cost estimate

STRATEGIC COST ESTIMATE REPORT

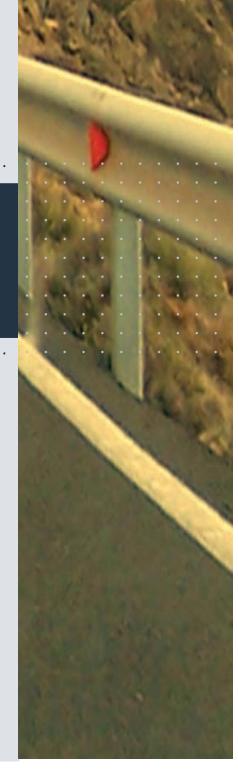
SPORTSMANS CREEK NEW BRIDGE (OPTIONS 1 - 4)

ISSUED TO:

KBR

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Sportsmans Creek New Bridge

PROJECT REFERENCE: 213083

PURPOSE OF ISSUE: COST ESTIMATE REPORT

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Previous issues of this document shall be destroyed or marked SUPERSEDED.

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1 Executive Summary

1.1 PURPOSE OF REPORT

As part of the strategic development process requirements, various road/bridge alignment options have been examined for the Sportsmans Creek new bridge project. These options address the requirements of all identified stakeholders and community groups. As the process has developed the options have been shortlisted as a result of workshops and assessment/evaluation sessions.

There are four (4) options to be considered from a cost perspective for further assessment and ultimately a preferred option to be selected. Construction costs have a major bearing on this selection process. Individual strategic cost estimates for the four options has been undertaken. The purpose of this report is to outline and detail the anticipated costs, methodology and assumptions made in relation to each of these designs/options so as to enable further consideration to determine a preferred option.

1.2 SCOPE OF REPORT

Aquenta Consulting has been engaged by KBR to prepare a Strategic Cost Estimate Report for the four (4) shortlisted Sportsmans Creek new bridge alignment options.

This report discusses the development of the construction and project costs and the project as a whole. The report provides a contingency allowance applied to the construction costs based on the following:

- The base date for the estimate is October 2013.
- A traditional construct only project delivery.
- · Review on the confidence level of information provided for both construction and project cost.
- Strategic design detail.
- In accordance with RMS guidelines and recommendations.

For the purposes of the preparation of the estimate the strategic design has been provided by KBR to Aquenta Consulting. The estimate is based on this strategic design. This information should not be used in the future as a comparison without considering the following:

- · Changes in scope due to revisions to RMS project requirements
- · Changes in scope due to project specifications
- Changes in scope due to proposed design
- · Assessment of the latest market conditions

1.3 STRATEGIC ESTIMATE SUMMARY

The cost summary in table 1 shows the total project cost for both including and excluding contingency as per RMS requirements;

TABLE 1 SPORTSMANS CREEK NEW BRIDGE STRATEGIC ESTIMATE SUMMARY

ITEM	DESCRIPTION	OPTION 1	OPTION 2	OPTION 3	OPTION 4
1	Project Development	\$327,167	\$278,970	\$284,777	\$284,989
2	Detail design and Documentation	\$509,067	\$431,952	\$441,243	\$441,583
3	Property Acquisitions	\$666,000	\$222,000	\$444,000	\$222,000
4	Utility Adjustments	\$222,000	\$277,500	\$222,000	\$277,500
5	Infrastructure	\$12,388,190	\$10,452,501	\$10,741,454	\$10,694,243
6	Finalisation	\$335,073	\$256,154	\$260,471	\$259,766
	Total Strategic Estimate (Ex Contingencies)	<u>\$14,447,496</u>	<u>\$11,919,077</u>	<u>\$12,393,946</u>	<u>\$12,180,081</u>
	Total Strategic Estimate (Incl Contingencies)	<u>\$20,226,125</u>	<u>\$16,686,338</u>	<u>\$17,351,154</u>	<u>\$17,051,743</u>

Both the summary and detailed breakdown of the construction estimate for each option is contained in Appendix 1.

1.4 METHODOLOGY

The Strategic Estimate is based on a schedule of quantities prepared by Aquenta Consulting based on a Strategic Design provided by KBR and first principle rates have been used.

A number of elements of the estimate rely on specific details that will be contained in the design specification to the contract documents. As these documents are not currently available, recent experience from similar projects has been utilised to generate costs for these elements. Some allowances have been included on the advice of RMS.

Generally, the specification utilised for the purpose of this estimate has been outlined by RMS.

1.5 MAIN ASSUMPTIONS

The key assumptions of the Strategic Cost Estimate are:

- No specific project delivery or procurement option has been considered
- The estimate is based on the KBR provided strategic design
- No existing studies, geotechnical and environment reports were provided for estimation
- All existing asphalt from the existing road surface removed and disposed off site

- · Excavated material utilised on site as general fill and the surplus will be disposed off-site
- Costs for Drainage, Utilities, Signposting, Fencing, Landscaping have been based on past experience and recent projects including RMS advice
- · No Street Lighting is required as per RMS advice
- Bridge structures are based on an assumed super tee configuration with 35 m spans assumed for all options.
 Option 1 is a 5 span structure giving a total length of 175 m. Options 2 to 4 inclusive have a 4 span configuration giving a total length of 140 m
- Approach embankments are assumed to be an average of 3m high earthwork batters with grass seeding as per RMS advice
- Headstocks are assumed to be supported by two (2) x 900 mm diameter concrete columns at 5 metres average height
- Piers / abutments are assumed to have a concrete pile cap of size 6000 x 3000 x 1500 mm deep to be supported by two (2) x thirty (30) metre long 900 mm diameter bored cast in place reinforced concrete piles
- Bridge structures are based on an assumed super tee configuration (6 Super T per span at 35m long each) for all options as per RMS advice
- Deck width assumed to be twelve and a half (12.5) metres average width which allows for two (2) x three and a half (3.5) metre lanes and allowance for one (1.0) metre on either side for a shoulder and a two and a half (2.5) metre shared pathway.
- · Bridge structures are assumed to have railings and safety screens as per RMS requirement
- Road pavements are assumed to be 300mm sub-base with in-situ lime stabilisation, 200mm DGB20 base, and 2 layers of sprayed bituminous surfacing with 7/14mm aggregate as per RMS advice.
- No Asphalt is included for road pavements and bridge deck as per RMS advice.
- Section 3 contains all assumptions made during the Strategic Estimate development.

2 Scope of Project

2.1 PROJECT DESCRIPTION

The project allows for a second Sportsmans Creek crossing on a super tee concrete overbridge structure. It also allows for the existing timber bridge structure and approaches to be demolished with the subsequent reinstatement of Bridge Street and Flo Clark Park.

A summary of the high level quantum of the Project is as follows:

Option 1

- Total length of new roadway 840 m
- Super Tee Girders 30 No (6 No/span)
- Piling Length 360 m (12 x 30 m deep)

- Total Bridge structure 2,188 m² (12.50 x 175 m long)
- Total area of new pavement 10,913 m² (including localised median / islands at intersections)
- Earthworks excavation volume 22,053 m³

Option 2

- Total length of new roadway 618 m
- Super Tee Girders 24 No (6 No/span)
- Piling length 300 m (10 x 30 m deep)
- Total Bridge structure 1,750 m² (12.50 x 140 m long)
- Total area of new pavement 7,727 m² (including localised median / islands at intersections)
- Earthworks excavation volume 13,122 m³

Option 3

- Total length of new roadway 810 m
- Super Tee Girders 24 No (6 No/span)
- Piling Length 300 m (10 x 30 m deep)
- Total Bridge structure 1,750 m² (12.50 x 140 m long)
- Total area of new pavement 10,142 m² (including localised median / islands at intersections)
- Earthworks excavation volume 15,751 m³

Option 4

- Total length of new roadway 745 m
- Super Tee Girders 24 No (6 No/span)
- Piling Length 300 m (10 x 30 m deep)
- Total Bridge structure 1,750 m² (12.50 x 140 m long)
- Total area of new pavement 9,313 m² (including localised median / islands at intersections)
- Earthworks excavation volume 14,139m³

2.2 DOCUMENTS REVIEWED

This Report is based on all drawings, schedules and other information provided by KBR up to and including October 2013 (a summary of this information is contained in Section 4).

