,582	
6,723,513	
1,586,365	
900,660	
12,495,000	
228,725,007	

Land Contingencies
Contingencies
0%

Infrastructure Contingencies & Indirect		
Construction	Design	ICP
30%	10%	2%

Table 2 Public transport infrastructure

Pickup Slab and Tactiles (cost per each/ number of)

Bus Stop Type	Small Bus Shelter	Adshel	J Pole	Seat	A	B	TOTAL
	\$10,000	\$13,000	\$700	\$800	\$2,500	\$3,500	
Standard (J Pole)			38		38		76
Standard (with Seat)			20	20	20		60
Intermediate	63		63			63	189
Premium		1	1			1	2
<b>Total number of stops</b>							<b>325</b>

Bus Stop Type	Small Bus Shelter	Adshel	J Pole	Seat	A	B	Land Costs (\$70/ m <sup>2</sup> )	Construction Total	Construction Contingency	Design	ICP	Total Infrastructure Contingencies and Indirect	Construction, Infrastructure, Land, Contingencies and Indirect \$	NPV (\$)
Standard (J Pole)	0	0	26,600	0	95,000	0		121,600	36,480	15,808	3,478	55,766	177,366	114,452
Standard (with Seat)	0	0	14,000	16,000	50,000	0		80,000	24,000	10,400	2,288	36,688	116,688	75,298
Intermediate	630,000	0	44,100	0	0	220,500	573,300	264,600	79,380	34,398	19,034	132,812	970,712	626,391
Premium			700			3,500		4,200	1,260	546	120	1,926	6,126	5,144
<b>TOTAL</b>												<b>1,264,765</b>	<b>821,284</b>	

Premium shelter assumed to be provided in year 2009 (Stage 1)

Table 3 Pedestrian and cycling infrastructure

Item	rate/ m	Length (lineal metre)	Total Construction Cost 2006 (\$)	Total land requirement (m <sup>2</sup> )	Total Land Cost 2006 (\$)	Total Pathways Cost 2006 (\$)	Construction Contingency	Design Contingency	ICP Contingency	Total Contingencies and Indirect	Construction, Infrastructure, Land, Contingencies and Indirect \$	NPV (\$)	NPV Cost per linear metre
On Road Bike Lanes	\$15	26,178	392,670			392,670	117,801	51,047	11,230	180,078	572,748	369,589	14
Off Road Bike Path on footpath	\$171	12,826	2,193,246			2,193,246	657,974	285,122	62,727	1,005,823	3,199,069	2,064,328	161
Off Road Bike Path in parkland etc.	\$319	2,936	936,584			936,584	280,975	121,756	26,786	429,517	1,366,101	881,532	300
<b>TOTAL</b>											<b>5,137,919</b>	<b>3,315,449</b>	<b>475</b>

Contingencies & Indirect		
Construction	Design	ICP
30%	10%	2%

# Appendix D4: Transport Note

The following should be noted.

- The timing of construction of infrastructure is indicated by **Stages**. Each stage is a 5 year period, and infrastructure will be required some time within the period.
- For the purposes of calculating NPVs, it is assumed that infrastructure within each stage is built in the middle year. Staging is as follows:

Stage	Period	Year*	NPV%	Base Year	ICU value
1	2007-2011	2009	6.00%	2006	\$1.42
2	2012-2016	2014			
3	2017-2021	2019			

\* Assumed year of construction for NPV purposes.