

Appendix 1

Eastern Bypass

- Scope
- Estimate
- Program
- RMS Drawings

Eastern Corridor

Scope

An Eastern Corridor would be 4.5km long and begin just south of Johnson Road. It would rise and cross over the Main Northern Railway Line south of the Wyong River, cross the Wyong River and come in at existing ground level near Panonia Road, generally follow close to the Pollock Avenue alignment north to the roundabout at the intersection of Pacific Highway, Johns Road and Pollock Avenue.

- The start of work will be approximately 100m south of the Johnson Road, Pacific Highway intersection. The intersection is replaced given the proximity of the roundabout in Johnson Road and the potential for the new road levels at the intersection to be higher than existing due to the rising approach to the rail over bridge.
- A new roundabout in Johnson Road providing a link from Johnson Road to the Pacific Highway and South Tacoma Road.
- Retaining walls where necessary and property adjustments for properties fronting the Pacific Highway, Johnson Road and South Tacoma Road. The local access road will be incorporated into the South Tacoma Road extension.
- The new roundabout in Johnson Road is assumed to be at grade or close to it.
- The assumed height required for the bridge over the railway line is approximately 8.5 m above the existing road level. The elevated carriageway would be supported on reinforced soil wall embankments with traffic contained between safety barriers. The bridge over the railway line to be four lanes wide single span with shoulders and provision for a shared pedestrian cycle-way path.
- Shoulders on the bridges to be 1m minimum width.
- Traffic signal intersection at grade with Warner Avenue.
- Various cul-de-sac and local road adjustments between Panonia Road and Johns Road.
- A nominal allowance for noise walls has been included. Urban environment to include street lighting, kerb and gutter drainage, shared pedestrian and cycle-way path, property access, landscaping and parking. Fencing to be provided full length.
- Allowance is included for possible ground improvement.
- Allowance is included for possible acid-sulphate soils.
- The northern limit of work is the existing roundabout at the Pacific Highway, Johns Road intersection.

Client: Roads & Maritime Services
 Project: Through Town & Bypass Options - Pacific Highway Wyong
 Option: East Bypass
 Detail: Project Summary



No	Item	Estimate (Exc Contingency)	Contingency		Estimate (Inc Contingency)	% of Total Estimate
			%	Amount		
1	Project Development					
1.1	Route / Concept / EIS	\$1,675,000	40%	\$670,000	\$2,345,000	
1.2	Project Management Services	\$245,000	30%	\$73,500	\$318,500	
1.3	Client Representation	\$22,400	10%	\$2,240	\$24,640	
	Sub total	\$1,942,400	38%	\$745,740	\$2,688,140	0.9%
2	Investigation and Design					
2.1	Investigation and Design	\$5,450,000	50%	\$2,725,000	\$8,175,000	
2.2	Project Management Services	\$692,000	30%	\$207,600	\$899,600	
2.3	Client Representation	\$33,280	10%	\$3,328	\$36,608	
	Sub total	\$6,175,280	48%	\$2,935,928	\$9,111,208	3.1%
3	Property Acquisitions					
3.1	Property Acquisitions	\$87,198,700	55%	\$47,959,285	\$135,157,985	
3.2	Professional Services for Property	\$1,307,981	30%	\$392,394	\$1,700,375	
3.3	Project Management Services	\$153,400	30%	\$46,020	\$199,420	
3.4	Client Representation	\$36,920	10%	\$3,692	\$40,612	
	Sub total	\$88,697,001	55%	\$48,401,391	\$137,098,392	46.7%
4	Public Utility Adjustments					
4.1	Public Utility Adjustments	\$4,850,000	100%	\$4,850,000	\$9,700,000	
4.2	Project Management Services	\$137,800	30%	\$41,340	\$179,140	
4.3	Client Representation	\$18,460	10%	\$1,846	\$20,306	
	Sub total	\$5,006,260	98%	\$4,893,186	\$9,899,446	3.4%
5	Construction of Works					
5.1	Infrastructure	\$87,650,000	45%	\$39,442,500	\$127,092,500	
5.2	Project Management Services	\$4,931,600	30%	\$1,479,480	\$6,411,080	
5.3	Client Representation	\$179,820	10%	\$17,982	\$197,802	
	Sub total	\$92,761,420	44%	\$40,939,962	\$133,701,382	45.6%
6	Handover					
6.1	Handover	\$360,000	50%	\$180,000	\$540,000	
6.2	Project Management Services	\$182,000	30%	\$54,600	\$236,600	
6.3	Client Representation	\$9,230	10%	\$923	\$10,153	
	Sub total	\$551,230	43%	\$235,523	\$786,753	0.3%
	TOTAL	\$195,133,591	50%	\$98,151,730	\$293,285,321	100%

No	Item	Estimate (Exc Contingency)	Estimate (Contingency)	Estimate Total
Total Project Management Allowances				
i	Project Management	\$6,341,800	\$1,902,540	\$8,244,340
ii	Client Presentation	\$300,110	\$30,011	\$330,121
Reality Checks				
		Cost / km (\$m)	Length of Road (km)	
iii	Project Cost per kilometer	\$65.54	4.5	
iv	Project Cost per lane kilometer	\$16.38	17.9	

Client: Roads & Maritime Services
 Project: Through Town & Bypass Options - Pacific Highway Wyong
 Option: East Bypass
 Detail: Project Development



ITEM	DESCRIPTION	UNIT	RATE	TOTAL	COMMENTS
1.1	Route / Concept / EIS				Estimated Duration - 6months
1.1.1	Concept Design				
	Integrated Design Consultant - Concept Road , Bridge, Drainage, Pavement, Lighting, Landscape etc	Item	\$ 350,000	\$ 350,000	
1.1.2	Preliminary Geotech				
	Investigation and reporting, test pits, boreholes, ground model, soil testing etc	item	\$ 150,000	\$ 150,000	
	Ground support model	item	\$ 50,000	\$ 50,000	
1.1.3	Traffic Modelling				
	Traffic model for concept design solutions	item	\$ 50,000	\$ 50,000	
1.1.4	Community Liaison				
	Included within project management services	item	\$ -	\$ -	
1.1.5	Environmental Investigations EIS				Estimated Duration - 8 months
	EIS REF	item	\$ 750,000	\$ 750,000	
	Water quality testing	item	\$ 20,000	\$ 20,000	
1.1.6	Survey				
	Ground survey model	item	\$ 100,000	\$ 100,000	
1.1.7	Specialist Sub Consultants				
	Urban Design	item	\$ 30,000	\$ 30,000	
	Noise	item	\$ 100,000	\$ 100,000	
	Hydrology	item	\$ 25,000	\$ 25,000	
	Archaeology	item	\$ 50,000	\$ 50,000	
	Total Item 1.1			\$ 1,675,000	

Notes / Assumptions

ITEM	DESCRIPTION	UTILISATION	WEEKS	RATE	TOTAL	COMMENTS
1.2	Project Management Services					Estimated Duration - 8 months
	Project manager	100%	35	\$ 5,100	\$ 178,500	
	Clerical assistant	20%	35	\$ 2,000	\$ 14,000	
	Assisting Engineer	50%	35	\$ 3,000	\$ 52,500	
	Total Item 1.2				\$ 245,000	

Notes / Assumptions

All rates are weekly

ITEM	DESCRIPTION	UTILISATION	WEEKS	RATE	TOTAL	COMMENTS
1.3	Client Representation					Estimated Duration - 8 months
	Project manager	10%	35	\$ 5,100	\$ 17,850	
	Clerical assistant	5%	35	\$ 2,000	\$ 3,500	
	Assisting Engineer	1%	35	\$ 3,000	\$ 1,050	
	Total Item 1.3				\$ 22,400	

Notes / Assumptions

All Rates are weekly

TOTAL ITEM					\$ 1,942,400	
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Client: Roads & Maritime Services
 Project: Through Town & Bypass Options - Pacific Highway Wyong
 Option: East Bypass
 Detail: Investigation and Design



ITEM	DESCRIPTION	UNIT	RATE	TOTAL	COMMENTS
2.1	<u>Investigation and Design</u>				Estimated Duration - 12 months
2.1.1	Investigation & Design				
	Integrated Design Consultant - Road , Bridge, Staging, Drainage, Pavement, Lighting, Landscape, Line Marking, Signage, Traffic Signals, Property Adjustments, Services / Utilities, Roadside Furniture, ITS etc	item	\$ 4,500,000	\$ 4,500,000	
2.1.2	Detailed Geotechnical Design				
	Investigation and reporting, test pits, boreholes, ground model, soil testing etc	item	\$ 300,000	\$ 300,000	
2.1.3	Survey				
	Ground survey model	item	\$ 250,000	\$ 250,000	
2.1.4	Independent Design Verification				
	Independent Design Review	item	\$ -	\$ -	
2.1.5	Specialist Consultants				
	Urban Design	item	\$ 100,000	\$ 100,000	
	Noise	item	\$ 100,000	\$ 100,000	
	Hydrology	item	\$ 100,000	\$ 100,000	
	Miscellaneous Consultants; Allowance	item	\$ 100,000	\$ 100,000	Commerical advice, communit consultation, community
	Total Item 2.1			\$ 5,450,000	

ITEM	DESCRIPTION	UTILISATION	WEEKS	RATE	TOTAL	COMMENTS
2.2	<u>Project Management Services</u>					Estimated Duration - 12 months
	Project manager	100%	52	\$ 5,100	\$ 265,200	
	Clercial assistant	20%	52	\$ 2,000	\$ 20,800	
	Assisting Engineer	100%	52	\$ 3,000	\$ 156,000	
	Tender Documentation	item	1	\$ 250,000	\$ 250,000.00	
	Total Item 2.2				\$ 692,000	