2.3 LIMITATIONS OF ESTIMATE

The Estimate is limited by the detail provided in the documents which are currently at a Strategic Stage.

A large number of assumptions have been made where details were not shown on the drawings or drawings were not finalised. This estimate should only be read in conjunction with the list of notes as outlined on Section 3.1.

Costs are estimated in October 2013 prices.

3 Project Cost

The Project Cost (including contingency) presented in this Report comprises a number of parts. These are the Principal's Costs, Construction Estimate and Project Contingency. No allowance has been made for inflation. Integral to the Construction Estimate and escalation calculation is a construction program and methodology, this information was not provided for this estimate. Aquenta has assumed that the delivery of the works will be carried out over a 12 month period.

3.1 CONSTRUCTION ESTIMATE

3.1.1 Assumptions/Data Used

During the preparation of the Construction Estimate the following assumptions (listed below) were made;

3.1.1.1 JOB SPECIFIC REQUIREMENTS

The following provisions have been made for job specific requirements:

- Construction of temporary sidetrack including earthworks, pavement and safety barriers (at tie in locations)
 predominantly associated with getting access to the bridge area and on the local roads to ensure continuity of
 operation within this area,
- Demolition and removal of existing timber bridge structure
- Earthwork batter embankment at approaches

3.1.1.2 PROVISION FOR TRAFFIC MANAGEMENT

The following provisions for traffic items have been allowed:

- Costs for a number of these items are duration based. The duration applied for traffic control has been 12 weeks as per RMS advice.
- Provision for traffic We have allowed \$65,000 excl. Indirect Costs for traffic management as per RMS advice.

3.1.1.3 ENVIRONMENTAL PROTECTION & MANAGEMENT

The following Environmental Management items have been allowed:

• Sediment Basins (including cleaning and operating)

- · Air, noise, and vibration monitoring
- Dilapidation surveys
- · Allowance for peripheral adjustments to existing properties due to the impacts of the works

3.1.1.4 DRAINAGE WORKS

In the absence of a finalised design for this package of work, we have applied a provisional sum of \$100,800 incl. Indirect Costs for stormwater drainage

3.1.1.5 EARTHWORKS

Clearing and Grubbing:

Areas nominated for these works are associated with the overall, as well as embankment cut areas associated with the new alignments.

Stripping of Topsoil:

The volume is reflective of 200mm over the area nominated for clearing and grubbing.

Earthworks:

There is no allowance for non-rippable material within the schedule

- Excavation: 3463 m³, 1296 m³, 2981 m³, 703 m³ for Options 1, 2, 3 and 4 respectively (allowed for under clearing and grubbing/stripping of topsoil)
- Road Embankment with excavated materials: 3514 m³, 2141 m³, 3165 m³, 1882m3 for Options 1, 2, 3 and 4 respectively
- Road Embankment with imported materials: 13136 m³, 8959 m³, 7935 m³, 9218m3 for Options 1, 2, 3 and 4 respectively

As there is limited geotechnical information, it is assumed that 80% of the excavated materials can be re-used for the bridge embankment works, and the outstanding to be an imported non graded quarry product.

3.1.1.6 PAVEMENT

Removal of existing asphalt surfacing from existing roadway.

Existing road pavements are boxed out and excavated to 500mm thick as per RMS advice.

• Excavation: 930 m³, 1380 m3, 975 m3, 1650 m3 for Options 1, 2, 3 and 4 respectively

A new pavement profile has been allowed with 300mm sub-base with in-situ lime stabilisation, 200mm DGB20 base, and 2 layers of sprayed bituminous surfacing with 7/14mm aggregate as per RMS advice.

Pavement Profile

The following pavement profile has been assumed:

Sub Base Pavement

- 300 mm controlled sub-grade (Min 2% Quicklime by mass): 2022 m3, 1450 m3, 2016 m3, 1328 m3 for Options 1, 2, 3 and 4 respectively.
- 200mm DGB20 base: 1348 m3, 967 m3, 1344 m3, 885 m3 for Options 1, 2, 3 and 4 respectively.

Pavement Surfacing

2 layers of sprayed bituminous surfacing are applied to all areas (as advised by RMS)

7/14 mm aggregates over all areas: 10913 m2, 7727 m2, 10142 m2, 6767 m2 for Options 1, 2, 3 and 4 respectively.

3.1.1.7 MISCELLANEOUS

Signage

In the absence of a finalised design for this package of work, we have applied provisional quantities on the basis of our knowledge from similar projects.

The supply and Installation of both regulatory and Information signage has been allocated as follows:

- · Regulatory signs (nominal allowance) for length of works
- · Major Directional Signs

Guardrail

In the absence of a finalised design for this package of work, we have applied provisional quantities on the basis of our knowledge from similar projects.

An allowance for a 'Thrie Beam' guardrail on the approach to the bridge structure has been allowed for each of the options.

Anti-throw safety screens, and railings have been incorporated into the bridge structures.

Line Marking

In the absence of a finalised design provisional allowances have been made for the line marking component of works.

3.1.1.8 BRIDGE STRUCTURES

Piling

900mm diameter driven reinforced concrete piles and each pile is assumed at 30m deep: 12 No. for Option 1, and 10 No. for each of Options 2, 3 and 4 respectively. Twin piles layout is assumed per pile cap.

Concrete in Pile Caps & Abutments

Concrete in pile caps and abutments based on 40MPa concrete: 188m³ for Options 1, and 161m³ for each of the Options 2, 3, and 4 respectively.

Pile cap size at this stage is assumed to be four (4) and three (3) of 6000 x 1500 x 3000 mm for Options 1 and each of the Options 2, 3, and 4 respectively. Abutment is assumed to be two (2) of 10000 x 2000 x 2000 for each of the Option 1, 2, 3, and 4 respectively.

Concrete in Columns and Headstocks

Concrete in piers and headstocks based on 40MPa concrete: 156 m³ for Options 1, and 118 m3 for each of the Options 2, 3 and 4 respectively. Twin column layout is assumed per cap, both being 900 mm in diameter.

Reinforcement in Pile Caps, Abutments, Columns and Headstocks

Reinforcement in pile caps and abutments, piers and headstocks: 67 tonnes for Option 1, and 52 tonnes for each of the Options 2, 3 and 4 respectively. Generally 180 kg/m³ is included for reinforcement in pile caps, abutment and headstocks, and 250kg/m³ has been allowed for reinforcement in columns at this stage.

Super T Girders

6 No. Super T is assumed per span, each 1500 mm deep x 35000 mm long: 30 No. of 35000 mm for Option 1, and 24 No. of 35000 mm for each of the Options 2, 3 and 4 respectively.

Concrete deck

250 mm Concrete deck pour based on 40MPa concrete (including approach slabs): 875 m3 for Options 1, and 700 m3 for each of the Option 2, 3 and 4 respectively.

Safety Screens and Railings

Safety screens and railings: 350 m for Options 1, and 280 m for each of the Options 2, 3 and 4 respectively.

3.2 RISK AND OPPORTUNITY ANALYSIS

Risk and opportunity has been based on the applicable range for strategic level estimate from the RMS guidelines. The value of this is 40% on the base estimate (infrastructure only), and 40% on all other delivery costs. A risk and opportunity analysis has not been undertaken at this stage of the project.

3.3 CONSTRUCTION PROGRAMME

3.3.1 Overview

The program period applied in this estimate is 48 weeks. The programme has been prepared based on a five day working week with two days per month wet weather allowance.

3.4 ADJUSTMENT FOR ESCALATION

No adjustment for escalation has been provided with this Strategic Cost Estimate.

