

Appendix 9

Preferred Option

- Scope
- Estimate
- Program
- RMS Drawings

Preferred Option - Widened Existing Carriageway

Scope

The widened existing carriageway through town option is to provide a new four-lane carriageway generally in the same position as the existing highway in the town centre.

- 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 all current turning movements retained i.e. no intersection improvements.
- A one-way service road between Johnson Road and the Wyong River together with an upgrade to South Tacoma Road up to a position just under the existing Rail Bridge. A new intersection with South Tacoma Road and McPherson Road.
- New Bridge over the Wyong River for northbound traffic.
- Refurbish the existing road bridge over the Wyong River consistent with the expected life of the upgraded highway, 20 years.
- Upgrade River Road intersection with local street adjustments.
- New dual carriageway Pacific Highway from Johnson Road to 100m south of Cutler Drive, upgraded intersections at Church Street, Anzac Avenue, North Road.
- New traffic signals at Church Street, Rose Street, Anzac Avenue and North Road intersections.
- New left in, left out intersections at South Tacoma Road, River Road, Alison Road .
- Bridge extension over the new bus-way at Rose Street.
- Retaining walls as required.
- Shared path cycle-ways from Johnson Road (south) to Cutler Drive (north).
- All highway pavements to be new heavy duty bound base with deep asphalt overlay.
- Urban standard throughout entire length of works, i.e. to include street lighting, kerb and gutter drainage, shared pedestrian cycle-way path, property access, landscaping and parking.
- Removal of the Station Masters Cottage and Warner Shops complex.
- The northern limit is 100m south of Cutler Drive.

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



No	Item	Estimate (Exc Contingency)	Contingency		Estimate (Inc Contingency)	% of Total Estimate
			%	Amount		
1	Project Development					
1.1	Route / Concept / EIS	\$2,540,000	40%	\$1,016,000	\$3,556,000	
1.2	Project Management Services	\$541,800	30%	\$162,540	\$704,340	
1.3	Client Representation	\$49,536	10%	\$4,954	\$54,490	
	Sub total	\$3,131,336	38%	\$1,183,494	\$4,314,830	3.1%
2	Investigation and Design					
2.1	Investigation and Design	\$4,187,500	50%	\$2,093,750	\$6,281,250	
2.2	Project Management Services	\$581,245	30%	\$174,374	\$755,619	
2.3	Client Representation	\$24,941	10%	\$2,494	\$27,435	
	Sub total	\$4,793,686	47%	\$2,270,618	\$7,064,303	5.1%
3	Property Acquisitions					
3.1	Property Acquisitions	\$7,542,500	55%	\$4,148,375	\$11,690,875	
3.2	Professional Services for Property	\$113,138	30%	\$33,941	\$147,079	
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	\$7,845,958	54%	\$4,232,028	\$12,077,986	8.7%
4	Public Utility Adjustments					
4.1	Public Utility Adjustments	\$11,500,000	100%	\$11,500,000	\$23,000,000	
4.2	Project Management Services	\$442,000	30%	\$132,600	\$574,600	
4.3	Client Representation	\$33,280	10%	\$3,328	\$36,608	
	Sub total	\$11,975,280	97%	\$11,635,928	\$23,611,208	17.1%
5	Construction of Works					
5.1	Infrastructure	\$68,000,000	22%	\$14,960,000	\$82,960,000	
5.2	Project Management Services	\$5,506,750	30%	\$1,652,025	\$7,158,775	
5.3	Client Representation	\$177,600	10%	\$17,760	\$195,360	
	Sub total	\$73,684,350	23%	\$16,629,785	\$90,314,135	65.4%
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	0.5%
	TOTAL	\$101,892,139	35%	\$36,160,465	\$138,052,605	100%

No	Item	Estimate (Exc Contingency)	Estimate (Contingency)	Estimate Total
Total Project Management Allowances				
i	Project Management	\$7,317,495	\$2,195,249	\$9,512,744
ii	Client Presentation	\$331,507	\$33,151	\$364,657
Reality Checks				
		Cost / km (\$m)	Length of Road (km)	
iii	Project Cost per kilometer	\$67.02	2.06	
iv	Project Cost per lane kilometer	\$16.75	8.24	

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



ITEM	DESCRIPTION	UNIT	RATE	TOTAL	COMMENTS
1.1	<u>Route / Concept / EIS</u>				Estimated Duration - 12 months
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	\$ 20,000	\$ 20,000	
1.1.3	Traffic Modelling				
	Traffic model for concept design solutions	item	\$ 75,000	\$ 75,000	
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	\$ 10,000	\$ 10,000	
1.1.6	Survey				
	Ground survey model	item	\$ 200,000	\$ 200,000	
1.1.7	Specialist Sub Consultants				
	Urban Design	item	\$ 60,000	\$ 60,000	
	Noise	item	\$ 100,000	\$ 100,000	
	Hydrology	item	\$ 25,000	\$ 25,000	
	Archaeology	item	\$ 50,000	\$ 50,000	
	Total Item 1.1			\$ 2,540,000	

Notes / Assumptions

ITEM	DESCRIPTION	UTILISATION	WEEKS	RATE	TOTAL	COMMENTS
1.2	<u>Project Management Services</u>					Estimated Duration - 12 months
	Project manager	100%	77	\$ 5,100	\$ 394,740	
	Clerical assistant	20%	77	\$ 2,000	\$ 30,960	
	Assisting Engineer	50%	77	\$ 3,000	\$ 116,100	
	Total Item 1.2				\$ 541,800	

Notes / Assumptions

All rates are weekly

ITEM	DESCRIPTION	UTILISATION	WEEKS	RATE	TOTAL	COMMENTS
1.3	<u>Client Representation</u>					Estimated Duration - 12 months
	Project manager	10%	77	\$ 5,100	\$ 39,474	
	Clerical assistant	5%	77	\$ 2,000	\$ 7,740	
	Assisting Engineer	1%	77	\$ 3,000	\$ 2,322	
	Total Item 1.3				\$ 49,536	

Notes / Assumptions

All Rates are weekly

TOTAL ITEM	\$ 3,131,336					
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Client: Roads & Maritime Services
 Project: Through Town & Bypass Options - Pacific Highway Wyong
 Option: Preferred Option
 Detail: Investigation and Design



ITEM	DESCRIPTION	UNIT	RATE	TOTAL	COMMENTS
2.1	<u>Investigation and Design</u>				Estimated Duration - 9 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	\$ 3,375,000	\$ 3,375,000	
2.1.2	Detailed Geotechnical Design				
	Investigation and reporting, test pits, boreholes, ground model, soil testing etc	item	\$ 225,000	\$ 225,000	
2.1.3	Survey				
	Ground survey model	item	\$ 187,500	\$ 187,500	
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 advice etc
	Total Item 2.1			\$ 4,187,500	