Notes / Assumptions

All rates are weekly

ITEM	DESCRIPTION	UTILISATION	WEEKS	RATE	TOTAL	COMMENTS
2.3	<u>Client Representation</u>					Estimated Duration - 12 months
	Project manager	10%	52	\$ 5,100	\$ 26,520	
	Clercial assistant	5%	52	\$ 2,000	\$ 5,200	
	Assisting Engineer	1%	52	\$ 3,000	\$ 1,560	
	Total Item 2.3				\$ 33,280	

Notes / Assumptions

All rates are weekly

TOTAL ITEM						\$ 6,175,280
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Client: Roads & Maritime Services
 Project: Through Town & Bypass Options - Pacific Highway Wyong
 Option: East Bypass
 Detail: Property Acquisitions



ITEM	DESCRIPTION	UNIT	QTY	RATE	TOTAL	COMMENTS
3.1	Property Acquisitions					Estimated Duration - 2 years
	Residential Property	ea	28	\$ 415,000	\$ 11,620,000	Refer to property acquisition quantification
	Commercial / Business Property	sq.m	15,720	\$ 1,000	\$ 15,720,000	
	Property - Partial Acquisition - Strip - Residential	sq.m	4,600	\$ 500	\$ 2,300,000	
	Property - Partial Acquisition - Strip - Commercial	sq.m	5,500	\$ 600	\$ 3,300,000	
	Railcorp Land	sq.m	3,500	\$ 375	\$ 1,312,500	
	Land Acquisition - Rural	sq.m	209,981	\$ 200	\$ 41,996,200	
	Land Acquisition - Farm	sq.m	75,000	\$ 50	\$ 3,750,000	
	Land Acquisition - Residential	sq.m	19,200	\$ 375	\$ 7,200,000	
	Total Item 3.1				\$ 87,198,700	

Notes / Assumptions

ITEM	DESCRIPTION	TOTAL VALUE OF PROPERTY	% FEE	TOTAL	COMMENTS
3.2	Professional Services for Property				Estimated Duration - 2 years
	Property Consultant & Valuation Expert	\$ 87,198,700	1.00%	\$ 871,987	
	Legal Advice	\$ 87,198,700	0.50%	\$ 435,994	
	Total Item 3.2			\$ 1,307,981	

Notes / Assumptions

ITEM	DESCRIPTION	UTILISATION	WEEKS	RATE	TOTAL	COMMENTS
3.3	Project Management Services					Estimated Duration - 2 years
	Project manager	25%	104	\$ 5,100	\$ 132,600	
	Clerical assistant	10%	104	\$ 2,000	\$ 20,800	
	Total Item 3.3				\$ 153,400	

Notes / Assumptions

All rates are weekly

ITEM	DESCRIPTION	UTILISATION	WEEKS	RATE	TOTAL	COMMENTS
3.4	Client Representation					Estimated Duration - 2 years
	Project manager	5%	104	\$ 5,100	\$ 26,520	
	Clerical assistant	5%	104	\$ 2,000	\$ 10,400	
	Total Item 3.4				\$ 36,920	

Notes / Assumptions

All rates are weekly

TOTAL ITEM						\$ 88,697,001
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Client: Roads & Maritime Services
Project: Through Town & Bypass Options - Pacific Highway Wyong
Option: East Bypass
Detail: Public Utility Adjustments



ITEM	DESCRIPTION	UNIT	TOTAL	COMMENTS
4.1	<u>Adjust Utilities</u>			Estimated Duration - 12 months
	Water Utilities			
	Relocation of services - Water	item	\$ 500,000	Refer to public utility quantification spreadsheet
	Relocation of services - Sewer	item	\$ 600,000	Refer to public utility quantification spreadsheet
	Telecommunications			
	Relocation of services	item	\$ 500,000	Refer to public utility quantification spreadsheet
	Power / Electrical Utilities HV & LV			
	Relocation of services	item	\$ 3,000,000	Refer to public utility quantification spreadsheet
	Gas Utilities HP & LP			
	Relocation of services	item	\$ 250,000	Refer to public utility quantification spreadsheet
	Total Item 4.1		\$ 4,850,000	

Notes / Assumptions

ITEM	DESCRIPTION	UTILISATION	WEEKS	RATE	TOTAL	COMMENTS
4.2	<u>Project Management Services</u>					Estimated Duration - 12 months
	Project manager	50%	52	\$ 5,100	\$ 132,600	
	Clerical assistant	5%	52	\$ 2,000	\$ 5,200	
	Total Item 4.2				\$ 137,800	

Notes / Assumptions

All rates are weekly

ITEM	DESCRIPTION	UTILISATION	WEEKS	RATE	TOTAL	COMMENTS
4.3	<u>Client Representation</u>					Estimated Duration - 12 months
	Project manager	5%	52	\$ 5,100	\$ 13,260	
	Clerical assistant	5%	52	\$ 2,000	\$ 5,200	
	Total Item 4.3				\$ 18,460	

Notes / Assumptions

All rates are weekly

TOTAL ITEM					\$ 5,006,260	
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Client: Roads & Maritime Services
 Project: Through Town & Bypass Options - Pacific Highway Wyong
 Option: East Bypass
 Detail: Construction of Works



ITEM	DESCRIPTION	TOTAL	COMMENTS
5.1	Infrastructure		Estimated Duration - 3 years
	Direct Works Costs	\$ 62,210,000	
	Overhead Costs	\$ 14,010,000	
	Contractors Margin	\$ 11,430,000	
	Total Item 5.1	\$ 87,650,000	

ITEM	Land Acquisition - Residential	UNIT	RATE	TOTAL	COMMENTS
5.2 (a)	Project Management Services - Support Services				Estimated Duration - 3 years
	Design Support	item	\$ 225,000	\$ 225,000	5% of detailed design figure
	Urban Design	item	\$ 100,000	\$ 100,000	
	Geotechnical Design Support Services	item	\$ 50,000	\$ 50,000	
	Quality & Safety Audit Services	item	\$ 25,000	\$ 25,000	
	Community Consultation	item	\$ 150,000	\$ 150,000	
	Traffic Management Support	item	\$ 25,000	\$ 25,000	
	Legal Services	item	\$ 200,000	\$ 200,000	
	Reports, Conditions of Approval etc	item	\$ 50,000	\$ 50,000	
	Community Liaison Representative	item	\$ 50,000	\$ 50,000	
	Survey	item	\$ 20,000	\$ 20,000	
	Commercial Advisor	item	\$ 100,000	\$ 100,000	
	Total Item 5.2 (a)			\$ 995,000	

ITEM	DESCRIPTION	UTILISATION	NO	WEEKS	RATE	TOTAL	COMMENTS
5.2 (b)	Project Management Services - Staff						Estimated Duration - 3 years
	PM Staff: Management						
	Project Manager	100%	1	162	\$ 5,100	\$ 826,200	
	Project Engineers	100%	2	162	\$ 3,750	\$ 1,215,000	
	Survelance Officers	100%	2	162	\$ 3,600	\$ 1,166,400	
	Health & Safety Advisor	50%	1	162	\$ 3,000	\$ 243,000	
	Quality Advisor	50%	1	162	\$ 3,000	\$ 243,000	
	Environmental Advisor	50%	1	162	\$ 3,000	\$ 243,000	
	Total Item 5.2 (b)					\$ 3,936,600	
	Total Item 5.2 (a) & (b)					\$ 4,931,600	

Notes / Assumptions

All rates are weekly

ITEM	DESCRIPTION	UTILISATION	WEEKS	RATE	TOTAL	COMMENTS
5.3	Client Representation					Estimated Duration - 3 years
	Senior Management Review	10%	162	\$ 4,000	\$ 64,800	
	Client Manager	10%	162	\$ 5,100	\$ 82,620	
	Clercial assistant	10%	162	\$ 2,000	\$ 32,400	
	Total Item 5.3				\$ 179,820	

Notes / Assumptions

All rates are weekly

TOTAL ITEM	\$ 92,761,420
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Client: Roads & Maritime Services
 Project: Through Town & Bypass Options - Pacific Highway Wyong
 Option: East Bypass
 Detail: Handover



ITEM	DESCRIPTION	UNIT	QTY	RATE	TOTAL	COMMENTS
6.1	Handover					Estimated Duration - 6 Months
	Final Reporting	item	1	\$ 100,000	\$ 100,000	
	Legal	item	1	\$ 100,000	\$ 100,000	
	Claims Response	item	1	\$ 100,000	\$ 100,000	
	Noise Survey	item	1	\$ 20,000	\$ 20,000	
	Traffic Verification	item	1	\$ 20,000	\$ 20,000	
	Environmental Monitors	item	1	\$ 20,000	\$ 20,000	
	Total Item 6.1				\$ 360,000	

Notes / Assumptions

ITEM	DESCRIPTION	UTILISATION	WEEKS	RATE	TOTAL	COMMENTS
6.2	Project Management Services					Estimated Duration - 6 months
	Project manager	50%	26	\$ 10,000	\$ 130,000	
	Clerical assistant	50%	26	\$ 4,000	\$ 52,000	
	Total Item 6.2				\$ 182,000	

Notes / Assumptions

All rates are weekly

ITEM	DESCRIPTION	UTILISATION	WEEKS	RATE	TOTAL	COMMENTS
6.3	Client Representation					Estimated Duration - 6 months
	Project manager	5%	26	\$ 5,100	\$ 6,630	
	Clerical assistant	5%	26	\$ 2,000	\$ 2,600	
	Total Item 6.3				\$ 9,230	

Notes / Assumptions

All rates are weekly

TOTAL ITEM					\$ 551,230	
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Client: Roads & Maritime Services
Project: Through Town & Bypass Options - Pacific Highway Wyong
Option: East Bypass
Detail: Property Acquisition Quantification