3.5 INCLUSIONS/SPECIFIC ALLOWANCES

The following items have been included or specifically allowed for within the Strategic Cost Estimate:

- Property Acquisition costs have been assumed by Aquenta and included in this estimate (these amounts have been confirmed by RMS)
- · No EPA Levy for disposal of material off site has been included
- · Utility adjustments have a preliminary allowance included

3.6 EXCLUSIONS

The following items have been excluded from the Strategic Cost Estimate:

- Compliance with any DA conditions or Minister's approvals.
- · Finance Costs, Taxes etc.
- · Contamination (Only nominal amount included)
- GST

4 Information Provided

Strategic Design Information Pack:

- RMS Sportsmans Creek new bridge Internal Technical Workshop August 2013
- Email correspondences received from KBR and RMS outlining information / instructions and amendments including recommended specification changes

5 Discussion & Recommendations

Refinement of the costs for the options will be able to be undertaken with further design development. The key areas that will have the largest impact on the costs are:

- The length of the bridge structure: minimising the number of piers/abutments;
- The height of the approach embankments;
- Confirmation of survey and geotechnical conditions: will aid in confirming the requirements for the bridge structure.
- For the purpose of this cost estimate a 'Super T' construction methodology is assumed to be preferred, compared with other bridge construction methodology.

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Appendix 1: Costs Estimates

Estimate Summary Sheet - Total

Project: Sportsman Creek New Bridge

Estimate Prepared by: Quantities Prepared by:

Aquenta Consulting Pty Ltd Level 10, 67 Albert Avenue Chatswood NSW 2067

Project No: 213083 Date: 07/11/2013 Estimate Type: Preliminary Sketch - Option 1

Item	Item Base Estimate Contingency Estimate % of Total					
item	(excluding	%	Amount	(including	Estimate	Comments/Assumptions
	contingency)	70	7	contingency)	Lotimato	
1. Project Development						
			•	• • • • • • • • • • • • • • • • • • • •		
1 (a) Route/Concept/EIS	\$286,637	40%	\$114,655	\$401,291		2.5% of Construction Costs
1 (b) Project Management Services	\$28,664	40%	\$11,465	\$40,129		10% of Route/Concept/EIS
1 (c) Sponsor	\$2,866	40%	\$1,147	\$4,013		10% of PM Services Costs
1 (d) Community Liaison	\$9,000	40%	\$3,600	\$12,600		General Allowance
Sub total	\$327,167	40%	\$130,867	\$458,033	2.26%	1
2. Detail Design & Documentation						
2 (a) Investigation and Design	\$458,619	40%	\$183,448	\$642,066		4% of Construction Cost
2 (b) Project Management Services	\$45,862	40%	\$18,345	\$64,207		10% of Investigation and Design
2 (c) Client Representation	\$4,586	40%	\$1,834	\$6,421		10% of Project Management Services
2 (c) Gliefit Representation	ψ4,500	40 /0	ψ1,004	Ψ0,421		1070 011 Toject Management Services
Sub total	\$509,067	40%	\$203,627	\$712,694	3.52%	
3. Property Acquisitions						
3 (a) Acquire Property	\$600,000	40%	\$240,000	\$840,000		Plugged - Allowance Only.(Minimal)
3 (a) Acquire Property						
3 (b) Professional Services for Property	\$60,000	40%	\$24,000	\$84,000		10% of Property
3 (c) Project Management Services	\$6,000	40%	\$2,400	\$8,400		10% of professional services
Sub total	\$666,000	40%	\$266,400	\$932,400	4.61%	
4. Utility Adjustments						
4 (a) Adjust Utilities	\$200,000	40%	\$80,000	\$280,000		Allowance only.
• •	\$20,000	40%				10% of Utilty Costs
4 (b) Project Management Services			\$8,000	\$28,000		I
4 (c) Client Representation	\$2,000	40%	\$800	\$2,800		10% of Project Management Services
Sub total	\$222,000	40%	\$88,800	\$310,800	1.54%	1
5. Infrastructure Construction						
5(a) - 5(c) Infrastructure	\$11,115,469	40%	\$4,446,188	\$15,561,657		See breakdown
5(d) Project Management Services	\$1,111,547	40%	\$444,619	\$1,556,166		10% of Infrastructure
5(e) Client Representation	\$1,11,547	40%	\$44,462	\$1,556,100 \$155,617		10% of Project Management Services
5(f) PA Insurance	\$50,020	40%	\$20,008	\$69,657		0.45% of Infrastructure
o(i) 17 insurance	ψ50,020	4070	Ψ20,000	φ03,037		0.4070 of mirastracture
Sub total	\$12,388,190	40%	\$4,955,276	\$17,343,096	85.75%	
6. Finalisation						
6 (a) Refurbish old route	\$150,000	40%	\$60,000	\$210,000		Allowance
6 (b) Project data and post completion review.	\$166,732	40%	\$66,693	\$233,425		1.5% of Construction Cost
6 (c) Project data and post completion review.	\$16,673	40%	\$6,669	\$23,342		10% of Project Data Costs
6 (d) Client Representation	\$1,667	40%	\$667	\$2,334		10% of Project Data Costs 10% of Project Management Services
()						
Sub total	\$335,073	40%	\$134,029	\$469,102	2.32%	
TOTAL - PRELIMINARY SKETCH ESTIMATE	\$14,447,496	40%	\$5,778,999	\$20,226,125		

INDICATIVE COST ESTIMATE:

\$21,000,000

Rounded as per 4.5 of RMS Estimating Requirements

Reality checks:					
Component	Unit	Quantity	Cost excl cont	Cost incl cont	Cost Unit excl cont/Cost Unit incl
1. Cost per km	km	0.84	\$14,447,496	\$20,226,125	\$17,199,400 / \$24,078,720
2. Cost per lane-km (Road and Bridge)	lane-km	1.68	\$14,447,496	\$20,226,125	\$8,599,700 / \$12,039,360
3. Cost per lane-km (Road only excl. Bridge)	lane-km	1.33	\$4,840,296	\$6,776,414	\$3,639,320 / \$5,095,048
4. Cost per sqm of Bridge	sq.m	2,187.00	\$7,391,491	\$10,348,088	\$3,380 / \$4,732
5. Cost of earthworks /m3	cu.m	22,053.00	\$1,283,197	\$1,796,476	\$58 / \$81
6. Cost of pavement /m2	sq.m	10,913.00	\$693,314	\$970,639	\$64 / \$89