ITEM	DESCRIPTION	UTILISATION	WEEKS	RATE	TOTAL	COMMENTS
2.2	<u>Project Management Services</u>					Estimated Duration - 9 months
	Project manager	100%	39	\$ 5,100	\$ 198,747	
	Clercial assistant	20%	39	\$ 2,000	\$ 15,588	
	Assisting Engineer	100%	39	\$ 3,000	\$ 116,910	
	Tender Documentation	item	1	\$ 250,000	\$ 250,000.00	
	Total Item 2.2				\$ 581,245	

Notes / Assumptions
 All rates are weekly

ITEM	DESCRIPTION	UTILISATION	WEEKS	RATE	TOTAL	COMMENTS
2.3	<u>Client Representation</u>					Estimated Duration - 9 months
	Project manager	10%	39	\$ 5,100	\$ 19,874.70	
	Clercial assistant	5%	39	\$ 2,000	\$ 3,897	
	Assisting Engineer	1%	39	\$ 3,000	\$ 1,169.10	
	Total Item 2.3				\$ 24,941	

Notes / Assumptions
 All rates are weekly

TOTAL ITEM				\$ 4,793,686		
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Client: Roads & Maritime Services
Project: Through Town & Bypass Options - Pacific Highway Wyong
Option: Preferred Option
Detail: Property Acquisitions



ITEM	DESCRIPTION	UNIT	QTY	RATE	TOTAL	COMMENTS
3.1	Property Acquisitions					Estimated Duration - 2 years
	Commerical Property	sq.m	1,850	\$ 2,800	\$ 5,180,000	Refer to property acquisition quantification
	Railcorp Land	sq.m	6,300	\$ 375	\$ 2,362,500	
	Council Land	sq.m	20,100	\$ -	\$ -	
	Total Item 3.1				\$ 7,542,500	

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	\$ 7,542,500	1.00%	\$ 75,425	
	Legal Advice	\$ 7,542,500	0.50%	\$ 37,713	
	Total Item 3.2			\$ 113,138	

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	
	Clercial 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	
	Clercial assistant	5%	104	\$ 2,000	\$ 10,400	
	Total Item 3.4				\$ 36,920	

Notes / Assumptions

All rates are weekly

TOTAL ITEM	\$ 7,845,958
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Client: Roads & Maritime Services
Project: Through Town & Bypass Options - Pacific Highway Wyong
Option: Preferred Option
Detail: Public Utility Adjustments



ITEM	DESCRIPTION	UNIT	TOTAL	COMMENTS
4.1	Adjust Utilities			Estimated Duration - 12 months
	Water Utilities			
	Relocation of services - Water	item	\$ 1,750,000	Refer to public utility quantification spreadsheet
	Relocation of services - Sewer	item	\$ 1,250,000	Refer to public utility quantification spreadsheet
	Telecommunications			
	Relocation of services	item	\$ 1,500,000	Refer to public utility quantification spreadsheet
	Power / Electrical Utilities HV & LV			
	Relocation of services	item	\$ 5,000,000	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		\$ 11,500,000	

Notes

Please see spreadsheet 'Services' for further breakdown

ITEM	DESCRIPTION	UTILISATION	WEEKS	RATE	TOTAL	COMMENTS
4.2	Project Management Services					Estimated Duration - 12 months
	Project manager	100%	52	\$ 5,100	\$ 265,200	
	Assisting Engineer	100%	52	\$ 3,000	\$ 156,000	
	Clerical assistant	20%	52	\$ 2,000	\$ 20,800	
	Total Item 4.2				\$ 442,000	

Notes / Assumptions

rates are weekly

ITEM	DESCRIPTION	UTILISATION	WEEKS	RATE	TOTAL	COMMENTS
4.3	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 4.3				\$ 33,280	

Notes / Assumptions

All rates are weekly

TOTAL ITEM	\$ 11,975,280				
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Client: Roads & Maritime Services
 Project: Through Town & Bypass Options - Pacific Highway Wyong
 Option: Preferred Option
 Detail: Construction of Works



ITEM	DESCRIPTION	TOTAL	COMMENTS
5.1	Infrastructure		Estimated Duration - 3 years
	Direct Works Costs	\$ 45,300,000	
	Overhead Costs	\$ 13,900,000	
	Contractors Margin	\$ 8,800,000	
	Total Item 5.1	\$ 68,000,000	

ITEM	DESCRIPTION	UNIT	RATE	TOTAL	COMMENTS
5.2 (a)	Project Management Services - Support Services				Estimated Duration - 3 years
	Design Support	item	\$ 168,750	\$ 168,750	
	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	\$ 680,000.00	\$ 680,000	
	Total Item 5.2 (a)			\$ 1,618,750	

ITEM	DESCRIPTION		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)					\$ 5,506,750	

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	\$ 73,684,350
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Client: Roads & Maritime Services
 Project: Through Town & Bypass Options - Pacific Highway Wyong
 Option: Preferred Option
 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	\$ 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	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						\$ 461,530
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Client: Roads & Maritime Services
 Project: Through Town & Bypass Options - Pacific Highway Wyong
 Option: Preferred Option
 Detail: Property Acquisitions Quantification



ITEM	DESCRIPTION	NO	FLOOR AREA	PROPERTY AREA	COMMENTS
1	<u>Property Acquisition</u>				
1.1	Commerical Property	1	180	800	Station Masters Cottage
		1	670	1050	Railway Sq shops (Corner of Church St)
	Total	2	850	1850	Property Area brought forward to summary

ITEM	DESCRIPTION	LAND AREA	LAND OWNER	COMMENTS
2	<u>Land Acquisition</u>			
2.1	Wyong River Bridge to Church St	6,300	Railcorp	Along Railway lane before station masters cottage
2.2	Church St to Rose St	3,250	Council	Section 1 within train station car park
		6,100	Council	Section 2 within train station car park
2.3	Rose St to Anzac St	3,700	Council	Rose St to Anzac St along railway line
2.4	Anzac St to North Road	2,600	Council	Along Railway lane
		650	Council	Anzac St intersection allowances
2.5	North Road to End	3,800	Council	Along railway track
	Total	26,400		
	Council Owned Land	20,100		
	Rail Corp Owned Land	6,300		