REF ID	DESCRIPTION	UNIT	NO	LAND AREA	TOTAL	COMMENTS
	QUANTIFICATION OF PROPERTY					
1	<u>Johnson Road to Wyong River</u>					
a	Residential	no	0		-	There is no property adjustment required
b	Commercial	sq.m		2,650		Unit 1 - Industrial land inc New Building under construction
	Commercial	sq.m		5,750		Unit 2 - Industrial land inc building, Park Trent Real Estate
	Commercial	sq.m		2,520		Unit 3 - Industrial land inc whole building, Booths Car Dealership
	Commercial	sq.m		2,000		Unit 4 - Industrial land inc building, Booths Car Dealership - Temporary Buildings
	Commercial	sq.m		2,800	15,720	Unit 5 - Industrial land inc building, Coromal Caravan Products
	Land Acquisition - Residential					
d	Property Adjustments - Commercial	sq.m		5,500	5,500	Industrial Land
e	Government / Rail Corp Land	sq.m		3,500	3,500	Land between Pacific Highway & rail line
f	Land acquisition - Farm	sq.m		75,000	75,000	Land in paddock, lot lable DP 1096069, 31
2	<u>Wyong River to Warner Ave Roundabout</u>					
a	residential	no	6			Properties on Panoria Rd
	residential	no	11			Properties on Rockleigh Rd - 2 rows of property
c	Property Adjustments - residential	sq.m		300	300	Panoria Rd beside River Wyong - 1no property
h	Land acquisition - Residential	sq.m		8,900	8,900	Land in park area along Rockleigh Rd
3	<u>Warner Ave Roundabout to Pollack Ave</u>					
a	Residential	no	6			Beside Warner Ave Roundabout
	residential	no	2			Upon new carriageway meeting Pollack Ave
	residential	no	1			Opposite Mantra Kooindah Waters Golf & Spa Resort
	residential	no	1			On Pollack Ave before roundabout in field - 40015m2
	residential	no	1		-	On Pollack Ave before roundabout in field - 4800m2
c	Property Adjustments - residential	sq.m		3,900		Along Pollack Ave - 13no in front of sports field
		sq.m		400	4,300	On Warner Ave - 1no property
g	Land acquisition - Rural	sq.m		8,000		Full acquisition, triangle field, Lot lable 5056
g	Land acquisition - Rural	sq.m		1,800		Full acquisition, at corner of Pollack Ave
g	Land acquisition - Rural	sq.m		11,700		Partial land acquisition, lot lable DP 1164321
g	Land acquisition - Rural	sq.m		3,766		Partial land acquisition on Pollack Ave, beside property with lot lable 466165
g	Land acquisition - Rural	sq.m		35,000		Partial Property - From Previous land acquisition above to property adjustment with lot lable DP 402481, 1
g	Land acquisition - Rural	sq.m		54,000		From above property adjustment with lot lable DP402481, 1 to full property & land acquisition with lot lable DP 927391
h	Land acquisition - residential	sq.m		4,800		Property Acquisition including land
g	Land acquisition - Rural	sq.m		40,015		Property Acquisition including land
g	Land acquisition - Rural	sq.m		9,400		Full land acquisition lot lable 805783, 11
g	Land acquisition - Rural	sq.m		2,300		Partial land acquisition lot lable DP805783, 1
g	Land acquisition - Rural	sq.m		36,500		Full land acquisition lot lable Lot lable DP785069, 2
g	Land acquisition - Rural	sq.m		7,500		Partial land acquisition beside pollack ave DP 787471, 202
h	Land acquisition - residential	sq.m		5,200		Full land acquisition beside pollack ave DP 787471, 201
h	Land acquisition - residential	sq.m		300		Triangle section beside Pollack Ave, lot lable 180788
					220,281	

REF ID	DESCRIPTION	UNIT	NO	LAND AREA
	SUMMARY OF PROPERTY ACQUISITION			
a	Residential	no	28	-
b	Commercial / Business	sq.m		15,720
c	Property partial acquisition strip - residential	sq.m		4,600
d	Property partial acquisition strip - Commercial	sq.m		5,500
e	Railcorp Land	sq.m		3,500
	Land acquisition - Total	sq.m		304,181
f	Land acquisition - Farm	sq.m		75,000
g	Land acquisition - Rural	sq.m		209,981
h	Land acquisition - residential	sq.m		19,200

Notes:

Areas calculated from the NSW Department of Land Maps & Google Earth

Client: Roads & Maritime Services
Project: Through Town & Bypass Options - Pacific Highway Wyong
Option: East Bypass
Detail: Public Utility Adjustments Quantification



ITEM	DESCRIPTION	UNIT	TOTAL	CONTINGENCY %	CONTINGENCY - TOTAL	TOTAL
1	Power					
	Local Power Supply	item	\$2,000,000	100%	\$2,000,000	\$4,000,000
	Railway Adjustment	item	\$1,000,000	100%	\$1,000,000	\$2,000,000
	Notes:					
	Local power supply includes 415kv & 33kv adjustments including temporary power supply including transformers, pits, temporary power, temporary generators etc					
	New infrastructure work allowed for within direct works estimate					
2	Sewer					
	Assumed 2no rising main at 150mm each to be adjusted	item	\$600,000	100%	\$600,000	\$1,200,000
	Gravity pit adjustments have been allowed within the direct works					
3	Water					
	Protection & Relocation of Water Utilities	item	\$500,000	100%	\$500,000	\$1,000,000
4	Telecommunications					
	Protection & Relocation of Telecommunications Utilities	item	\$500,000	100%	\$500,000	\$1,000,000
5	Gas					
	Protection & Relocation of Gas Utilities	item	\$250,000	100%	\$250,000	\$500,000
	Total Public Utility Adjustment		\$4,850,000	100%	\$4,850,000	\$9,700,000

Line	Item	Description	Quantity	Unit	Labour	Material	Plant	Subcontract	Rate	Total
1										
2		Wyong By-Pass Option - East Bypass - South of the Johnson rd / Pacific hwy intersection to Wadalba Roundabout (John St)								
3		Estimate - July'12 - T Rajeswaran								
4	Item									
5	5	Infrastructure Construction - Carrigeways								
6	5.1	5(a) - 5(C)	1	Item	\$ 2,116,552	\$ 13,554,077	\$ 8,157,277	\$ 12,467,931	\$ 36,295,838	\$ 36,295,838
7	5.1/a	Rural Road	450	m	\$ 113,028	\$ 1,029,836	\$ 592,985	\$ 881,873	\$ 5,817	\$ 2,617,722
8	5.1/b	Urban Road	3,880	m	\$ 1,483,621	\$ 11,941,744	\$ 6,451,299	\$ 9,688,219	\$ 7,620	\$ 29,564,882
9	5.1/c	Local Roads	320	m	\$ 15,005	\$ 52,271	\$ 64,527	\$ 48,932	\$ 565	\$ 180,735
10										
11		Items not included in the Group resource above								
12	5.1/d	Southern Intersection (pavement, drainage etc etc)	1	item	\$ 307,619	\$ 118,752	\$ 601,252	\$ 389,795	\$ 1,417,418	\$ 1,417,418
13	5.1/e	Ground Improvement including preloading, Flood relief & wick drain	52,500	m2	\$ 44,360	\$ 373,724	\$ 59,472	\$ 749,212	\$ 23	\$ 1,226,768
14	5.1/e1	Mill / demolish existing AC surface	1	Item	\$ 67,270	\$ 16,840	\$ 123,450	\$ 92,725	\$ 300,285	\$ 300,285
15	5.1/f	Sedbasins	15	each	\$ 22,764	\$ 12,472	\$ 69,279		\$ 6,968	\$ 104,515
16	5.1/g	Open Drains.	1,100	m	\$ 3,144		\$ 10,386	\$ 8,470	\$ 20	\$ 22,000
17	5.1/h	Traffic lights @ Warner Rd	1	each				\$ 280,000	\$ 280,000	\$ 280,000
18	5.1/i	Traffic Control	1	item	\$ 11,340	\$ 5,798	\$ 64,580	\$ 168,742	\$ 250,460	\$ 250,460
19	5.1/j	Demo work	1	Item	\$ 48,400	\$ 2,640	\$ 120,049	\$ 13,200	\$ 184,289	\$ 184,289
20	5.1/k	sign	1	Item				\$ 53,263	\$ 53,263	\$ 53,263
21	5.1/l	Shared Path allowance for path to one side of Rural rd	1,100	m2				\$ 93,500	\$ 85	\$ 93,500
22		EE formula - =sum(7:22) Carrigeways			\$ 2,116,552	\$ 13,554,077	\$ 8,157,277	\$ 12,467,931		\$ 36,295,838
23										
24	5.2	Bridges & Structures								
25	5.2/a	Bridge No 1- Over Rail Tracks	535	m2	\$ 175,739	\$ 965,749	\$ 195,066	\$ 4,199,361	\$ 10,348	\$ 5,535,916
26	5.2/b	Bridge across rail crossing	535	m2	\$ 34,595	\$ 12,500	\$ 225	\$ 2,034,863	\$ 3,892	\$ 2,082,182
27	5.2/c	Reinforced Earth wall including parapets	1,620	m2	\$ 48,954	\$ 134,800	\$ 11,752	\$ 2,112,100	\$ 1,424	\$ 2,307,606
28	5.2/d	Insitu retaining wall	20	m	\$ 9,748	\$ 6,685	\$ 904	\$ 1,399	\$ 937	\$ 18,735
29	5.2/e	Embankment - East of rail track	33,660	m3	\$ 82,443	\$ 811,764	\$ 182,186	\$ 51,000	\$ 33	\$ 1,127,393
30										
31	5.2/f	Bridge No 2 - Over Wyong River & Swamp area	5,992	item	\$ 49,643	\$ 319,638	\$ 9,178	\$ 17,580,148	\$ 2,997	\$ 17,958,607
32	5.2/g	Bridge over ck	5,992	m2	\$ 5,082	\$ 181,500	\$ 2,767	\$ 15,869,106	\$ 2,680	\$ 16,058,455
33	5.2/h	Reinforced Earth wall including parapets	1,568	m2	\$ 44,561	\$ 138,138	\$ 6,411	\$ 1,711,042	\$ 1,212	\$ 1,900,153
34										
35	5.2.1	Noise wall along Ruthleigh Rd !! and any other	2,100	m2				\$ 735,000	\$ 350	\$ 735,000
36		EE formula - =sum(26:35) Bridges & Structures			\$ 225,383	\$ 1,285,387	\$ 204,244	\$ 22,514,509		\$ 24,229,523
37										
38	6	Other Related Items								
39		Property								
40	6.1	Dilapidation survey & report.	100	each				\$ 43,200	\$ 432	\$ 43,200
41	6.2	Site Monitoring	36	mth				\$ 68,396	\$ 1,900	\$ 68,396
42	6.3	Street Lighting - Residential stretch & on bridge decks.	1	item				\$ 608,550	\$ 608,550	\$ 608,550
43	6.4	Domolish existing Houses	35	each	\$ 128,583	\$ 7,400	\$ 316,873	\$ 82,000	\$ 15,282	\$ 534,856
44	6.5	Property Aquisition	35	each		\$ 28,600,000			\$ 817,143	\$ 28,600,000
45	6.6	Property adjustments	40	each				\$ 360,000	\$ 9,000	\$ 360,000
46										