Line	ltem	Description	Quantity	Unit	Rate	Total
	G1	JOB SPECIFIC REQUIREMENTS		LSum	126,000.000	126,000
	G1P1.1	Construction of side tracks and diversion works		LSum	126,000.000	126,000
	G2	GENERAL REQUIREMENTS		LSum	148,680.000	148,680
	G2P1	Provisional sum for Primary Testing Subcontract	1.000		126,000.000	126,000
8	G2P2	Provisional sum for WAE Drawings	1.000	item	22,680.000	22,680
10	G4	PRINCIPAL'S PROJECT ACCOMMODATION	1.000	LSum	315,000.000	315,000
11	G4P1	Establishment of Principal's Project Accommodation	1.000	LSum	151,200.000	151,200
12	G4P2	Maintenance of Principal's Project Accommodation until	52.000	week	3,150.000	163,800
		Completion				
14	G10	TRAFFIC MANAGEMENT	1.000	LSum	112,896.000	112,896
	G10P1	Traffic Management	1.000		81,900.000	81,900
	G10P2	Maintenance of Traffic Control Measures	12.000		1,008.000	12,096
	G10P4	Routine Maintenance of New Roadways Opened to Traffic	1.000		18,900.000	
	G36	ENVIRONMENTAL PROTECTION		LSum	75,600.000	·
	G36P2	Site Monitoring	1.000		18,900.000	· · · · · · · · · · · · · · · · · · ·
	G36P2.1	Air Pollution	1.000		18,900.000	
	G36P2.2	Noise	1.000		18,900.000	18,900
	G36P2.3	Ground Vibration	1.000		18,900.000	18,900
	G40 G40P1	CLEARING AND GRUBBING	9,698.000	LSum	34,727.762 3.581	34,728 34,728
	R11	Clearing and grubbing STORMWATER DRAINAGE (All Provisional)		LSum	100,800.000	100,800
	R11P1	Allow provisional sum for stormwater drainage	1.000		100,800.000	100,800
	R15	KERBS AND GUTTERS		LSum	6,360.190	6,360
	R15P1.1	Kerb and gutter (Provisional)	40.000		76.020	
	R15P1.2	Kerb only (median - localised at intersections) - Provisional -	50.000		66.388	3,319
55	101 1.2	Type SF	30.000		00.000	0,010
35	R44	EARTHWORKS	1 000	LSum	1,644,973.741	1,644,974
	R44P1.1	Removal and stockpiling of non-contaminated topsoil	1,940.000		20.394	39,565
	R44P1.2	Dispose excavated topsoil to temporary stockpile on site for	1,940.000		14.994	29,088
		future use (landscaping etc)	1,010.000		1 1.00 1	20,000
40	R44P2.1	Excavation of all material	3,463.000	m3	17.325	59,996
	R44P2.2	Excavation of 500mm thick of existing road pavement	930.000		17.325	
	R44P2.3	Removal and disposal of surplus topsoil to spoil heap for	3,514.000		14.994	52,689
		future use (embankment, etc)	2,2			,,,,,,,
44		Road embankment using excavated material for fill	3,514.000	m3	5.776	20,296
45		Road embankment using imported material for fill	13,136.000		74.072	
	R44P4.1	Disposal of unsuitable and surplus material (Assumed 20%	879.000		60.103	52,831
		unsuitable)				
49	R44P7.1	Treatment Type E1 and Cutting Type C1 - loosen and	1,310.000	m2	27.720	36,313
		recompact (20% of new pavement area - excluding bridge)				
50	R44P7.1	Trim and Compaction	1,310.000	m2	2.520	3,301
54	R44P5.1	Supply and Place 300mm subbase, unbound new road	1,464.000	m3	137.899	201,885
		pavement				
55	R44P5.2	Supply and Place 300mm subbase, unbound existing road	558.000	m3	140.438	78,365
		pavement				
57	R44P6.1	300mm Controlled subbase, comprising of in-situ lime	2,022.000	m3	40.320	81,527
		stabilisation (Min 2% Quicklime by mass) (Cut areas only) to				
		road pavement				
	R71	UNBOUND AND MODIFIED PAVEMENT COURSE		LSum	210,054.368	
	R71P1.7	Supply and Place 250mm DGB20 sub base (Provisional)	100.000		164.412	
	R71P2.1	Supply and Place 200mm DGB20 Base to road pavement	1,348.000		143.630	
	R83	GENERAL PAVEMENT BASE		LSum	7,595.734	
67	R173P1.1	Concrete footpath / bus stop area (250mm thick, 40MPa	20.000	m2	172.027	3,441
		reinforced concrete, including SL72 reinforcement and				
		jointing) - Provisional				
68	R173P1.2	Concrete median infill slab to localised areas (intersections)	30.000	m2	138.507	4,155
		(125mm thick, 25MPa reinforced concrete with stencilled				
		finish, including SL72 reinforcement)				
	R106	SPRAYED BITUMINOUS SURFACING		LSum	86,667.221	86,667
	R106P1.1	AMC4 1.5L/m2	16,369.000		2.381	38,981
73	R106P1.2	Supply and Spray Binder - Class 170 Bitumen (including	16,369.000	Itr	0.466	7,631
		Adhesion Agent where required and Preparation of Surface)				
7.5	D400D7.4	The second secon	40.040.000	0	4 000	40.050
	R106P7.1	7mm aggregate	10,913.000		1.223	13,352
	R106P7.2	14mm aggregate	10,913.000		2.447	
	R141 R141P3.2	PAVEMENT MARKING C1 lines		LSum	24,920.910	24,921
	R141P3.2 R141P3.3	C1 lines C4 lines	840.000 140.000		6.300	
	R141P3.3 R141P3.4	E1 lines			6.300 6.000	
	R141P3.4 R141P3.7	L1 lines	1,680.000 840.000		5.040	10,080 4,234
		L3 lines	40.000		5.040 5.040	4,234
	R141P3.6	L6 lines	80.000		5.040	403
	R141P3.9		40.000		5.040	202
	R141P3.10	UA3L arrow	11.000		95.445	1,050
	R141P4.6	UA3R arrow	17.000		95.445 95.445	1,623
	R141P4.7	UA5R arrow	5.000		95.445	477
	R141P4.8	Bicycle marking	5.000		95.445	
	R142	RAISED PAVEMENT MARKERS (Provisional)		LSum	2,299.248	2,299
33		The state of the s	1.000		_,	2,200

99 R142P2.1	Type W	80.000 each	28.741	2,299
100 R143	SIGNPOSTING	1.000 LSum	18,792.741	18,793
102 R143P1.1	Major directional signs	1.000 each	10,710.000	10,710
104 R143P2.6	Type R1-2B 'GIVE WAY'	2.000 each	1,143.880	2,288
	Type R4-1 Speed Limit	6.000 each	965.830	5,795
118 R178	VEGETATION (ALL PROVISIONAL)	1.000 LSum	113,278.813	113,279
120 R178P2.1	Areas with a slope of 5 to 1 or flatter (Provisional)	2,500.000 m2	7.284	18,210
121 R178P2.2	Areas steeper than 5 to 1 except stepped batters	4,025.000 m2	10.079	40,567
123 RS178P4.1	Rural grass mix seeding to to site boundaries	4,025.000 m2	1.511	6,081
124 R178P11	Topsoiling of open drains using site material including surface	1,260.000 m2	7.284	9,178
124 1(1701 11	preparation and screening of topsoil stockpiles (10% of total	1,200.000 1112	7.204	3,170
	area)			
125 R178P17	Lining open drains with organic fibre mesh (10%)	1,260.000 m2	13.149	16,568
126 R178P19	Watering	13,050.000 m2	1.738	22,675
128 R179	LANDSCAPE PLANTING	1.000 LSum	30,366.000	30,366
131 R179P6.2a	Tree planting (medium)	40.000 each	44.100	1,764
132 R179P6.2b	Tree planting (large)	60.000 each	214.200	12,852
133 R179P12	Maintenance watering	5.000 each	3,150.000	15,750
136 R201	FENCING (All Provisional)	1.000 LSum	34,965.000	34,965
138 R201P6.2	Picket and wire fencing	1,110.000 m	31.500	34,965
141 B1	OPTION 1 SPORTSMAN CREEK BRIDGE STRUCTURES	1.000 LSUM	7,391,491.327	7,391,491
143 B1.1.1	Bridge Site Preparation	450.000 m2	77.922	35,065
144 B1.1.2	Restoration of bridge site	450.000 m2	126.000	56,700
145 B1.1.3	900 mm dia. driven reinforced concrete pile	360.000 m	1,600.000	576,000
146 B1.1.7	Pile integrity testing	12.000 each	420.000	5,040
147 B1.1.8	Sheet Piling	1,120.000 m2	652.500	730,800
148 B1.1.9	Temporary Works and Scaffolding Allowance	1.000 Item	126,000.000	126,000
149 B1.1.11	Dewatering	1.000 Item	319,681.908	319,682
150 B1.1.12	Water Quality Allowance	1.000 Item	124,570.152	124,570
153 B1.2.1	Concrete Class 40 Mpa/20 (6 x 3 x 1.5 m deep) 6 caps in total	188.000 m³	1,033.200	194,242
154 B1.2.2	Steel reinforcing bar (Provisional Quantity), N32 Bar - Allow	37.600 tonne	2,953.185	111,040
134 01.2.2	180kg / m3	37.000 tollile	2,900.100	111,040
156 B1.3.1	Concrete Class 40 Mpa/20 (900 dia x 5m H) - 2 columns x 4	26.000 m ³	657.954	17,107
	intermediates			,
157 B1.3.2	Steel reinforcing bar (Provisional Quantity), N32 Bar - Allow	6.500 tonne	2,953.188	19,196
	250kg / m3 For Collision			
159 B1.4.1	Concrete Class 40] Mpa/20 (12 m L x 1.8W x 1.5D)	130.000 m ³	1,146.600	149,058
160 B1.4.2	Steel reinforcing bar (Provisional Quantity), N32 Bar - Allow	23.000 tonne	2,953.187	67,923
	180kg / m3			
162 B1.5.1	Prestressed concrete T girders, supply on Site, 35 metres	30.000 each	48,420.351	1,452,611
	long			
163 B1.5.3	Erection of Prestressed concrete T girders, 35 meters long	30.000 each	5,974.513	179,235
165 B1.6.1	Pot-type bearings, 2000kN,	60.000 each	4,050.438	243,026
166 B1.6.3	Girder restraints block	60.000 each	838.623	50,317
168 B1.7.1	Concrete Class 40 Mpa/20 in deck Av. 250mm thickness	875.000 m ³	439.671	384,712
169 B1.7.2	Concrete Class 40 Mpa/20 in parapet and parapet terminal	210.000 m ³	2,370.661	497,839
170 B1.7.3	Concrete Class 40 Mpa/20 in transition slabs	125.000 m ³	472.640	59,080
171 B1.7.4	Reinforcing steel in decks Allow 220kg/m3	220.000 tonne	3,702.633	814,579
173 B1.8.1	Bituminous waterproof membrane for bridges	2,187.000 m ²	18.572	40,618
179 B1.9.1	Anchors for guardrail terminals	1.000 Lsum	7,765.128	7,765
180 B1.9.2	Bridging strips, compressible fillers and isolation inserts - 6	1.000 Lsum	3,023.894	3,024
181 B1.9.3	Joints Joint sealants - 6 Joints	1.000 Lsum	2.045.064	2.016
182 B1.9.4	Supply and fabrication of bridge traffic rail, steel including	525.000 m	2,915.964 910.287	2,916 477,901
102 01.9.4	pedestrian separation	525.000 III	910.207	477,901
183 B1.9.5	Transport and erection of bridge balustrade, steel including	525.000 m	434.700	228,218
100 11.0.0	pedestrian separation	020.000 III	101 .700	220,210
184 B1.9.6	Bolted-in aluminium bridge deck expansion joints - 1 span	1.000 Lsum	36,204.563	36,205
185 B1.9.8	Safety Screen Erection	350.000 m	466.560	163,296
186 B1.9.9	Safety Screen Manufacture and delivery	350.000 m	622.080	217,728
190 B2	DEMOLITION OF EXISTING BRIDGE	1.000 LSum	630,000.000	630,000
191 B2.1	Works associated with demolition of existing bridge and	1.000 LSum	630,000.000	630,000
	reinstatement works at Bridge Street and Flo Clark Park		222,000.000	223,003
	Total Infrastructure Costs			11,115,469