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

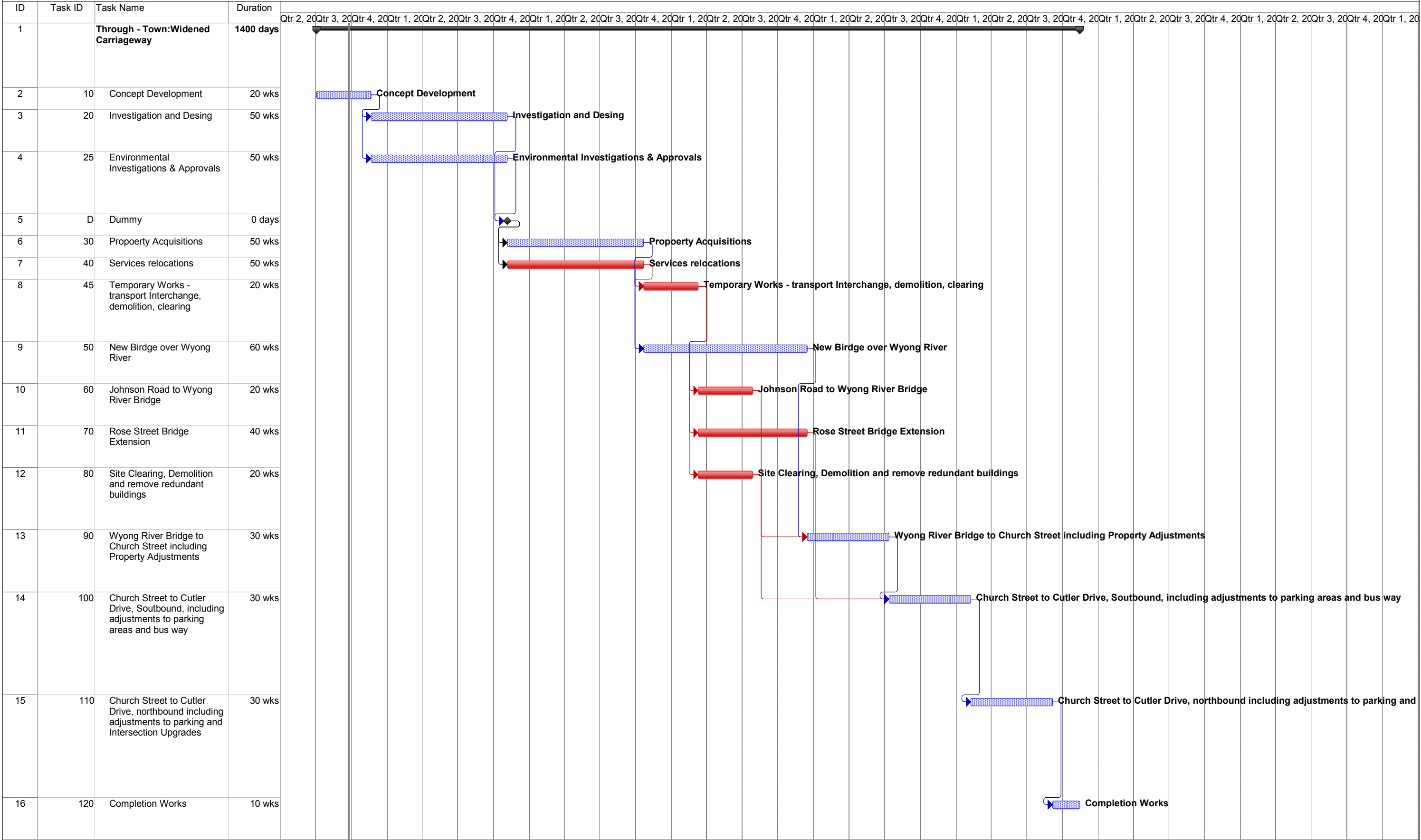


ITEM	DESCRIPTION	UNIT	TOTAL	CONTINGENCY %	CONTINGENCY TOTAL	TOTAL VALUE
1	Power					
	Miscellaneous Power Adjustments - lv	item	\$5,000,000	100%	\$5,000,000	\$10,000,000
	Power Adjustments - hv	item	\$0	100%	\$0	\$0
	Notes:					
	Local power supply includes 415kv & 33kv adjustments including temporary 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	\$1,250,000	100%	\$1,250,000	\$2,500,000
	Gravity pit adjustments have been allowed within the direct works					
3	Water					
	Protection & Relocation of Water Utilities	item	\$1,750,000	100%	\$1,750,000	\$3,500,000
4	Telecommunications					
	Local Adjustments	item	\$1,500,000	100%	\$1,500,000	\$3,000,000
5	Gas					
	Protection & Relocation of Gas Utilities	item	\$2,000,000	100%	\$2,000,000	\$4,000,000
	Total Public Utility Adjustment		\$11,500,000	100%	\$11,500,000	\$23,000,000