Line	Item	Description	Quantity	Unit	Labour	Material	Plant	Subcontract	Rate	Total
1										
2		Wyong By-Pass Option - East Bypass - South of the Johnson rd / Pacific hwy intersection to Wadalba Roundabout (John St)								
3		Estimate - July'12 - T Rajeswaran								
47	7	Treatment of Acid Sulphate Soils								
48	7.1	Testing	25	each				\$ 7,500	\$ 300	\$ 7,500
49	7.2	Treatment of Acid Sulphate Soils	2,000	m3	\$ 7,497		\$ 27,733	\$ 6,600	\$ 21	\$ 41,831
50	7.3	Supply of Hydrated Lime @ 2% by wt	80	tonne		\$ 28,274			\$ 353	\$ 28,274
51	7.4									
52		EE formula - =sum(40:50) Other related items			\$ 136,080	\$ 35,674	\$ 344,606	\$ 1,176,246		\$ 1,692,607
53										
54		EE formula - =sum(3:51) TOTAL DIRECT COST			\$ 2,478,015	\$ 14,875,139	\$ 8,706,127	\$ 36,158,687		\$ 62,217,968
55										
56										
57										
58										
59										
60										
61										
62										
		Total for all items			\$ 2,478,015	\$ 14,875,139	\$ 8,706,127	\$ 36,158,687		\$ 62,217,968

East Bypass

ID	Task ID	Task Name	Duration
1		East Bypass	1450 days
2	10	Concept Development	25 wks
3	20	Investigation and design	75 wks
4	25	Environmental Investigations & Approvals	75 wks
5	D	Dummy	0 wks
6	30	Property Acquisitions	100 wks
7	40	Services Relocations	50 wks
8	D	Dummy	0 days
9	50	Bridge over the Railway Line	75 wks
10	60	Johnson Road Roundabout and Intersection with Pacific Highway	20 wks
11	70	West Side Rail Bridge Approaches	15 wks
12	80	Bridge over Wyong River	50 wks
13	90	Ground Improvement, south of River, Rail Bridge to River	50 wks
14	100	Ground Improvement, Panonia to Johns Road	50 wks
15	120	Johnson Road to Panonia Road	25 wks
16	130	Panonia Road to Johns Road	30 wks
17	140	Completion Works	10 wks

The Gantt chart visualizes the project schedule for the East Bypass. The timeline is divided into 20 quarters, with each quarter lasting 25 weeks. The project starts at the beginning of Quarter 2. Key tasks and their durations are as follows:

- Concept Development** (Task ID 10): 25 weeks, starting at the beginning of Quarter 2.
- Investigation and design** (Task ID 20): 75 weeks, starting at the beginning of Quarter 3.
- Environmental Investigations & Approvals** (Task ID 25): 75 weeks, starting at the beginning of Quarter 3.
- Property Acquisitions** (Task ID 30): 100 weeks, starting at the beginning of Quarter 4.
- Services Relocations** (Task ID 40): 50 weeks, starting at the beginning of Quarter 4.
- Bridge over the Railway Line** (Task ID 50): 75 weeks, starting at the beginning of Quarter 4.
- Johnson Road Roundabout and Intersection with Pacific Highway** (Task ID 60): 20 weeks, starting at the beginning of Quarter 6.
- West Side Rail Bridge Approaches** (Task ID 70): 15 weeks, starting at the beginning of Quarter 7.
- Bridge over Wyong River** (Task ID 80): 50 weeks, starting at the beginning of Quarter 4.
- Ground Improvement, south of River, Rail Bridge to River** (Task ID 90): 50 weeks, starting at the beginning of Quarter 6.
- Ground Improvement, Panonia to Johns Road** (Task ID 100): 50 weeks, starting at the beginning of Quarter 6.
- Johnson Road to Panonia Road** (Task ID 120): 25 weeks, starting at the beginning of Quarter 6.
- Panonia Road to Johns Road** (Task ID 130): 30 weeks, starting at the beginning of Quarter 7.
- Completion Works** (Task ID 140): 10 weeks, starting at the beginning of Quarter 8.

Dependencies are shown with arrows: Concept Development leads to Investigation and design and Environmental Investigations & Approvals. Investigation and design leads to Property Acquisitions. Environmental Investigations & Approvals leads to Property Acquisitions. Property Acquisitions leads to Services Relocations. Services Relocations leads to Bridge over the Railway Line, Johnson Road Roundabout and Intersection with Pacific Highway, West Side Rail Bridge Approaches, and Johnson Road to Panonia Road. Bridge over the Railway Line leads to Johnson Road Roundabout and Intersection with Pacific Highway. Johnson Road Roundabout and Intersection with Pacific Highway leads to West Side Rail Bridge Approaches. West Side Rail Bridge Approaches leads to Ground Improvement, south of River, Rail Bridge to River. Ground Improvement, south of River, Rail Bridge to River leads to Ground Improvement, Panonia to Johns Road. Ground Improvement, Panonia to Johns Road leads to Johnson Road to Panonia Road. Johnson Road to Panonia Road leads to Panonia Road to Johns Road. Panonia Road to Johns Road leads to Completion Works. Bridge over Wyong River leads to Ground Improvement, south of River, Rail Bridge to River. Ground Improvement, south of River, Rail Bridge to River leads to Ground Improvement, Panonia to Johns Road. Ground Improvement, Panonia to Johns Road leads to Johnson Road to Panonia Road. Johnson Road to Panonia Road leads to Panonia Road to Johns Road. Panonia Road to Johns Road leads to Completion Works. Completion Works leads to the end of the project.

Project: East Bypass.mpp Date: Tue 25/09/12	Task		Summary		Split		Inactive Milestone		Manual Summary	
	Task Progress		Rolled Up Task		External Tasks		Inactive Summary		Start-only	
	Critical Task		Rolled Up Critical Task		Project Summary		Manual Task		Finish-only	
	Critical Task Progress		Rolled Up Milestone		Group By Summary		Duration-only		Deadline	
	Milestone		Rolled Up Progress		Inactive Task		Manual Summary Rollup			



Appendix 2

Western Bypass

- Scope
- Estimate
- Program
- RMS Drawings

Western Corridor

Scope

A Western Corridor would be 6.9km long and begin just north of Johnson Road. It would run parallel to the Wyong River, cross the river just south of Alison Road, intersect with Alison Road to the west of Wyong High School and proceed north around Wyong Hill, turn east to pass through Watanobbi along Britannia Drive, cross the northern railway line and generally follow the existing Pacific Highway to the roundabout at the intersection of Pacific Highway, Johns Road and Pollock Avenue.

- The southern limit is assumed to be just north of the intersection of Johnson Road and the Pacific Highway. The intersection is to remain in the current configuration and operate for the Pacific Highway with all current turning movements retained i.e. no intersection improvements.
- A new intersection joining the new Pacific Highway with the old Pacific Highway near McPherson Road allowing northbound traffic to enter Wyong and southbound traffic from Wyong to join the new highway. Right and left turn movements together with a southbound slip lane for traffic travelling south from Wyong.
- The new Pacific Highway will include a new connection to South Tacoma Road with an at grade intersection. Right and left turn movements to and from South Tacoma Road, McPherson Road and the Pacific Highway will be provided.
- Local road adjustments including a cull-de-sac at McPherson Road.
- An intersection at grade with Pacific Highway and Mardi Road. Right and left turn movements to and from Mardi Road and the Pacific Highway. Mardi Road to be adjusted with one intersection provided for access to Pacific Highway.
- An intersection at grade with new Pacific Highway and Alison Road, including traffic signals.
- Dual carriageway from Johnson Road to Johns Road roundabout. Urban environment from Johnson Road just beyond Mardi Road, Rural environment from Mardi Road to Britannia Drive Watanobbi, urban environment from Britannia Drive across railway line on up to Johns Road roundabout.
- Bridges over Wyong River, nearby Unnamed Creek and northern railway line to be new dual carriageway, two-lane each way with one-meter shoulders.
- New intersection to connect new Pacific Highway with the local road network at Britannia Drive. Provision for right and left turn movements to and from the Pacific Highway will be made.
- New signalised intersection to connect new Pacific Highway with the local road network near Guardian Road. Right and left turn movements to and from the Pacific Highway.
- Allowance is included for possible ground improvement.
- Allowance is included for possible acid-sulphate soils.
- The northern limit is the existing roundabout at the Pacific Highway, Johns Road intersection.