Estimate Summary Sheet - Total

Project: Sportsman Creek New Bridge

Estimate Prepared by: Quantities Prepared by: Aquenta Consulting Pty Ltd Level 10, 67 Albert Avenue Chatswood NSW 2067

Project No: 213083 Date: 07/11/2013 Estimate Type: Preliminary Sketch - Option 2

Item	Item Base Estimate Contingency Estimate % of Total					
item	(excluding % Amount			(including	Estimate	Comments/Assumptions
	contingency)			contingency)		
1. Project Development						
14 (a) Davida (Canacad) (CIC	#040.040	400/	₽07.000	Ф0.40 г 00		0.50% of Construction Conta
1 (a) Route/Concept/EIS	\$243,216	40%	\$97,286	\$340,503		2.5% of Construction Costs
1 (b) Project Management Services	\$24,322	40%	\$9,729	\$34,050		10% of Route/Concept/EIS
1 (c) Sponsor	\$2,432	40%	\$973	\$3,405		10% of PM Services Costs
1 (d) Community Liaison	\$9,000	40%	\$3,600	\$12,600		General Allowance
Sub total	\$278,970	40%	\$111,588	\$390,558	2.34%	1
	,		,	,		
2. Detail Design & Documentation						
			.	.		
2 (a) Investigation and Design	\$389,146	40%	\$155,658	\$544,804		4% of Construction Cost
2 (b) Project Management Services	\$38,915	40%	\$15,566	\$54,480		10% of Investigation and Design
2 (c) Client Representation	\$3,891	40%	\$1,557	\$5,448		10% of Project Management Services
Sub total	\$431,952	40%	\$172,781	\$604,733	3.62%	-
Oub total	Ψ+01,002	4070	Ψ172,701	ΨΟΟ-1,1 ΟΟ	0.0270	
3. Property Acquisitions						
3 (a) Acquire Property	\$200,000	40%	\$80,000	\$280,000		As advised by RMS
3 (b) Professional Services for Property	\$20,000	40%	\$8,000	\$28,000		10% of Property
3 (c) Project Management Services	\$2,000	40%	\$800	\$2,800		10% of professional services
Sub total	¢222.000	400/	#00.000	Ф240 000	4.000/	-
Sub total	\$222,000	40%	\$88,800	\$310,800	1.86%	
4. Utility Adjustments						
4 (a) Adjust Utilities	\$250,000	40%	\$100,000	\$350,000		Allowance only.
4 (b) Project Management Services	\$25,000	40%	\$10,000	\$35,000		10% of Utilty Costs
4 (c) Client Representation	\$2,500	40%	\$1,000	\$3,500		10% of Project Management Services
Sub total	\$277,500	40%	\$111,000	\$388,500	2.33%	-
Sub total	Ψ211,300	40 /6	φ111,000	ψ300,300	2.3376	
5. Infrastructure Construction						
5(a) - 5(c) Infrastructure	\$9,378,646	40%	\$3,751,458	\$13,130,104		See breakdown
5(d) Project Management Services	\$937,865	40%	\$375,146	\$1,313,010		10% of Infrastructure
5(e) Client Representation	\$93,786	40%	\$37,515	\$131,301		10% of Project Management Services
5(f) PA Insurance	\$42,204	40%	\$16,882	\$58,715		0.45% of Infrastructure
Sub total	\$10,452,501	40%	\$4,181,000	\$14,633,131	87.70%	1
Oub total	Ψ10,432,301	1 ∪ /0	ψ+, 101,000	ψ17,000,101	01.1070	
6. Finalisation						
6 (a) Refurbish old route	\$100,000	40%	\$40,000	\$140,000		Allowance
6 (b) Project data and post completion review.	\$140,680	40%	\$56,272	\$196,952		1.5% of Construction Cost
6 (c) Project Management Services	\$14,068	40%	\$5,627	\$19,695		10% of Project Data Costs
6 (d) Client Representation	\$1,407	40% 40%	\$5,627 \$563	\$1,970		10% of Project Data Costs 10% of Project Management Services
o (a) Olient Nepresentation	φ1,407	40 /0	φυσο	φ1,970		1070 OF FTOJECT MAHAYETHERIT SERVICES
Sub total	\$256,154	40%	\$102,462	\$358,616	2.15%	
	****		A	• • • • • • • •		
TOTAL - PRELIMINARY SKETCH ESTIMATE	\$11,919,077	40%	\$4,767,631	\$16,686,338		

INDICATIVE COST ESTIMATE:

\$17,000,000

Rounded as per 4.5 of RMS Estimating Requirements

Reality checks:					
Component	Unit	Quantity	Cost excl cont	Cost incl cont	Cost Unit excl cont/Cost Unit incl
1. Cost per km	km	0.62	\$11,919,077	\$16,686,338	\$19,224,318 / \$26,913,449
2. Cost per lane-km (Road and Bridge)	lane-km	1.24	\$11,919,077	\$16,686,338	\$9,612,159 / \$13,456,724
3. Cost per lane-km (Road only excl. Bridge)	lane-km	0.96	\$4,110,078	\$5,754,109	\$4,281,331 / \$5,993,864
4. Cost per sqm of Bridge	sq.m	1,750.00	\$6,144,590	\$8,602,425	\$3,511 / \$4,916
5. Cost of earthworks /m3	cu.m	13,122.00	\$831,242	\$1,163,738	\$63 / \$89
6. Cost of pavement /m2	sq.m	7,727.00	\$509,046	\$712,665	\$66 / \$92