Line	Item	Description	Quantity	Unit	Labour	Material	Plant	Subcontract	Rate	Total
1										
2		WYONG BYPASS - Widened Existing Carrigeway - From Nth of Johnson Road to 100m South Of Cutler Drive.								
3		Estimate - July12 - T Rajeswaran								
4	ITEM									
5										
6	1	GENERAL								
7	1.1	Property Adjustments	10	each				\$ 100,000	\$ 10,000	\$ 100,000
8	1.2	Provision for temp bus interchange and pedestrial access	1	each	\$ 8,547	\$ 354,560	\$ 4,440		\$ 367,547	\$ 367,547
9	1.3	Dilapidation survey & report.	300	each				\$ 172,800	\$ 576	\$ 172,800
10										
11		EE formula - =sum(7:10) General			\$ 8,547	\$ 354,560	\$ 4,440	\$ 272,800		\$ 640,347
12										
13	2	TRAFFIC CONTROL								
14	2.1	Traffic Control	1	Item	\$ 132,144	\$ 48,548	\$ 583,482	\$ 1,159,469	\$ 1,923,642	\$ 1,923,642
15		EE formula - =sum(13:14) Traffic Control			\$ 132,144	\$ 48,548	\$ 583,482	\$ 1,159,469		\$ 1,923,642
16										
17	3	ENVIRONMENTAL								
18	3.1	Sedimentataion control	1	Item	\$ 54,036	\$ 16,278	\$ 31,251		\$ 101,565	\$ 101,565
19	3.2	Monitoring	1	item				\$ 93,659	\$ 93,659	\$ 93,659
20		EE formula - =sum(18:19) Environmental			\$ 54,036	\$ 16,278	\$ 31,251	\$ 93,659		\$ 195,224
21										
22		DEmolition								
23	4.1	Demolition - Johnson RD to Cutler Dr	1	Item	\$ 88,000	\$ 800	\$ 287,470	\$ 132,000	\$ 508,270	\$ 508,270
24	4.2	Station Masters building & Warner shops	1	item	\$ 58,000	\$ 3,000	\$ 136,419	\$ 31,800	\$ 229,219	\$ 229,219
25	4.2	Rail Corp maintenace yard	1	item	\$ 47,000	\$ 2,400	\$ 109,135	\$ 31,000	\$ 189,535	\$ 189,535
26		EE formula - =sum(23:25) Demolition			\$ 193,000	\$ 6,200	\$ 533,024	\$ 194,800		\$ 927,024
27										
28	5	Earthworks								
29		Earthworks - Johnson road to Cutler Dr.	1,940	Item	\$ 628,817	\$ 1,279,291	\$ 3,066,399	\$ 903,926	\$ 3,030	\$ 5,878,433
30	5.1	From Johnson Rd To Cutler Drive - Clear & grub, strip top soil, excavation, cut/fill, select, drainage blanket, unsuitable etc. Lgth is ch to chainage and excludes brdge deck.	1,940	item	\$ 628,817	\$ 1,279,291	\$ 3,066,399	\$ 903,926	\$ 3,030	\$ 5,878,433
31		EE formula - =sum(30) Earthworks			\$ 628,817	\$ 1,279,291	\$ 3,066,399	\$ 903,926		\$ 5,878,433
32										
33	6	DRAINAGE								
34	6.1	SWD including pipes, pits, open drain, GPT etc.	5,800	m	\$ 382,325	\$ 1,077,380	\$ 491,120	\$ 972,002	\$ 504	\$ 2,922,828
35	6.2	Kerb & Gutter - SA, SF & SO types	11,140	m	\$ 31,792	\$ 282,351	\$ 72,325	\$ 225,400	\$ 55	\$ 611,868
36		EE formula - =sum(33:35) Drainage			\$ 414,117	\$ 1,359,731	\$ 563,445	\$ 1,197,402		\$ 3,534,696
37										
38	7	PAVEMENTS								
39	7.1	Local Roads	1	m2						
40	7.2	Pavement - Johnson Rd to Cutler Dr	57,758	m2	\$ 355,044	\$ 1,509,217	\$ 845,456	\$ 4,150,759	\$ 119	\$ 6,860,475
41		EE formula - =sum(39:40) Pavements			\$ 355,044	\$ 1,509,217	\$ 845,456	\$ 4,150,759		\$ 6,860,475
42										
43	8	BRIDGES & STRUCTURES								
44		Structures								
45	8.1	Retaining Walls - Block infill & Concrete Retaining wall.	3,988	m2	\$ 768,158	\$ 1,765,054	\$ 368,592	\$ 1,710,057	\$ 1,156	\$ 4,611,861