Client: Client: Roads & Maritime Services
 Project: Through Town & Bypass Options - Pacific Highway Wyong
 Option: West Bypass
 Detail: Project Summary



No	Item	Estimate (Exc Contingency)	Contingency		Estimate (Inc Contingency)	% of Total Estimate
			%	Amount		
1	Project Development					
1.1	Route / Concept / EIS	\$2,595,000	40%	\$1,038,000	\$3,633,000	
1.2	Project Management Services	\$364,000	30%	\$109,200	\$473,200	
1.3	Client Representation	\$33,280	10%	\$3,328	\$36,608	
	Sub total	\$2,992,280	38%	\$1,150,528	\$4,142,808	1.0%
2	Investigation and Design					
2.1	Investigation and Design	\$5,870,833	50%	\$2,935,417	\$8,806,250	
2.2	Project Management Services	\$725,150	30%	\$217,545	\$942,695	
2.3	Client Representation	\$35,776	10%	\$3,578	\$39,354	
	Sub total	\$6,631,759	48%	\$3,156,539	\$9,788,299	2.4%
3	Property Acquisitions					
3.1	Property Acquisition	\$134,861,500	53%	\$71,476,595	\$206,338,095	
3.2	Professional Services for Property	\$2,022,923	60%	\$1,213,754	\$3,236,676	
3.3	Project Management Services	\$153,400	30%	\$46,020	\$199,420	
3.4	Client Representation	\$72,800	10%	\$7,280	\$80,080	
	Sub total	\$137,110,623	53%	\$72,743,649	\$209,854,271	50.8%
4	Public Utility Adjustments					
4.1	Public Utility Adjustments	\$16,000,000	100%	\$16,000,000	\$32,000,000	
4.2	Project Management Services	\$58,240	30%	\$17,472	\$75,712	
4.3	Client Representation	\$18,460	10%	\$1,846	\$20,306	
	Sub total	\$16,076,700	100%	\$16,019,318	\$32,096,018	7.8%
5	Construction of Works					
5.1	Infrastructure	\$105,950,000	40%	\$42,380,000.00	\$148,330,000	
5.2	Project Management Services	\$5,961,250	30%	\$1,788,375	\$7,749,625	
5.3	Client Representation	\$177,600	10%	\$17,760	\$195,360	
	Sub total	\$112,088,850	39%	\$44,186,135	\$156,274,985	37.9%
6	Handover					
6.1	Handover	\$360,000	50%	\$180,000	\$540,000	
6.2	Project Management Services	\$92,300	30%	\$27,690	\$119,990	
6.3	Client Representation	\$9,230	10%	\$923	\$10,153	
	Sub total	\$461,530	45%	\$208,613	\$670,143	0.2%
	TOTAL	\$275,361,742	50%	\$137,464,782	\$412,826,524	100%

No	Item	Estimate (Exc Contingency)	Estimate (Contingency)	Estimate Total
Total Project Management Allowances				
i	Project Management	\$7,354,340	\$2,206,302	\$9,560,642
ii	Client Presentation	\$347,146	\$34,715	\$381,861
Reality Checks				
		Cost / km (\$m)	Length of Road (km)	
iii	Project Cost per kilometer	\$58.14	7.1	
iv	Project Cost per lane kilometer	\$14.54	28.4	

Client: Client: Roads & Maritime Services
 Project: Through Town & Bypass Options - Pacific Highway Wyong
 Option: West Bypass
 Detail: Project Development



ITEM	DESCRIPTION	UNIT	RATE	TOTAL	COMMENTS
1.1	Route / Concept / EIS				Estimated Duration - 12months
1.1.1	Concept Design				
	Integrated Design Consultant - Concept Road, Bridge, Drainage, Pavement, Lighting, Landscape etc	Item	\$ 700,000	\$ 700,000	
1.1.2	Preliminary Geotech				
	Investigation and reporting, test pits, boreholes, ground model, soil testing etc	item	\$ 300,000	\$ 300,000	
	Ground support model	item	\$ 100,000	\$ 100,000	
1.1.3	Traffic Modelling				
	Traffic model for concept design solutions	item	\$ 50,000	\$ 50,000	
1.1.4	Community Liaison				
	Included within project management services	item	\$ -	\$ -	
1.1.5	Environmental Investigations EIS				
	EIS REF	Item	\$ 1,000,000	\$ 1,000,000	
	Water quality testing	item	\$ 40,000	\$ 40,000	
1.1.6	Survey				
	Ground survey model	item	\$ 200,000	\$ 200,000	
1.1.7	Specialist Sub Consultants				
	Urban Design	item	\$ 30,000	\$ 30,000	
	Noise	item	\$ 100,000	\$ 100,000	
	Hydrology	item	\$ 25,000	\$ 25,000	
	Archaeology	item	\$ 50,000	\$ 50,000	
	Total Item 1.1			\$ 2,595,000	

Notes / Assumptions

ITEM	DESCRIPTION	UTILISATION	WEEKS	RATE	TOTAL	COMMENTS
1.2	Project Management Services					Estimated Duration - 12 months
	Project manager	100%	52	\$ 5,100	\$ 265,200	
	Clerical assistant	20%	52	\$ 2,000	\$ 20,800	
	Assisting Engineer	50%	52	\$ 3,000	\$ 78,000	
	Total Item 1.2				\$ 364,000	

Notes / Assumptions

All rates are weekly

ITEM	DESCRIPTION	UTILISATION	WEEKS	RATE	TOTAL	COMMENTS
1.3	Client Representation					Estimated Duration - 12 months
	Project manager	10%	52	\$ 5,100	\$ 26,520	
	Clerical assistant	5%	52	\$ 2,000	\$ 5,200	
	Assisting Engineer	1%	52	\$ 3,000	\$ 1,560	
	Total Item 1.3				\$ 33,280	

Notes / Assumptions

All Rates are weekly

TOTAL ITEM	\$ 2,992,280					
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Client: Client: Roads & Maritime Services
 Project: Through Town & Bypass Options - Pacific Highway Wyong
 Option: West Bypass
 Detail: Investigation and Design



ITEM	DESCRIPTION	UNIT	RATE	TOTAL	COMMENTS
2.1	Investigation and Design				Estimated Duration - 13 months
2.1.1	Investigation & Design				
	Integrated Design Consultant - Road , Bridge, Staging, Drainage, Pavement, Lighting, Landscape, Line Marking, Signage, Traffic Signals, Property Adjustments, Services / Utilities, Roadside Furniture, ITS etc	item	\$ 4,875,000	\$ 4,875,000	
2.1.2	Detailed Geotechnical Design				
	Investigation and reporting, test pits, boreholes, ground model, soil testing etc	item	\$ 325,000	\$ 325,000	
2.1.3	Survey				
	Ground survey model	item	\$ 270,833	\$ 270,833	
2.1.4	Independent Design Verification				
	Independent Design Review	item	\$ -	\$ -	
2.1.5	Specialist Consultants				
	Urban Design	item	\$ 100,000	\$ 100,000	
	Noise	item	\$ 100,000	\$ 100,000	
	Hydrology	item	\$ 100,000	\$ 100,000	
	Miscellaneous Consultants; Allowance	item	\$ 100,000	\$ 100,000	Commerical advice, communitY consultatiom, community advce etc
	Total Item 2.1			\$ 5,870,833	

ITEM	DESCRIPTION	UTILISATION	WEEKS	RATE	TOTAL	COMMENTS
2.2	Project Management Services					Estimated Duration - 13 months
	Project manager	100%	56	\$ 5,100	\$ 285,090	
	Clercial assistant	20%	56	\$ 2,000	\$ 22,360	
	Assisting Engineer	100%	56	\$ 3,000	\$ 167,700	
	Tender Documentation	item	1	\$ 250,000	\$ 250,000.00	
	Total Item 2.2				\$ 725,150	

Notes / Assumptions

All rates are weekly

ITEM	DESCRIPTION	UTILISATION	WEEKS	RATE	TOTAL	COMMENTS
2.3	Client Representation					Estimated Duration - 13 months
	Project manager	10%	56	\$ 5,100	\$ 28,509	
	Clercial assistant	5%	56	\$ 2,000	\$ 5,590	
	Assisting Engineer	1%	56	\$ 3,000	\$ 1,677	
	Total Item 2.3				\$ 35,776	

Notes / Assumptions

All rates are weekly

TOTAL ITEM						\$ 6,631,759
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Client: Client: Roads & Maritime Services
 Project: Through Town & Bypass Options - Pacific Highway Wyong
 Option: West Bypass
 Detail: Property Acquisitions



ITEM	DESCRIPTION	UNIT	QTY	RATE	TOTAL	COMMENTS
3.1	Acquire Property					Estimated Duration - 2 years
	Residual Property	ea	56	\$ 415,000	\$ 23,240,000	Refer to property acquisition quantification
	Commercial / Business Property	sq.m	37,920	\$ 1,000	\$ 37,920,000	
	Property - Partial Acquisition - Strip - Residential	sq.m	4,000	\$ 500	\$ 2,000,000	
	Property - Partial Acquisition - Strip - Commercial	sq.m	27,500	\$ 600	\$ 16,500,000	
	Railcorp Land	sq.m	4,550	\$ 375	\$ 1,706,250	
	Land Acquisition - Rural	sq.m	184,320	\$ 200	\$ 36,864,000	
	Land Acquisition - Farm	sq.m	84,000	\$ 50	\$ 4,200,000	
	Land Acquisition - Residential	sq.m	33,150	\$ 375	\$ 12,431,250	
	Total Item 3.1				\$ 134,861,500	

Notes / Assumptions

ITEM	DESCRIPTION	TOTAL VALUE OF PROPERTY	% FEE	TOTAL	COMMENTS
3.2	Professional Services for Property				Estimated Duration - 2 years
	Property Consultant & Valuation Expert	\$ 134,861,500	1.00%	\$ 1,348,615	
	Legal Advice	\$ 134,861,500	0.50%	\$ 674,308	
	Total Item 3.2			\$ 2,022,923	