Line Item	Description	Quantity	Unit Rat	e	Total
2 G1	JOB SPECIFIC REQUIREMENTS		LSum	126,000.000	126,000
4 G1P1.1	Construction of side tracks and diversion works		LSum	126,000.000	126,000
6 G2	GENERAL REQUIREMENTS	1.000	LSum	148,680.000	148,680
7 G2P1	Provisional sum for Primary Testing Subcontract	1.000	item	126,000.000	126,000
8 G2P2	Provisional sum for WAE Drawings	1.000	item	22,680.000	22,680
10 G4	PRINCIPAL'S PROJECT ACCOMMODATION		LSum	302,400.000	302,400
11 G4P1	Establishment of Principal's Project Accommodation		LSum	151,200.000	151,200
12 G4P2	Maintenance of Principal's Project Accommodation until	48.000	week	3,150.000	151,200
	Completion				
14 G10	TRAFFIC MANAGEMENT		LSum	112,896.000	112,896
15 G10P1	Traffic Management	1.000		81,900.000	81,900
16 G10P2	Maintenance of Traffic Control Measures	12.000		1,008.000	12,096
17 G10P4	Routine Maintenance of New Roadways Opened to Traffic	1.000		18,900.000	18,900
19 G36 20 G36P2	ENVIRONMENTAL PROTECTION Site Monitoring	1.000	LSum	75,600.000 18,900.000	75,600 18,900
21 G36P2.1	Air Pollution	1.000		18,900.000	18,900
22 G36P2.2	Noise	1.000	•	18,900.000	18,900
23 G36P2.3	Ground Vibration	1.000		18,900.000	18,900
25 G40	CLEARING AND GRUBBING		LSum	12,973.673	12,974
26 G40P1	Clearing and grubbing	3,623.000		3.581	12,974
28 R11	STORMWATER DRAINAGE (All Provisional)	· ·	LSum	100,800.000	100,800
29 R11P1	Allow provisional sum for stormwater drainage	1.000		100,800.000	100,800
30 R15	KERBS AND GUTTERS	1.000	LSum	6,360.190	6,360
32 R15P1.1	Kerb and gutter (Provisional)	40.000	m	76.020	3,041
33 R15P1.2	Kerb only (median - localised at intersections) - Provisional -	50.000	m	66.388	3,319
	Type SF				
35 R44	EARTHWORKS		LSum	1,091,969.695	1,091,970
37 R44P1.1	Removal and stockpiling of non-contaminated topsoil	726.000		20.394	14,806
38 R44P1.2	Dispose excavated topsoil to temporary stockpile on site for	726.000	m3	14.994	10,886
	future use (landscaping etc)				
40 R44P2.1	Excavation of all material	1,296.000		17.325	22,453
41 R44P2.2	Excavation of 500mm thick to existing road pavement	1,380.000		17.325	23,909
42 R44P2.3	Removal and disposal of surplus topsoil to spoil heap for	2,141.000	m3	14.994	32,102
4.4	future use (embankment, etc)	0.444.000		F 770	40.000
44	Road embankment using excavated material for fill Road embankment using imported material for fill	2,141.000 8,959.000		5.776	12,366
45 47 R44P4.1	Disposal of unsuitable and surplus material (Assumed 20%	535.000		74.436 60.103	666,870 32,155
47 134454.1	unsuitable)	333.000	1113	00.103	32,133
49 R44P7.1	Treatment Type E1 and Cutting Type C1 - loosen and	519.000	m2	27.720	14,387
40 1441 7.1	recompact (20% of new pavement area - excluding bridge)	010.000	1112	27.720	14,007
50 R44P7.1	Trim and Compaction	519.000	m2	2.520	1,308
54 R44P5.1	Supply and Place 300mm subbase, unbound new road	622.000		140.016	87,090
	pavement				J., 3000
55 R44P5.2	Supply and Place 300mm subbase, unbound existing road	828.000	m3	139.099	115,174
	pavement				
57 R44P6.1	300mm Controlled subbase, comprising of in-situ lime	1,450.000	m3	40.320	58,464
	stabilisation (Min 2% Quicklime by mass) (Cut areas only) to				
	road pavement				
59 R71	UNBOUND AND MODIFIED PAVEMENT COURSE		LSum	155,978.350	155,978
61 R71P1.7	Supply and Place 250mm DGB20 sub base (Provisional)	100.000		164.412	16,441
63 R71P2.1	Supply and Place 200mm DGB20 Base to road pavement	967.000		144.299	139,537
65 R83	GENERAL PAVEMENT BASE		LSum	7,595.734	7,596
67 R173P1.1	Concrete footpath / bus stop area (250mm thick, 40MPa	20.000	m2	172.027	3,441
	reinforced concrete, including SL72 reinforcement and				
68 R173P1.2	jointing) - Provisional Concrete median infill slab to localised areas (intersections)	30.000	m?	138.507	4,155
00 1(173) 1.2	(125mm thick, 25MPa reinforced concrete with stencilled	30.000	1112	130.307	4,133
	finish, including SL72 reinforcement)				
70 R106	SPRAYED BITUMINOUS SURFACING	1.000	LSum	61,367.558	61,368
72 R106P1.1	AMC4 1.5L/m2	11,591.000		2.381	27,603
73 R106P1.2	Supply and Spray Binder - Class 170 Bitumen (including	11,591.000		0.466	5,404
	Adhesion Agent where required and Preparation of Surface)	,			,
75 R106P7.1	7mm aggregate	7,727.000	m2	1.223	9,454
76 R106P7.2	14mm aggregate	7,727.000	m2	2.447	18,907
84 R141	PAVEMENT MARKING		LSum	21,077.595	21,078
86 R141P3.2	C1 lines	600.000		6.300	3,780
87 R141P3.3	C4 lines	100.000		6.300	630
88 R141P3.4	E1 lines	1,200.000		8.400	10,080
89 R141P3.7	L1 lines	600.000		5.040	3,024
90 R141P3.8	L3 lines	30.000		5.040	151
91 R141P3.9	L6 lines	50.000		5.040	252
92 R141P3.10		40.000		5.040	202
94 R141P4.5 95 R141P4.6	UA3L arrow UA3R arrow	11.000 10.000		95.445 95.445	1,050 954
96 R141P4.6	UA5R arrow	5.000		95.445	954 477
97 R141P4.8	Bicycle marking	5.000		95.445	477 477
98 R142	RAISED PAVEMENT MARKERS (Provisional)		LSum	2,299.223	2,299
UU INTE		1.000	200111	_,	2,200