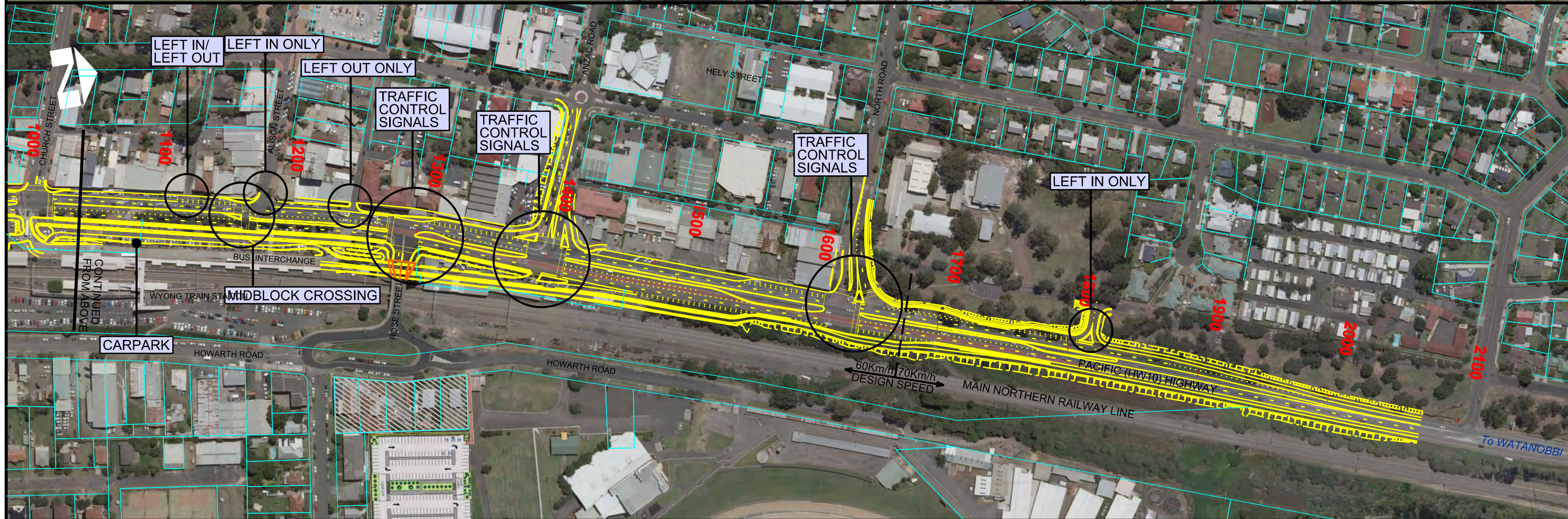
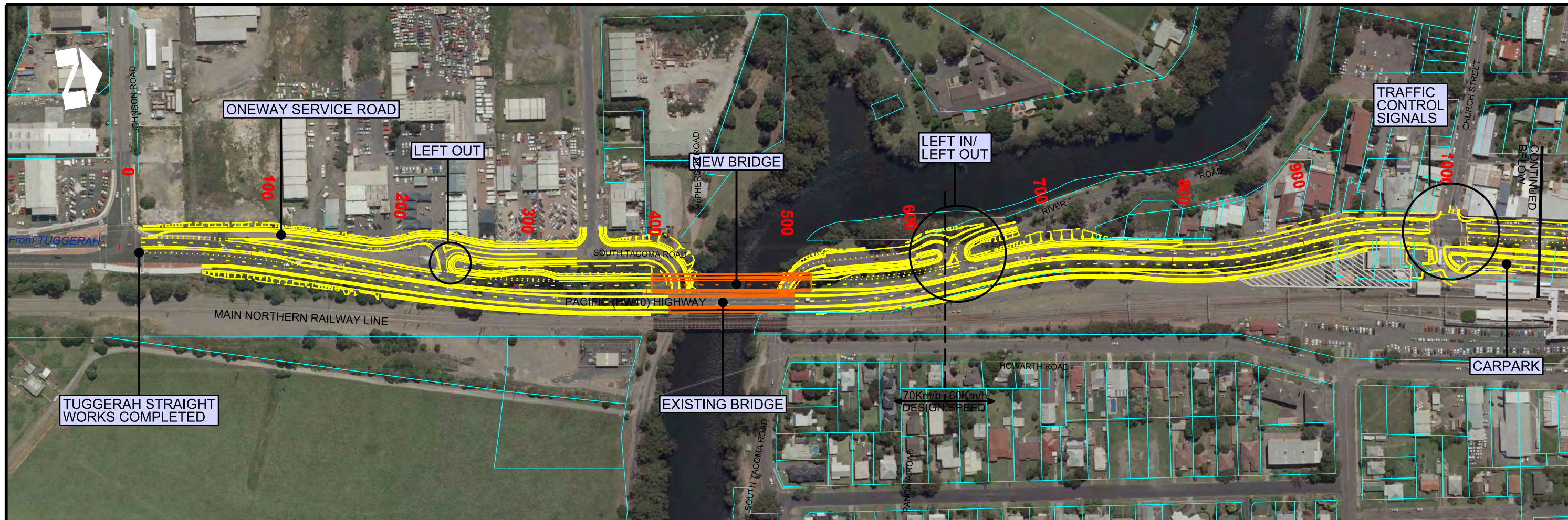
Line	Item	Description	Quantity	Unit	Labour	Material	Plant	Subcontract	Rate	Total
1										
2		WYONG BYPASS - Widened Existing Carrigeway - From Nth of Johnson Road to 100m South Of Cutler Drive.								
3		Estimate - July12 - T Rajeswaran								
46										
47		Bridge Structures								
48		Bridge No 1 - Wyong River	1,440	item	\$ 72,475	\$ 186,414	\$ 80,678	\$ 7,266,201	\$ 5,282	\$ 7,605,768
49	8.1/a	Prepare bridge corridor including Earth embankment on approaches.	1		\$ 20,834	\$ 41,636	\$ 53,183	\$ 6,762	\$ 122,415	\$ 122,415
50	8.1/b	Bridge across Wyong river including pedestrian walkway.	1,440	m2	\$ 1,188	\$ 108,000	\$ 8,022	\$ 6,950,484	\$ 4,908	\$ 7,067,694
51	8.1/c	Reinforced Earth wall including parapets	320	m2	\$ 50,453	\$ 36,778	\$ 19,473	\$ 308,955	\$ 1,299	\$ 415,659
52										
53	8.3	Bridge 2 - Extend Rose street bridge over new underpass	360	m2	\$ 17,848	\$ 20,140	\$ 140,991	\$ 2,776,355	\$ 8,209	\$ 2,955,333
54		bridge	360	m2		\$ 11,000		\$ 2,495,678	\$ 6,963	\$ 2,506,678
55		Earthworks under bridge	4,800	m3	\$ 17,600	\$ 1,640	\$ 140,856	\$ 236,160	\$ 83	\$ 396,256
56		F Type barrier & crash couseion etc	30	m	\$ 248	\$ 7,500	\$ 135	\$ 44,518	\$ 1,747	\$ 52,400
57										
58	8.4	Refurbish existing brdge over Wyong River.	1,080	m2				\$ 1,944,000	\$ 1,800	\$ 1,944,000
59		EE formula - =sum(45:58) Bridge & structures			\$ 858,481	\$ 1,971,608	\$ 590,261	\$ 13,696,613		\$ 17,116,962
60										
61		9 MISCELLANEOUS								
62	9.1a	Lighting - Johnson Rd To Cutler Dr	120	no				\$ 1,830,400	\$ 15,253	\$ 1,830,400
63	9.2	Traffic Lights - Church st, Roase st, Anzac Ave & Nth Rd	4	no				\$ 1,152,000	\$ 288,000	\$ 1,152,000
64	9.3	Signs	116	no				\$ 147,450	\$ 1,271	\$ 147,450
65	9.4	Topsoil and Turf	7,640	m2	\$ 5,777	\$ 40,755	\$ 14,294	\$ 70,560	\$ 17	\$ 131,386
66	9.5	Concrete Medians	4,200	m2	\$ 88,350	\$ 177,700	\$ 16,338	\$ 161,326	\$ 106	\$ 443,713
67	9.6	Concrete path 9blue grayDriveways	15,160	m2	\$ 232,271	\$ 585,828	\$ 58,972	\$ 452,367	\$ 88	\$ 1,329,439
68	9.8	Hand rails & Ped fencing	1,130	m				\$ 529,000	\$ 468	\$ 529,000
69	9.9	Noise Attenuation	1	m2						
70	9.1	Urban Design big no	1	item						
71	9.11	Guardrail / Wire rope	1,430	m				\$ 150,900	\$ 106	\$ 150,900
72		F Type barrier	600	m	\$ 4,950	\$ 150,000	\$ 2,695	\$ 10,350	\$ 280	\$ 167,995
73	9.12	Landscape - Remove & relocate palm trees, and general landscape	1	Item	\$ 67,692	\$ 31,485	\$ 173,988	\$ 2,053,308	\$ 2,326,472	\$ 2,326,472
74		EE formula - =sum(62:73) Miscellaneous			\$ 399,040	\$ 985,767	\$ 266,286	\$ 6,557,660		\$ 8,208,754
75										
76		EE formula - =sum(4:73)			\$ 3,043,226	\$ 7,531,200	\$ 6,484,043	\$ 28,227,088		\$ 45,285,558
77										
78										
		Total for all items			\$ 3,043,226	\$ 7,531,200	\$ 6,484,043	\$ 28,227,088		\$ 45,285,558

Through - Town: Widened Carriageway

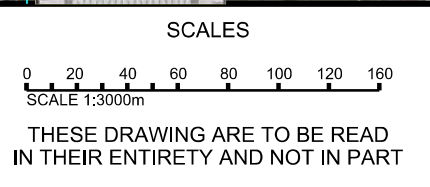


Project: Through-Town Widened Carri
Date: Tue 25/09/12

Task	<div></div>	Milestone	<div></div>	Rolled Up Milestone	<div></div>	Project Summary	<div></div>	Inactive Summary	<div></div>	Manual Summary	<div></div>
Task Progress	<div></div>	Summary	<div></div>	Rolled Up Progress	<div></div>	Group By Summary	<div></div>	Manual Task	<div></div>	Start-only	<div></div>
Critical Task	<div></div>	Rolled Up Task	<div></div>	Split	<div></div>	Inactive Task	<div></div>	Duration-only	<div></div>	Finish-only	<div></div>
Critical Task Progress	<div></div>	Rolled Up Critical Task	<div></div>	External Tasks	<div></div>	Inactive Milestone	<div></div>	Manual Summary Rollup	<div></div>	Deadline	<div></div>