Notes / Assumptions

ITEM	DESCRIPTION	UTILISATION	WEEKS	RATE	TOTAL	COMMENTS
3.3	Project Management Services					Estimated Duration - 2 years
	Project manager	25%	104	\$ 5,100	\$ 132,600	
	Clerical assistant	10%	104	\$ 2,000	\$ 20,800	
	Total Item 3.3				\$ 153,400	

Notes / Assumptions

All rates are weekly

ITEM	DESCRIPTION	UTILISATION	WEEKS	RATE	TOTAL	COMMENTS
3.4	Client Representation					Estimated Duration - 2 years
	Project manager	5%	104	\$ 10,000	\$ 52,000	
	Clerical assistant	5%	104	\$ 4,000	\$ 20,800	
	Total Item 3.4				\$ 72,800	

Notes / Assumptions

All rates are weekly

TOTAL ITEM						\$ 137,110,623
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Client: Client: Roads & Maritime Services
 Project: Through Town & Bypass Options - Pacific Highway Wyong
 Option: West Bypass
 Detail: Public Utility Adjustments



ITEM	DESCRIPTION	UNIT	TOTAL	COMMENTS
4.1	<u>Adjust Utilities</u>			Estimated Duration - 12 months
	Water Utilities			
	Relocation of services - Water	item	\$ 2,000,000	Refer to public utility quantification spreadsheet
	Relocation of services - Sewer	item	\$ 2,000,000	Refer to public utility quantification spreadsheet
	Telecommunications			
	Relocation of services	item	\$ 3,000,000	Refer to public utility quantification spreadsheet
	Power / Electrical Utilities HV & LV			
	Relocation of services	item	\$ 7,000,000	Refer to public utility quantification spreadsheet
	Gas Utilities HP & LP			
	Relocation of services	item	\$ 2,000,000	Refer to public utility quantification spreadsheet
	Total Item 4.1		\$ 16,000,000	

Notes / Assumptions

ITEM	DESCRIPTION	UTILISATION	WEEKS	RATE	TOTAL	COMMENTS
4.2	<u>Project Management Services</u>					Estimated Duration - 12 months
	Project manager	20%	52	\$ 5,100	\$ 53,040	
	Clerical assistant	5%	52	\$ 2,000	\$ 5,200	
	Total Item 4.2				\$ 58,240	

Notes / Assumptions
 rates are weekly

ITEM	DESCRIPTION	UTILISATION	WEEKS	RATE	TOTAL	COMMENTS
4.3	<u>Client Representation</u>					Estimated Duration - 12 months
	Project manager	5%	52	\$ 5,100	\$ 13,260	
	Clerical assistant	5%	52	\$ 2,000	\$ 5,200	
	Total Item 4.3				\$ 18,460	

Notes / Assumptions
 All rates are weekly

TOTAL ITEM	\$ 16,076,700
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Client: Client: Roads & Maritime Services
Project: Through Town & Bypass Options - Pacific Highway Wyong
Option: West Bypass
Detail: Construction of Works



ITEM	DESCRIPTION	TOTAL	COMMENTS
5.1	Infrastructure		Estimated Duration - 3 years
	Direct Works Costs	\$ 75,730,000	
	Overhead Costs	\$ 16,400,000	
	Contractors Margin	\$ 13,820,000	
	Total Item 5.1	\$ 105,950,000	

ITEM	DESCRIPTION	UNIT	RATE	TOTAL	COMMENTS
5.2 (a)	Project Management Services - Support Services				Estimated Duration - 3 years
	Design Support	item	\$ 243,750	\$ 243,750	
	Urban Design	item	\$ 100,000	\$ 100,000	
	Geotechnical Design Support Services	item	\$ 50,000	\$ 50,000	
	Quality & Safety Audit Services	item	\$ 25,000	\$ 25,000	
	Community Consultation	item	\$ 150,000	\$ 150,000	
	Traffic Management Support	item	\$ 25,000	\$ 25,000	
	Legal Services	item	\$ 200,000	\$ 200,000	
	Reports, Conditions of Approval etc	item	\$ 50,000	\$ 50,000	
	Community Liaison Representative	item	\$ 50,000	\$ 50,000	
	Survey	item	\$ 20,000	\$ 20,000	
	Commercial Advisor	item	\$ 100,000	\$ 100,000	
	Insurance - PA	item	\$ 1,059,500	\$ 1,059,500	
	Total Item 5.2 (a)			\$ 2,073,250	

ITEM	DESCRIPTION	UTILISATION	NO	WEEKS	RATE	TOTAL	COMMENTS
5.2 (b)	Project Management Services - Staff						Estimated Duration - 3 years
	PM Staff: Management						
	Project Manager	100%	1	160	\$ 5,100	\$ 816,000	
	Project Engineers	100%	2	160	\$ 3,750	\$ 1,200,000	
	Surveillance Officers	100%	2	160	\$ 3,600	\$ 1,152,000	
	Health & Safety Advisor	50%	1	160	\$ 3,000	\$ 240,000	
	Quality Advisor	50%	1	160	\$ 3,000	\$ 240,000	
	Environmental Advisor	50%	1	160	\$ 3,000	\$ 240,000	
	Total Item 5.2 (b)					\$ 3,888,000	
	Total Item 5.2 (a) & (b)					\$ 5,961,250	

Notes / Assumptions
All rates are weekly

ITEM	DESCRIPTION	UTILISATION	WEEKS	RATE	TOTAL	COMMENTS
5.3	Client Representation					Estimated Duration - 3 years
	Senior Management Review	10%	160	\$ 4,000	\$ 64,000	
	Client Manager	10%	160	\$ 5,100	\$ 81,600	
	Clerical assistant	10%	160	\$ 2,000	\$ 32,000	
	Total Item 5.3				\$ 177,600	

Notes / Assumptions
All rates are weekly

TOTAL ITEM	\$ 112,088,850					
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Client: Client: Roads & Maritime Services
Project: Through Town & Bypass Options - Pacific Highway Wyong
Option: West Bypass
Detail: Handover



ITEM	DESCRIPTION	UNIT	QTY	RATE	TOTAL	COMMENTS
6.1	Handover					Estimated Duration - 6 Months
	Final Reporting	item	1	\$ 100,000	\$ 100,000	
	Legal	item	1	\$ 100,000	\$ 100,000	
	Claims Response	item	1	\$ 100,000	\$ 100,000	
	Noise Survey	item	1	\$ 20,000	\$ 20,000	
	Traffic Verification	item	1	\$ 20,000	\$ 20,000	
	Environmental Monitors	item	1	\$ 20,000	\$ 20,000	
	Total Item 6.1				\$ 360,000	

Notes / Assumptions

ITEM	DESCRIPTION	UTILISATION	QTY	RATE	TOTAL	COMMENTS
6.2	<u>Project Management Services</u>					Estimated Duration - 6 months
	Project manager	50%	26	\$ 5,100	\$ 66,300	
	Clerical assistant	50%	26	\$ 2,000	\$ 26,000	
	Total Item 6.2				\$ 92,300	

Notes / Assumptions

All rates are weekly

ITEM	DESCRIPTION	UTILISATION	QTY	RATE	TOTAL	COMMENTS
6.3	<u>Client Representation</u>					Estimated Duration - 6 months
	Project manager	5%	26	\$ 5,100	\$ 6,630	
	Clerical assistant	5%	26	\$ 2,000	\$ 2,600	
	Total Item 6.3				\$ 9,230	

Notes / Assumptions

All rates are weekly

TOTAL ITEM					\$ 461,530	
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Client: Client: Roads & Maritime Services
 Project: Through Town & Bypass Options - Pacific Highway Wyong
 Option: West Bypass
 Detail: Property Acquisition Quantification