00 D440D0 4	T AM	00 000	00.000	0.000
99 R142P2.1	Type W	60.000 each	38.320	2,299
100 R143	SIGNPOSTING	1.000 LSum	18,792.741	18,793
102 R143P1.1	Major directional signs	1.000 each	10,710.000	10,710
104 R143P2.6	Type R1-2B 'GIVE WAY'	2.000 each	1,143.880	2,288
105 R143P2.10	Type R4-1 Speed Limit	6.000 each	965.830	5,795
118 R178	VEGETATION (ALL PROVISIONAL)	1.000 LSum	72,426.677	72,427
120 R178P2.1	Areas with a slope of 5 to 1 or flatter (Provisional)	1,500.000 m2	7.284	10,926
121 R178P2.2	Areas steeper than 5 to 1 except stepped batters	2,680.000 m2	10.079	27,011
123 RS178P4.1	Rural grass mix seeding to to site boundaries	2,680.000 m2	1.511	4,049
124 R178P11	Topsoiling of open drains using site material including surface	750.000 m2	7.284	5,463
	preparation and screening of topsoil stockpiles (10% of total			
	area)			
125 R178P17	Lining open drains with organic fibre mesh (10%)	750.000 m2	13.149	9,862
126 R178P19	Watering	8,360.000 m2	1.808	15,116
128 R179	LANDSCAPE PLANTING	1.000 LSum	23,499.000	23,499
131 R179P6.2a		30.000 each	44.100	1,323
132 R179P6.2b		30.000 each	214.200	6,426
		5.000 each		
133 R179P12	Maintenance watering		3,150.000	15,750
135 R201	FENCING (All Provisional)	1.000 LSum	11,340.000	11,340
137 R201P6.2	Picket and wire fencing	360.000 m	31.500	11,340
140 R204	PROPERTY ADJUSTMENTS (Provisional)	1.000 LSum	252,000.000	252,000
141 R204P1	Adjustments to Properties	1.000 Item	252,000.000	252,000
144 B1	OPTION 2 SPORTSMAN CREEK BRIDGE STRUCTURES	1.000 LSUM	6,144,589.560	6,144,590
110 57 11	Dill Ov D	450.000		
146 B1.1.1	Bridge Site Preparation	450.000 m2	77.922	35,065
147 B1.1.2	Restoration of bridge site	450.000 m2	126.000	56,700
148 B1.1.3	900 mm dia. driven reinforced concrete pile	300.000 m	1,600.000	480,000
149 B1.1.7	Pile integrity testing	10.000 each	504.000	5,040
150 B1.1.8	Sheet Piling	912.000 m2	657.632	599,760
151 B1.1.9	Temporary Works and Scaffolding Allowance	1.000 Item	100,800.000	100,800
152 B1.1.11	Dewatering	1.000 Item	284,137.308	284,137
153 B1.1.12	Water Quality Allowance	1.000 Item	124,570.152	124,570
156 B1.2.1	Concrete Class 40 Mpa/20 (6 x 3 x 1.5 m deep) 5 caps in total	161.000 m ³	1,033.200	166,345
100 D1.2.1	Ochlorete Olass 40 Mpa/20 (0 x 3 x 1.3 m deep) 3 daps in total	101.000 111	1,000.200	100,040
157 B1.2.2	Steel reinforcing bar (Provisional Quantity), N32 Bar - Allow	29.000 tonne	2,953.184	85,642
	180kg / m3		_,	
159 B1.3.1	Concrete Class 40 Mpa/20 (900 dia x 5m H) - 2 columns x 3	20.000 m ³	729.506	14,590
100 10.0.1	intermediates	20.000 111	720.000	14,000
160 B1.3.2	Steel reinforcing bar (Provisional Quantity), N32 Bar - Allow	5.000 tonne	2,953.192	14,766
100 Б1.3.2	250kg / m3 For Collision	3.000 torine	2,900.192	14,700
160 D4 4 4		08 0003	1 146 600	110.067
162 B1.4.1	Concrete Class 40] Mpa/20 (12 m L x 1.8W x 1.5D)	98.000 m ³	1,146.600	112,367
163 B1.4.2	Steel reinforcing bar (Provisional Quantity), N32 Bar - Allow	18.000 tonne	2,953.184	53,157
	180kg / m3			
165 B1.5.1	Prestressed concrete T girders, supply on Site, 35 metres	24.000 each	48,420.351	1,162,088
	long			
166 B1.5.3	Erection of Prestressed concrete T girders, 35 meters long	24.000 each	6,151.995	147,648
168 B1.6.1	Pot-type bearings, 2000kN,	48.000 each	4,050.668	194,432
169 B1.6.3	Girder restraints block	48.000 each	838.623	40,254
171 B1.7.1	Concrete Class 40 Mpa/20 in deck Av. 250mm thickness	700.000 m ³	439.003	307,302
172 B1.7.2	Concrete Class 40 Mpa/20 in parapet and parapet terminal	168.000 m³	2,372.833	398,636
173 B1.7.3	Concrete Class 40 Mpa/20 in transition slabs	125.000 m³	472.640	59,080
174 B1.7.4	Reinforcing steel in decks Allow 220kg/m3	182.000 tonne	3,702.633	673,879
176 B1.8.1	Bituminous waterproof membrane for bridges	1,750.000 m ²	18.572	32,502
182 B1.9.1	Anchors for guardrail terminals	1.000 Lsum	7,765.128	7,765
183 B1.9.2	Bridging strips, compressible fillers and isolation inserts - 6	1.000 Lsum	3,023.894	
103 11.9.2	Joints	1.000 Esum	3,023.094	3,024
184 B1.9.3	Joints Joint sealants - 6 Joints	1.000 Lsum	2,915.964	2,916
185 B1.9.4	Supply and fabrication of bridge traffic rail, steel including	420.000 m	910.287	382,321
400 54 0 5	pedestrian separation	400.000	10.1 ====	100 == 1
186 B1.9.5	Transport and erection of bridge balustrade, steel including	420.000 m	434.700	182,574
	pedestrian separation			
187 B1.9.6	Bolted-in aluminium bridge deck expansion joints - 1 span	1.000 Lsum	36,204.563	36,205
188 B1.9.8	Safety Screen Erection	280.000 m	583.200	163,296
189 B1.9.9	Safety Screen Manufacture and delivery	280.000 m	777.600	217,728
193 B2	DEMOLITION OF EXISTING BRIDGE	1.000 LSum	630,000.000	630,000
194 B2.1	Works associated with demolition of existing bridge and	1.000 LSum	630,000.000	630,000
	reinstatement works at Bridge Street and Flo Clark Park			

Total Infrastructure Costs 9,378,646

Estimate Summary Sheet - Total

Project: Sportsman Creek New Bridge

Estimate Prepared by: Quantities Prepared by: Aquenta Consulting Pty Ltd Level 10, 67 Albert Avenue Chatswood NSW 2067

Project No: 213083 Date: 07/11/2013 Estimate Type: Preliminary Sketch - Option 3

Item	Item Base Estimate Contingency Estimate % of Total				Comments/Assumptions	
Rem	(excluding	%	Amount	(including	Estimate	Comments/Assumptions
	contingency)			contingency)		
4. Bushed Boundary and						
1. Project Development						
1 (a) Route/Concept/EIS	\$248,448	40%	\$99,379	\$347,827		2.5% of Construction Costs
1 (b) Project Management Services	\$24,845	40%	\$9,938	\$34,783		10% of Route/Concept/EIS
1 (c) Sponsor	\$2,484	40%	\$994	\$3,478		10% of PM Services Costs
1 (d) Community Liaison	\$9,000	40%	\$3,600	\$12,600		General Allowance
Sub total	\$284,777	40%	\$113,911	\$398,688	2.30%	-
ous total	Ψ204,111	4070	Ψ110,511	φοσο,σοσ	2.0070	
2. Detail Design & Documentation						
2 (a) Investigation and Design	\$397,517	40%	\$159,007	\$556,523		4% of Construction Cost
2 (b) Project Management Services	\$39,752	40%	\$15,901	\$55,652		10% of Investigation and Design
2 (c) Client Representation	\$3,975	40%	\$1,590	\$5,565		10% of Project Management Services
Sub total	\$441,243	40%	\$176,497	\$617,741	3.56%	1
	Ψ ,= . σ	.070	ψσ,σ.	ψο,	0.0070	
3. Property Acquisitions						
3 (a) Acquire Property	\$400,000	40%	\$160,000	\$560,000		As advised by RMS
3 (b) Professional Services for Property	\$40,000	40%	\$16,000	\$56,000		10% of Property
3 (c) Project Management Services	\$4,000	40%	\$1,600	\$5,600		10% of professional services
(c)	\$ 1,000			40,000		
Sub total	\$444,000	40%	\$177,600	\$621,600	3.58%	
4. Utility Adjustments						
4 (a) Adjust Utilities	\$200,000	40%	\$80,000	\$280,000		Allowance only.
4 (b) Project Management Services	\$20,000	40%	\$8,000	\$28,000		10% of Utilty Costs
4 (c) Client Representation	\$2,000	40%	\$800	\$2,800		10% of Project Management Services
(c) Olient representation	Ψ2,000	40 /0	φοσο	Ψ2,000		1070 OF Froject Management Dervices
Sub total	\$222,000	40%	\$88,800	\$310,800	1.79%	
5. Infrastructure Construction						
5(a) - 5(c) Infrastructure	\$9,637,913	40%	\$3,855,165	\$13,493,078		
5(d) Project Management Services	\$963,791	40%	\$385,517	\$1,349,308		10% of Infrastructure
5(e) Client Representation	\$96,379	40%	\$38,552	\$134,931		10% of Project Management Services
5(f) PA Insurance	\$43,371	40%	\$17,348	\$60,349		0.45% of Infrastructure
Sub total	\$10,741,454	40%	\$4,296,582	\$15,037,666	86.67%	-
			, ,			
6. Finalisation						
6 (a) Refurbish old route	\$100,000	40%	\$40,000	\$140,000		Allowance
6 (b) Project data and post completion review.	\$144,569	40%	\$57,827	\$202,396		1.5% of Construction Cost
6 (c) Project Management Services	\$14,457	40%	\$5,783	\$20,240		10% of Project Data Costs
6 (d) Client Representation	\$1,446	40%	\$578	\$2,024		10% of Project Management Services
Sub total	\$260,471	40%	\$104,189	\$364,660	2.10%	-
Sub total	φ200,47 Ι	1 U /0	φ104,109	φ304,000	Z. IU 70	
TOTAL - PRELIMINARY SKETCH ESTIMATE	\$12,393,946	40%	\$4,957,578	\$17,351,154		