J	ISSUED FOR ESTIMATION	AH	21/01/2012
I	ROLL PLAN ISSUED	-	-
H	REISSUED FOR PUBLIC DISPLAY	AH	28/10/2011
G	REISSUED FOR PUBLIC DISPLAY	AH	06/10/2011
F	ISSUED FOR PUBLIC DISPLAY	AH	21/05/2011
No.	Revision Description	Initials	Date
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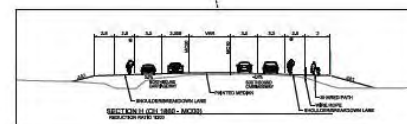
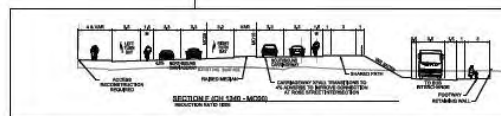
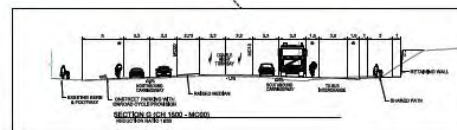
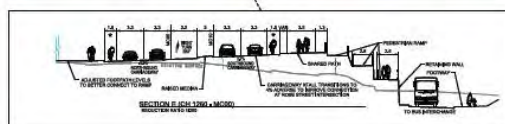
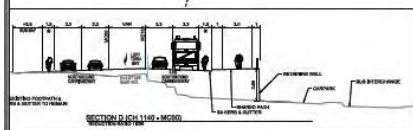
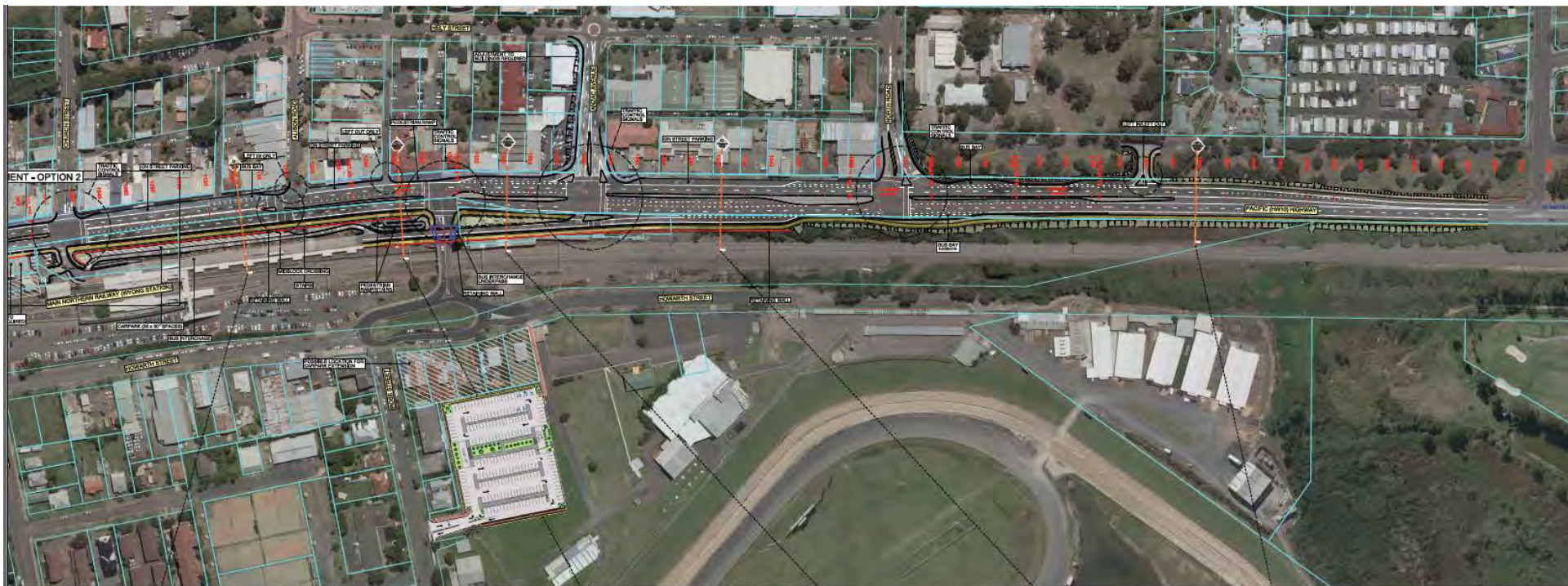
INFRASTRUCTURE SERVICES
CENTRAL COAST SERVICES HUNTER