REF ID	DESCRIPTION	UNIT	NO	M2 AREA	TOTAL	COMMENTS
	QUANTIFICATION OF PROPERTY					
1	<u>Johnson Road to Wyong River</u>					
a	Residential	no	3		3	1no property beside Wyong River & 2no along South Tacoma Road
b	Commerical	sq.m		2,650		Unit 1 - Industrial land inc New Building under construction
	Commerical	sq.m		5,750		Unit 2 - Industrial land inc building, Park Trent Real Estate
	Commerical	sq.m		2,520		Unit 3 - Industrial land inc whole building, Booths Car Dealership
	Commerical	sq.m		2,000		Unit 4 - Industrial land inc building, Booths Car Dealership - Temporary Buildings
	Commerical	sq.m		2,800		Unit 5 - Industrial land inc building, Coromal Caravan Products
	Commerical	sq.m		5,000		Unit 6 - Industrial land inc building at corner of South Tacoma & McPherson Rd, Tuggerah Lakes Auto
	Commerical	sq.m		3,000		Unit 7 - Industrial land inc building at corner of South Tacoma & McPherson Rd, Pride Power Products
	Commerical	sq.m		1,800		Unit 8 - Industrial land inc building, Antiques Shop
	Commerical	sq.m		9,700	35,220	Unit 9 - Industrial land inc warehouse building with entrance from Past McPherson Rod
d	Property Adjustments - Commerical	sq.m		5,500	5,500	Industrial Land
e	Government / Rail Corp Land	sq.m		4,550	4,550	Land between Pacific Highway & rail line
f	Land acquisition - Rural	sq.m		4,250		Full land acquisition, Lot lable DP 3368
	Land acquisition - Rural	sq.m		7,000		Full land acquisition beside Wyong River
	Land acquisition - Rural	sq.m		27,000		Partial acquisition from Wyong Aged Care Facility to Bend of McPherson Road, Lot lable DP 3368 1-6A
	Land acquisition - Rural	sq.m		12,000		Partial land acquisitions, Lot lable DP3368, 7 & 7A
	Land acquisition - Rural	sq.m		22,230		Full land acquisitions, Lot lable DP3368, 8
	Land acquisition - Rural	sq.m		24,820		Full land acquisitions, Lot lable DP3368, 8A
	Land acquisition - Rural	sq.m		30,220		Partial land acquisitions - Corner of McPherson / Mardi Road, Lot lable 3368, 9 including corner section
	Land acquisition - Rural	sq.m		30,000	157,520	Section from Mardi Rd bend to Wyong River
2	<u>Wyong River to Watanobbi</u>					
a	Residential	no	1		1	1no property beside Wyong River
f	Land acquisition - Farm	sq.m		84,000	84,000	Open paddocks from Allison Rd to top of Watanobbi - 100m section width
3	<u>Watanobbi (Brittania Drive / Guardian Road) to Pacific Hwy Roundabout</u>					
3.1	<u>Guardian Drive Road</u>					
a	Residential	no	28		28	Properties along Guardian Rd
b	Commerical	sq.m		200		1no Café - Assumed Floor Area
				2,500	2,700	1no Community Centre inc grounds
f	Land acquisition - Residential	sq.m		11,500		Section of Watanobbi Knoll Park
	Land acquisition - Residential	sq.m		9,100		Park area beside community centre
	Land acquisition - Residential	sq.m		2,500		Corner of Britannia Drive & Guardian Road, Lot lable 5923, 5924, 6001, 6001
	Land acquisition - Residential	sq.m		700		Corner of Weaver Crescent, Lot lable 6020
	Land acquisition - Residential	sq.m		3,900		Partial Acquisition from lot lable DP835228
	Land acquisition - Residential	sq.m		530		Lot lable 5064
	Land acquisition - Residential	sq.m		770	29,000	Lot lable 5014
3.2	<u>Brittania Drive</u>					
a	Residential	no	15		15	Properties along Britannia Drive
c	Commerical	sq.m		1,900	1,900	Childcare centre at corner of Britannia Drive / Watanobbi Rd
f	Land acquisition - Residential	sq.m		630		Intersection of Britannia Drive & Harrington Close
	Land acquisition - Residential	sq.m		1,820		Intersection of Britannia Drive & The Grove
	Land acquisition - Residential	sq.m		1,700	4,150	Between Britannia Drive & West St
4	<u>Watanobbi Roundabout to Watalba</u>					
a	Residential	no	1			On Pacific Highway beside shops & layby
	Residential	no	8		9	Beside Watalba roundabout - 15no
c	Property Adjustments - Residential	sq.m	7	2,100	2,100	Beside Watalba roundabout - 7no
d	Property Adjustments - Commerical	no		15,000		Beside shops & layby
	Property Adjustments - Commerical	no		7,000	22,000	2no properties along Pacific Highway, Lot lable DP 372243, 1-2
f	Land acquisition - Residential	sq.m		26,800	26,800	Along length of road

REF ID	DESCRIPTION	UNIT	NO	AREA
	SUMMARY OF PROPERTY ACQUISITION			
a	Residential	no	56	-
b	Commerical / Business	sq.m		37,920
c	Property partial acquisition strip - Residential	sq.m		4,000
d	Property partial acquisition strip - Commerical	sq.m		27,500
e	Government Land	sq.m		4,550
	Land acquisition - TOTAL	sq.m		301,470
f	Land acquisition - Farm	sq.m		84,000
g	Land acquisition - Rural	sq.m		184,320
h	Land acquisition - Residential	sq.m		33,150

Notes:

Areas calculated from the NSW Department of Land Maps & Google Earth

Client: Client: Roads & Maritime Services
Project: Through Town & Bypass Options - Pacific Highway Wyong
Option: West Bypass
Detail: Public Utility Adjustments Quantification

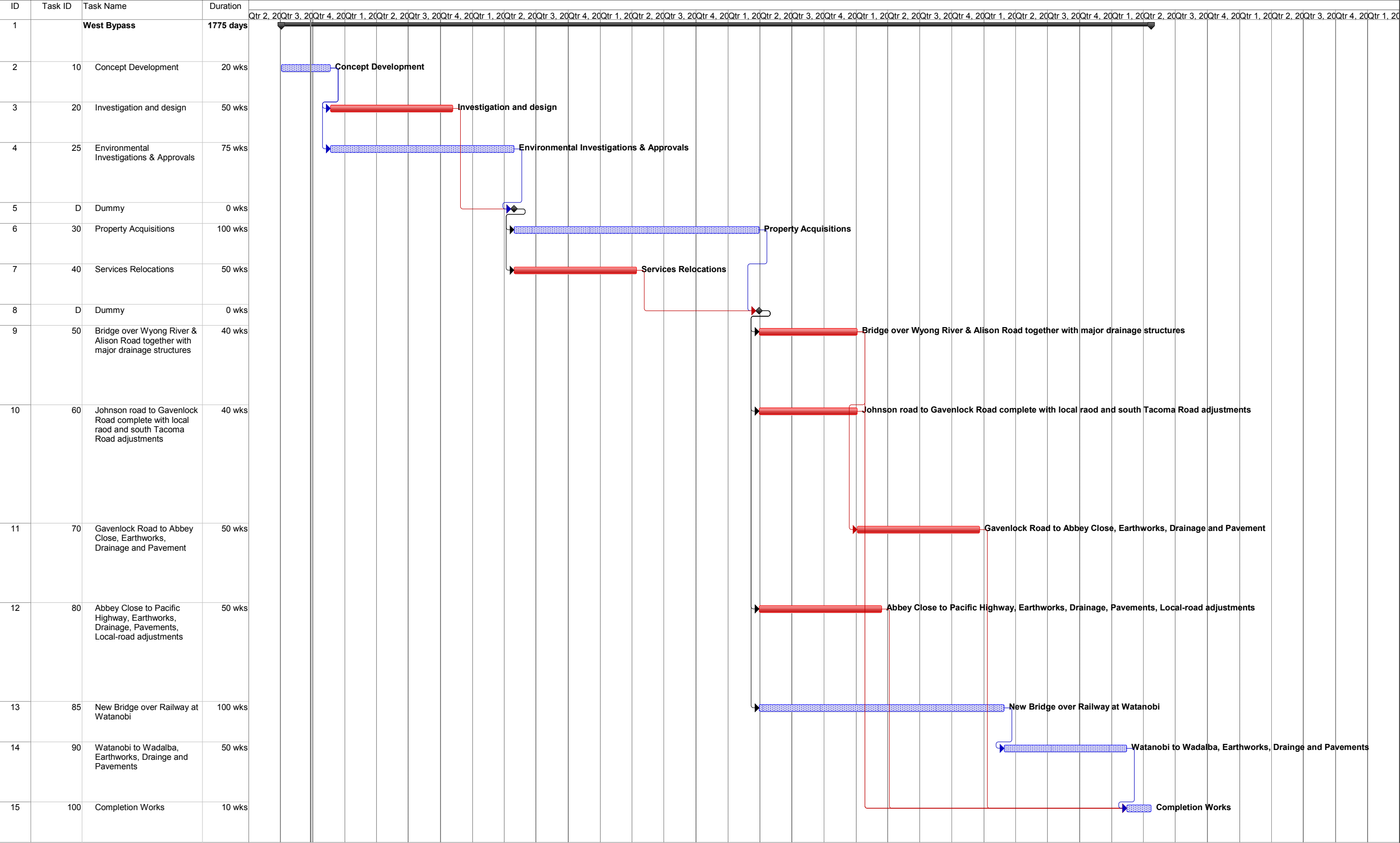


ITEM	DESCRIPTION	UNIT	TOTAL	CONTINGENCY %	CONTINGENCY TOTAL	TOTAL VALUE
1	Power					
	Miscellaneous Power Adjustments - lv	item	\$4,000,000	100%	\$4,000,000	\$8,000,000
	Power Adjustments - hv	item	\$3,000,000	100%	\$3,000,000	\$6,000,000
	Notes:					
	Local power supply includes 415kv & 33kv adjustments including temporary power supply					
	including transformers, pits, temporary power, temporary generators etc					
	New infrastructure work allowed for within direct works estimate					
2	Sewer					
	Assumed 2no rising main at 150mm each to be adjusted	item	\$2,000,000	100%	\$2,000,000	\$4,000,000
	Gravity pit adjustments have been allowed within the direct works					
3	Water					
	Protection & Relocation of Water Utilities	item	\$2,000,000	100%	\$2,000,000	\$4,000,000
4	Telecommunications					
	Local Adjustments	item	\$1,000,000	100%	\$1,000,000	\$2,000,000
	Fibre Optic Adjustments	item	\$2,000,000	100%	\$2,000,000	\$4,000,000
5	Gas					
	Protection & Relocation of Gas Utilities	item	\$2,000,000	100%	\$2,000,000	\$4,000,000
	Total Public Utility Adjustment		\$16,000,000	100%	\$16,000,000	\$32,000,000