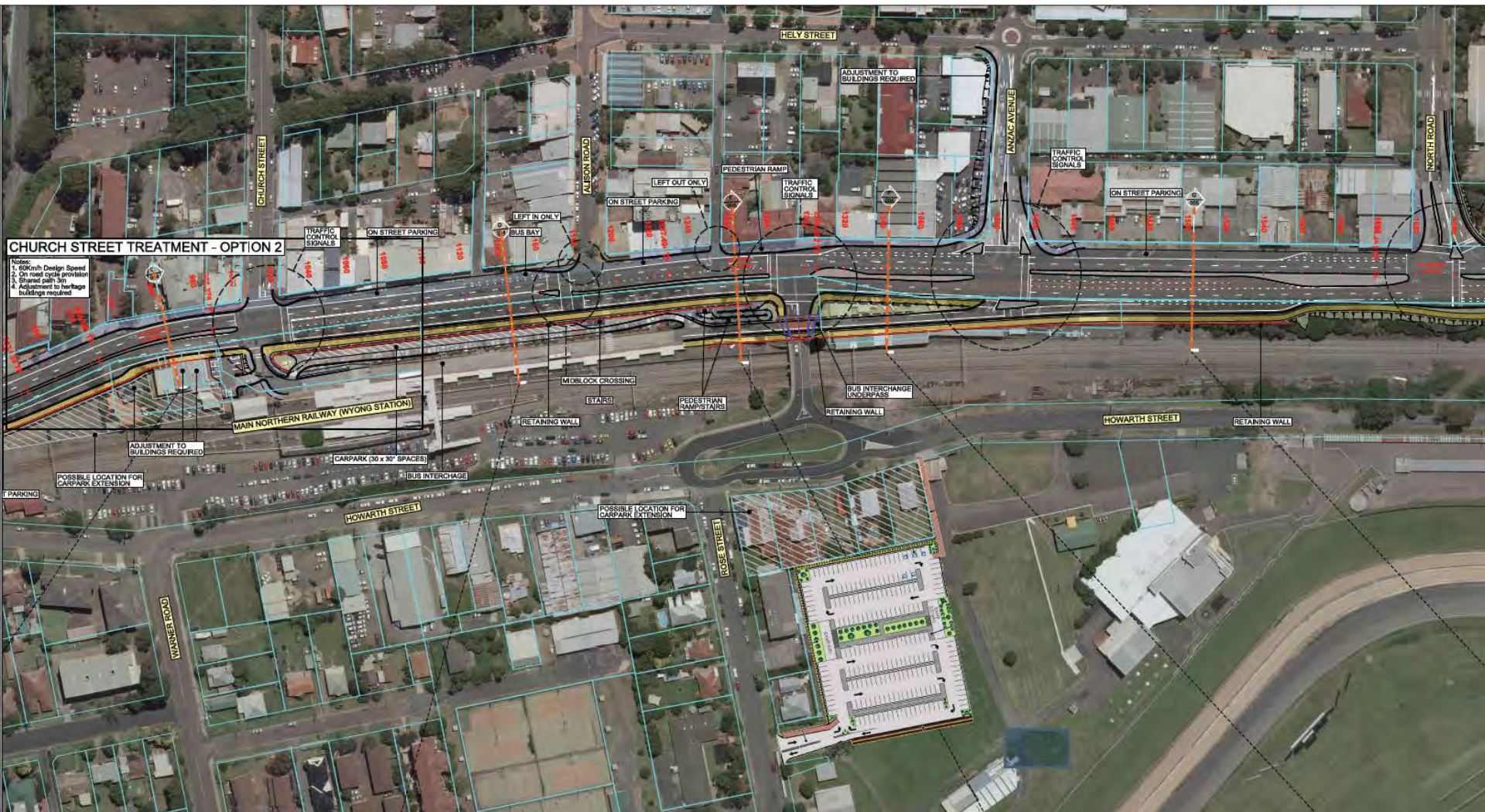
PREPARED BY **HILLARD CIVIL**

ROADS AND MARITIME SERVICES

WYONG SHIRE COUNCIL
HW10 PACIFIC HIGHWAY UPGRADE
STRATEGIC DESIGN OPTION 9A
GENERAL OVERVIEW PLAN
SHEET 1 OF 1

FILE No. 10/505.1851	DRAWING 0010 505 SD 5309.dgn	SHEET No. 003
REGISTRATION NUMBER 0010.505.SD.5309		





Appendix 10

RMS Road User Benefit Analysis

Attachment Roads and Maritime Services Road User Benefit Analysis Wyong Town Centre

Project - Wyong Town Centre analysis based on Paramics
modelling
(for Jai
Reddy)
Option - 0.5% growth scenario
25% contingency =
\$130 M

Discount Rate	Net Present Value (\$M)	NPVI	Benefit Cost Ratio	First Year Benefit (\$M)	First Year Rate of Return
4%	\$1,953.71	19.01	20.0	\$44.58	43.4%
7%	\$1,129.73	13.02	14.0	\$35.51	40.9%
10%	\$673.48	9.15	10.1	\$28.46	38.7%

Estimated Breakdown of Benefits	
Travel Time Savings	87.0%
Vehicle Operating Costs	12.7%
Safety	0.3%
	100.0%

	Present Value of - (\$M)			
Discount Rate	Capital Costs	Increased Maintenance Costs	Total Costs	Benefits
4%	\$102.79	\$0.00	\$102.79	\$2,056.50
7%	\$86.76	\$0.00	\$86.76	\$1,216.49
10%	\$73.60	\$0.00	\$73.60	\$747.08

Roads and Maritime Services - Wyong Town Center Economic Analysis

Project - Wyong Town Centre analysis based on
Paramics modelling
(for Jai
Reddy)
Option - 0.5% growth scenario
50% contingency =
\$155 M

Discount Rate	Net Present Value (\$M)	NPVI	Benefit Cost Ratio	First Year Benefit (\$M)	First Year Rate of Return
4%	\$1,933.94	15.78	16.8	\$44.58	36.4%
7%	\$1,113.05	10.76	11.8	\$35.51	34.3%
10%	\$659.32	7.51	8.5	\$28.46	32.4%

Estimated Breakdown of Benefits	
Travel Time Savings	87.0%
Vehicle Operating Costs	12.7%
Safety	0.3%
	100.0%

	Present Value of - (\$M)			
Discount Rate	Capital Costs	Increased Maintenance Costs	Total Costs	Benefits
4%	\$122.56	\$0.00	\$122.56	\$2,056.50
7%	\$103.44	\$0.00	\$103.44	\$1,216.49
10%	\$87.76	\$0.00	\$87.76	\$747.08

Roads and Maritime Services - Wyong Town Center Economic Analysis

Project - Wyong Town Centre analysis based on
Paramics modelling
(for Jai
Reddy)
Option - 0.5% growth scenario
90% contingency =
\$197 M

Discount Rate	Net Present Value (\$M)	NPVI	Benefit Cost Ratio	First Year Benefit (\$M)	First Year Rate of Return
4%	\$1,900.73	12.20	13.2	\$44.58	28.6%
7%	\$1,085.02	8.25	9.3	\$35.51	27.0%
10%	\$635.54	5.70	6.7	\$28.46	25.5%

Estimated Breakdown of Benefits	
Travel Time Savings	87.0%
Vehicle Operating Costs	12.7%
Safety	0.3%
	100.0%

	Present Value of - (\$M)			
Discount Rate	Capital Costs	Increased Maintenance Costs	Total Costs	Benefits
4%	\$155.77	\$0.00	\$155.77	\$2,056.50
7%	\$131.47	\$0.00	\$131.47	\$1,216.49
10%	\$111.54	\$0.00	\$111.54	\$747.08

Project - Wyong Town Centre analysis based on
Paramics modelling
(for Jai
Reddy)
Option - 1.0% growth scenario
25% contingency =
\$130 M

Discount Rate	Net Present Value (\$M)	NPVI	Benefit Cost Ratio	First Year Benefit (\$M)	First Year Rate of Return
4%	\$1,852.49	18.02	19.0	\$51.31	49.9%
7%	\$1,110.45	12.80	13.8	\$40.87	47.1%
10%	\$703.11	9.55	13.7	\$32.76	59.2%

Estimated Breakdown of Benefits	
Travel Time Savings	94.2%
Vehicle Operating Costs	5.5%
Safety	0.3%
	100.0%

	Present Value of - (\$M)			
Discount Rate	Capital Costs	Increased Maintenance Costs	Total Costs	Benefits
4%	\$102.79	\$0.00	\$102.79	\$1,955.28
7%	\$86.76	\$0.00	\$86.76	\$1,197.20
10%	\$73.60	\$0.00	\$55.30	\$758.41

Project - Wyong Town Centre analysis based on
Paramics modelling
(for Jai
Reddy)
Option - 1.0% growth scenario
50% contingency =
\$155 M

Discount Rate	Net Present Value (\$M)	NPVI	Benefit Cost Ratio	First Year Benefit (\$M)	First Year Rate of Return
4%	\$1,832.72	14.95	16.0	\$51.31	41.9%
7%	\$1,093.76	10.57	11.6	\$40.87	39.5%
10%	\$692.47	7.89	11.5	\$32.76	49.7%

Estimated Breakdown of Benefits	
Travel Time Savings	94.2%
Vehicle Operating Costs	5.5%
Safety	0.3%
	100.0%

	Present Value of - (\$M)			
Discount Rate	Capital Costs	Increased Maintenance Costs	Total Costs	Benefits
4%	\$122.56	\$0.00	\$122.56	\$1,955.28
7%	\$103.44	\$0.00	\$103.44	\$1,197.20
10%	\$87.76	\$0.00	\$65.93	\$758.41

Project - Wyong Town Centre analysis based on
Paramics modelling
(for Jai
Reddy)
Option - 1.0% growth scenario
90% contingency =
\$197 M

Discount Rate	Net Present Value (\$M)	NPVI	Benefit Cost Ratio	First Year Benefit (\$M)	First Year Rate of Return
4%	\$1,799.51	11.55	12.6	\$51.31	32.9%
7%	\$1,065.73	8.11	9.1	\$40.87	31.1%
10%	\$674.61	6.05	9.1	\$32.76	39.1%

Estimated Breakdown of Benefits	
Travel Time Savings	94.2%
Vehicle Operating Costs	5.5%
Safety	0.3%
	100.0%

	Present Value of - (\$M)			
Discount Rate	Capital Costs	Increased Maintenance Costs	Total Costs	Benefits
4%	\$155.77	\$0.00	\$155.77	\$1,955.28
7%	\$131.47	\$0.00	\$131.47	\$1,197.20
10%	\$111.54	\$0.00	\$83.80	\$758.41

Roads and Maritime Services - Wyong Town Center Economic Analysis

Project - Wyong Town Centre analysis based on
Paramics modelling
(for Jai
Reddy)
Option - 1.0% growth scenario
90% contingency =
\$197 M

Discount Rate	Net Present Value (\$M)	NPVI	Benefit Cost Ratio	First Year Benefit (\$M)	First Year Rate of Return
4%	\$1,799.51	11.55	12.6	\$51.31	32.9%
7%	\$1,065.73	8.11	9.1	\$40.87	31.1%
10%	\$674.61	6.05	9.1	\$32.76	39.1%

Estimated Breakdown of Benefits	
Travel Time Savings	94.2%
Vehicle Operating Costs	5.5%
Safety	0.3%
	100.0%

	Present Value of - (\$M)			
Discount Rate	Capital Costs	Increased Maintenance Costs	Total Costs	Benefits
4%	\$155.77	\$0.00	\$155.77	\$1,955.28
7%	\$131.47	\$0.00	\$131.47	\$1,197.20
10%	\$111.54	\$0.00	\$83.80	\$758.41

The BCR outputs were calculated using the following metrics:

- Value of vehicle time - \$23.81 per vehicle hour.
- Vehicle operating costs - \$0.364 - \$0.390 per hour
- Value of vehicle stops - \$0.14 per vehicle stop

Value of an average crash - \$66,000

- Analysis period was 20 years.
- Value of a single one hour AM peak was added to that of a single one hour PM peak and multiplied by an expansion factor of 2,100 to arrive at an annual cost.

Roads and Maritime Services - Wyong Town Center Economic Analysis

Appendix 11

RMS List of Documents

RMS - Pacific Highway at Wyong Documents

Element	Design Drawings	Estimate
East	2006 Wyong Bypass All Options.pdf	050607_Opt b Eastern Route Rev A.xls
	080521_2004 Wyong Bypass East.pdf	060518_Opt Eastern Route Rev A.xls
West	2006 Wyong Bypass All Options.pdf	05067_Opt Western Route Rev A.xls
	080521_2004 Wyong Bypass West.pdf	060618_Opt Western Route Rev B.xls
Tunnel	070129 Wyong – Tunnel Option Long Section.pdf	071011_Wyong BP – Central Route Option 6 Tunnel.xls
	070208 Wyong – Tunnel Option.pdf	
	070215_Tunnel Option.pdf	
	option_tunnel_grnd_small.pdf	
Land Bridge	071008_Land Bridge Option.pdf	060614_Wyong BP – Central Route Option 5.xls
	071122_ Land Bridge Option.pdf	071021_Wyong BP – Central Route Option 9.xls
	Land Bridge Option.pdf	
Howarth Street	080505_Howarth St Option_SB.pdf	071018_Wyong BP – Central Route Option 5.xls
	080608_Howarth St Option_SB.pdf	
	080608_Howarth St Option_SB_Long Section.pdf	
Widened Carriage	120202_0010 505 SD 5309 FULL revJ A3.pdf	Wyong Town Centre Strategic Estimate Feb 2012Rev C.xls
	120202_0010 505 SD 5309 FULL revJ.pdf	
	120202_0010 505 SD 5309 revJ.pdf	
	120202_VA120121.pdf	
	120206_RW_Long Section.pdf	
	SK019a revA.pdf	
Split Level Carriage	070906_Split Level Carriageway Option.pdf	060614_Wyong BP – Central Route Option 3.xls
	071122_Split Level Carriageway Option.pdf	
Estimate Summary		120229_Options Summary.xls

RMS - Pacific Highway at Wyong Documents

Reports	Agreement
2005 Wyong Traffic report.pdf	Brief
2006 Community Update.pdf	Wyong Town Centre Professional Services Agreement.pdf
2006 Options Study.pdf	Wyong Town Centre Request for Proposal.pdf
2007 Summary of 2006 Consultation.pdf	Wyong Town Centre Terms of Reference.pdf
2008 Community Update.pdf	Clarifications
2008 Options Report.pdf	Independent Evaluation for Wyong Town Centre Options – Clarifications.msg
2008 Paramics Modelling Report.pdf	Wyong Town Centre IEO – Key Milestone Memo.pdf
2010 Business Impact Assessment.pdf	Economic Analysis
2010 Heritage Assessment.pdf	RE Wyong Town Centre Economic Anlsysis.msg
2010 Landscape Character Report.pdf	Tender Inception Meeting
2010 Traffic Modelling Report.pdf	120518_Tender Inception Meeting – RMS presentation.pdf
2010 Urban Design Report.pdf	Inception Meeting – Independent Evaluation – Wyong Town Centre notes.doc
2011 Parking Study.pdf	
2011 Station Meters Cottage Report.pdf	
2011 Traffic Modelling Report.pdf	
2011 Travel Patterns Study.pdf	
2011 Wyong Town Centre Community Update.pdf	