Line	Item	Description	Quantity	Unit	Labour	Material	Plant	Subcontract	Rate	Total
1										
2		WYONG BYPASS Option - West By-pass - Johnson Road to Wadalba Roundabout (John St)								
3		Estimate - July'12 - T Rajeswaran								
4										
5	Item									
6										
7		5 Infrastructure Construction - Carriageways								
8		RMS ID 5(a) - 5(C)								
9	5.1	Road Section 1 - From Johnson Rd To Watanobi Roundabout (Brittanania Dr)	1	Item	\$ 1,980,591	\$ 14,046,719	\$ 8,302,097	\$ 14,875,559	\$ 39,204,967	\$ 39,204,967
10	5.1/a	Rural Road -	3,000	m	\$ 753,523	\$ 6,865,575	\$ 3,953,231	\$ 5,879,151	\$ 5,817	\$ 17,451,480
11	5.1/b	Urban Road - 650m + 1300m	1,950	m	\$ 998,961	\$ 6,837,378	\$ 3,721,829	\$ 5,605,762	\$ 8,802	\$ 17,163,930
12	5.1/c	Local Roads	350	m	\$ 16,412	\$ 57,172	\$ 70,576	\$ 60,703	\$ 585	\$ 204,862
13										
14		Items not included in the Group resource above								
15	5.1/d	Southern End slip lane and Tie-In.	1	item	\$ 51,204	\$ 135,182	\$ 133,822	\$ 243,034	\$ 563,243	\$ 563,243
16	5.1/e	Ground Improvement including preloading, Flood relief & wick drain	17,500	m2	\$ 14,784	\$ 124,575	\$ 19,824	\$ 299,781	\$ 26	\$ 458,963
17	5.1/f	Sedbasins	20	each	\$ 30,342	\$ 16,629	\$ 92,372		\$ 6,967	\$ 139,343
18	5.1/g	Open Drains.	6,100	m	\$ 17,436		\$ 57,594	\$ 46,970	\$ 20	\$ 122,000
19	5.1/h	Traffic lights @ Allison Rd	1	each				\$ 180,000	\$ 180,000	\$ 180,000
20		Street Lighting - Residential stretch & on bridge decks.	1	item				\$ 1,759,975	\$ 1,759,975	\$ 1,759,975
21	5.1/i	Traffic Control	1	item	\$ 10,369	\$ 5,910	\$ 43,398	\$ 94,884	\$ 154,561	\$ 154,561
22	5.1/j	Demo work	1	item	\$ 48,840	\$ 2,664	\$ 121,140	\$ 13,320	\$ 185,964	\$ 185,964
23	5.1/k	McPherson Rd rehab & cul de sac	1	Item	\$ 38,720	\$ 1,635	\$ 88,311	\$ 23,280	\$ 151,946	\$ 151,946
24	5.1/l	Signs	1	Item				\$ 56,700	\$ 56,700	\$ 56,700
25	5.1/l	Shared Path allowance for path to one side of Rural rd - 3000m x 2.4m	7,200	m2				\$ 612,000	\$ 85	\$ 612,000
26		EE formula - =sum(10:25) Johnson RD To Watonobi			\$ 1,980,591	\$ 14,046,719	\$ 8,302,097	\$ 14,875,559		\$ 39,204,967
27										
28		RMS ID 5(a) - 5(C)								
29		Road Section 2 - pacific Hwy from Watanobi to Wadalba roundabout - 1,950mtrs	1,950	m	\$ 1,072,270	\$ 3,534,966	\$ 3,898,660	\$ 11,339,497	\$ 10,177	\$ 19,845,393
30	5.1/k	Widen & duplicate existing single lane c/w on both sides between Watanobi and Wadalba Roundabout. . - Excludes foot path & lighting etc - (1.950mtrs)	3,900	m	\$ 779,940	\$ 2,531,619	\$ 2,341,985	\$ 2,768,433	\$ 2,159	\$ 8,421,977
31	5.1/k	Boxout and rebuild existing single lane c/w between Watanobi & Wadalba Roundabout. (1,950mtrs)	1,950	m	\$ 131,779	\$ 812,223	\$ 804,525	\$ 3,106,723	\$ 2,490	\$ 4,855,250
32	5.1/l	Local Roads	200	m	\$ 9,378	\$ 32,670	\$ 40,329	\$ 38,815	\$ 606	\$ 121,192
33										
34		Items not included in the Group resource above								
35	5.1/m	100mm Thick SL72 Mesh in Medians	2,340	m2	\$ 13,914	\$ 99,586	\$ 15,947	\$ 41,744	\$ 73	\$ 171,192
36	5.1/n	SF kerb	3,900	m	\$ 2,632	\$ 37,842	\$ 10,135	\$ 81,688	\$ 34	\$ 132,297
37	5.1/o	Street Lighting - Residential stretch & on bridge decks.	1	item				\$ 2,919,500	\$ 2,919,500	\$ 2,919,500
38	5.1/p	Traffic lights @ Lucca Rd & Am??? rd, Watanobi roundabout	3	each				\$ 826,000	\$ 275,333	\$ 826,000
39	5.1/q	Traffic Control	1	item	\$ 98,326	\$ 19,047	\$ 595,702	\$ 713,544	\$ 1,426,619	\$ 1,426,619
40	5.1/r	Shared path - 2.4m x 1950m x 2 sides	9,360	m2				\$ 795,600	\$ 85	\$ 795,600

Line	Item	Description	Quantity	Unit	Labour	Material	Plant	Subcontract	Rate	Total
41	5.1/s	Demolish - in general all underground utilities, k & G, medians signs etc near roundabouts	1	Item	\$ 36,300	\$ 1,980	\$ 90,036	\$ 9,900	\$ 138,216	\$ 138,216
42	5.1/t	Signs	1	Item				\$ 37,550	\$ 37,550	\$ 37,550
43		EE formula - =sum(30:42) Watanobi To Wadalba (John's St)			\$ 1,072,270	\$ 3,534,966	\$ 3,898,660	\$ 11,339,497		\$ 19,845,393
44										
45	5.2	Bridges & Structures								
46		Bridge No 1- Over Wyong River - 100m long (Girders brdg)	1,200	m2	\$ 5,268	\$ 90,434	\$ 15,380	\$ 4,031,498	\$ 3,452	\$ 4,142,579
47	5.2/a	Bridge over ck	1,200	m2	\$ 2,145	\$ 55,000	\$ 7,607	\$ 4,001,498	\$ 3,389	\$ 4,066,249
48	5.2/b	Embankment - On approaches .	1,500	m3	\$ 3,123	\$ 35,434	\$ 7,772	\$ 30,000	\$ 51	\$ 76,329
49										
50		Bridge No 2 - Over Porter's Ck - Nth of Allison Rd.	600	m2	\$ 3,154	\$ 48,373	\$ 8,160	\$ 1,608,349	\$ 2,780	\$ 1,668,036
51	5.2/c	Bridge over ck	600	m2	\$ 1,072	\$ 24,750	\$ 2,979	\$ 1,578,349	\$ 2,679	\$ 1,607,150
52	5.2/d	Embankment - On approaches .	1,000	m3	\$ 2,082	\$ 23,623	\$ 5,182	\$ 30,000	\$ 61	\$ 60,886
53										
54		Bridge No 3 - Over Rail Track @ Watanobi (inclu Ped walkway) - 2 no	1,734	m2	\$ 148,856	\$ 55,562	\$ 239,982	\$ 6,485,794	\$ 3,997	\$ 6,930,194
55	5.2/e	DEmolish pedestrian Brdg & existing road bridge	2	each	\$ 79,592	\$ 2,400	\$ 213,635	\$ 40,941	\$ 168,284	\$ 336,568
56	5.2/f	Bridge across rail crossing including pedestrian walkway.	1,734	m2	\$ 47,796	\$ 36,000	\$ 9,587	\$ 6,314,654	\$ 3,696	\$ 6,408,036
57	5.2/g	Reinforced Earth wall including parapets	160	m2	\$ 21,469	\$ 17,162	\$ 16,760	\$ 130,199	\$ 1,160	\$ 185,590
58										
59	6	Wyong River Tributary Crossing - TRiple Cell RCBC.	1	each	\$ 8,246	\$ 6,045	\$ 1,857	\$ 264,463	\$ 280,611	\$ 280,611
60	6.1	Noise wall along Guardian rd (At the northern end)	2,800	m2				\$ 980,000	\$ 350	\$ 980,000
61	6.2	Refurbish existing bridge over rail track.	750	m2				\$ 1,350,000	\$ 1,800	\$ 1,350,000
62		EE formula - =sum(47:61) Bridges & Carriageways			\$ 165,524	\$ 200,414	\$ 265,379	\$ 14,720,103		\$ 15,351,420
63										
64	7	Other Related Items								
65		<u>Property</u>								
66	7.1	Dilapidation survey & report.	120	each				\$ 51,840	\$ 432	\$ 51,840
67	7.2	Site Monitoring	36	nth				\$ 67,842	\$ 1,884	\$ 67,842
68	7.3	Domolish existing Houses	45	each	\$ 165,321	\$ 7,800	\$ 407,408	\$ 94,000	\$ 14,990	\$ 674,529
69	7.4	Property Aquisition	45	each		\$ 42,500,000			\$ 944,444	\$ 42,500,000
70	7.5	Property adjustments	50	each				\$ 450,000	\$ 9,000	\$ 450,000
71										
72	8	Treatment of Acid Sulphate Soils								
73	8.1	Testing	30	each				\$ 9,000	\$ 300	\$ 9,000
74	8.2	Treatment of Acid Sulphate Soils	2,000	m3	\$ 7,497		\$ 27,733	\$ 6,600	\$ 21	\$ 41,831
75	8.3	Supply of Hydrated Lime @ 2% by wt	80	tonne		\$ 28,274			\$ 353	\$ 28,274
76		EE formula - =sum(66:75) Other related Items			\$ 172,818	\$ 36,074	\$ 435,141	\$ 679,282		\$ 1,323,315
77										
78		EE formula - =sum(5:75) Total Direct Cost			\$ 3,391,203	\$ 17,818,174	\$ 12,901,277	\$ 41,614,441		\$ 75,725,095
79										
		Total for all items			\$ 3,391,203	\$ 17,818,174	\$ 12,901,277	\$ 41,614,441		\$ 75,725,095

West Bypass



Project: West Bypass.mpp
Date: Tue 25/09/12

Task

Task Progress

Critical Task

Critical Task Progress

Milestone

Summary

Rolled Up Task

Rolled Up Critical Task

Rolled Up Milestone

Rolled Up Progress

Split

External Tasks

Project Summary

Group By Summary

Inactive Task

Inactive Milestone

Inactive Summary

Manual Task

Duration-only

Manual Summary Rollup

Manual Summary

Start-only

Finish-only

Deadline



Scale
0 100 200 300 400 500

SH10 PACIFIC HIGHWAY - WYONG BYPASS
WESTERN ROUTE

20 May 2008