INDICATIVE COST ESTIMATE:

\$18,000,000

Rounded as per 4.5 of RMS Estimating Requirements

Reality checks:					
Component	Unit	Quantity	Cost excl cont	Cost incl	Cost Unit excl cont/Cost Unit incl
		,		cont	cont
1. Cost per km	km	0.81	\$12,393,946	\$17,351,154	\$15,301,167 / \$21,421,178
2. Cost per lane-km (Road and Bridge)	lane-km	1.62	\$12,393,946	\$17,351,154	\$7,650,584 / \$10,710,589
3. Cost per lane-km (Road only excl. Bridge)	lane-km	1.34	\$4,492,265	\$6,289,171	\$3,352,437 / \$4,693,411
4. Cost per sqm of Bridge	sq.m	1,750.00	\$6,144,590	\$8,602,425	\$3,511 / \$4,916
5. Cost of earthworks /m3	cu.m	15,751.00	\$868,808	\$1,216,332	\$55 / \$77
6. Cost of pavement /m2	sq.m	10,142.00	\$684,921	\$958,890	\$68 / \$95

Line	Item	Description	Quantity	Unit Rate		Total
	! G1	JOB SPECIFIC REQUIREMENTS		LSum	126,000.000	
	G1P1.1	Construction of side tracks and diversion works	1.000		126,000.000	
	G2	GENERAL REQUIREMENTS		LSum	148,680.000	
	' G2P1	Provisional sum for Primary Testing Subcontract	1.000		126,000.000	
	3 G2P2	Provisional sum for WAE Drawings	1.000	item	22,680.000	
10	G4	PRINCIPAL'S PROJECT ACCOMMODATION	1.000	LSum	302,400.000	302,400
11	G4P1	Establishment of Principal's Project Accommodation	1.000	LSum	151,200.000	151,200
12	2 G4P2	Maintenance of Principal's Project Accommodation until	48.000	week	3,150.000	151,200
		Completion				
	G10	TRAFFIC MANAGEMENT		LSum	112,896.000	
	G10P1	Traffic Management	1.000		81,900.000	
	G10P2	Maintenance of Traffic Control Measures	12.000		1,008.000	
	' G10P4	Routine Maintenance of New Roadways Opened to Traffic	1.000		18,900.000	
	G36	ENVIRONMENTAL PROTECTION		LSum	75,600.000	· · · · · · · · · · · · · · · · · · ·
	G36P2	Site Monitoring	1.000	•	18,900.000	
	G36P2.1	Air Pollution	1.000	•	18,900.000	
	2 G36P2.2	Noise	1.000	•	18,900.000	· ·
	G36P2.3	Ground Vibration	1.000	•	18,900.000	
	G40	CLEARING AND GRUBBING		LSum	29,850.549	· · · · · · · · · · · · · · · · · · ·
	G40P1	Clearing and grubbing	8,336.000		3.581	29,851
	R11	STORMWATER DRAINAGE (All Provisional)		LSum	100,800.000	· · · · · · · · · · · · · · · · · · ·
	R11P1 R15	Allow provisional sum for stormwater drainage KERBS AND GUTTERS	1.000	LSum	100,800.000	
	R15P1.1		40.000		6,360.190 76.020	· · · · · · · · · · · · · · · · · · ·
	R15P1.1	Kerb and gutter (Provisional) Kerb only (median - localised at intersections) - Provisional -	50.000		66.388	
33	/ ICTOF 1.Z	Type SF	50.000	111	00.300	3,319
35	R44	EARTHWORKS	1 000	LSum	1,229,523.168	1,229,523
	R44P1.1	Removal and stockpiling of non-contaminated topsoil	1,670.000		20.394	
	R44P1.1	Dispose excavated topsoil to temporary stockpile on site for	1,670.000		14.994	
30		future use (landscaping etc)	1,070.000		14.004	20,040
40	R44P2.1	Excavation of all material	2,981.000	m3	17.325	51,646
	R44P2.2	Excavation of 500mm thick to existing road pavement	975.000		17.325	
	R44P2.3	Removal and disposal of surplus topsoil to spoil heap for	3,165.000		14.994	· · · · · · · · · · · · · · · · · · ·
		future use (embankment, etc)	3,133,333			,
44	ļ	Road embankment using excavated material for fill	3,165.000	m3	5.776	18,281
45		Road embankment using imported material for fill	7,935.000		74.583	
	' R44P4.1	Disposal of unsuitable and surplus material (Assumed 20%	791.000		60.103	The state of the s
		unsuitable)				,-
49	R44P7.1	Treatment Type E1 and Cutting Type C1 - loosen and	1,193.000	m2	27.720	33,070
		recompact (20% of new pavement area - excluding bridge)				
50	R44P7.1	Trim and Compaction	1,193.000	m2	2.520	3,006
54	R44P5.1	Supply and Place 300mm subbase, unbound new road	1,431.000	m3	137.935	197,385
		pavement				
55	R44P5.2	Supply and Place 300mm subbase, unbound existing road	585.000	m3	140.248	82,045
		pavement				
57	' R44P6.1	300mm Controlled subbase, comprising of in-situ lime	2,016.000	m3	40.320	81,285
		stabilisation (Min 2% Quicklime by mass) (Cut areas only) to				
		main carriageway and temporary Richmond Rd				
	R71	UNBOUND AND MODIFIED PAVEMENT COURSE		LSum	209,488.316	
	R71P1.7	Supply and Place 250mm DGB20 sub base (Provisional)	100.000		164.412	
	R71P2.1	Supply and Place 200mm DGB20 Base to road pavement	1,344.000		143.636	
	R83	GENERAL PAVEMENT BASE Congrete feetpath / bus stop area (250mm thick, 40MPc)		LSum	7,595.734	
67	' R173P1.1	Concrete footpath / bus stop area (250mm thick, 40MPa	20.000	mz	172.027	3,441
		reinforced concrete, including SL72 reinforcement and jointing) - Provisional				
69	8 R173P1.2	Concrete median infill slab to localised areas (intersections)	30.000	m2	138.507	4,155
00	/ IX173F 1.Z	(125mm thick, 25MPa reinforced concrete with stencilled	30.000	1112	130.507	4,105
		finish, including SL72 reinforcement)				
70	R106	SPRAYED BITUMINOUS SURFACING	1,000	LSum	81,201.743	81,202
	R106P1.1	AMC4 1.5L/m2	15,213.000		2.381	36,228
	R106P1.2	Supply and Spray Binder - Class 170 Bitumen (including	15,213.000		0.466	
		Adhesion Agent where required and Preparation of Surface)	, , , , , , , , , , , , , , , , , , , ,			,
75	R106P7.1	7mm aggregate	10,142.000	m2	1.223	12,408
76	R106P7.2	14mm aggregate	10,142.000		2.446	
	R141	PAVEMENT MARKING	,	LSum	23,621.535	· · · · · · · · · · · · · · · · · · ·
	R141P3.2	C1 lines	811.000		6.300	
	' R141P3.3	C4 lines	100.000		6.300	
	R141P3.4	E1 lines	1,622.000		6.215	•
	R141P3.7	L1 lines	811.000		5.040	
	R141P3.8	L3 lines	40.000		5.040	
	R141P3.9	L6 lines	70.000		5.040	
	R141P3.10		40.000		5.040	
	R141P4.5	UA3L arrow	11.000		95.445	
	R141P4.6	UA3R arrow	10.000		95.445	
	R141P4.7	UA5R arrow	5.000		95.445	
	R141P4.8	Bicycle marking	5.000		95.445	
	R142	RAISED PAVEMENT MARKERS (Provisional)		LSum	2,299.223	·
	R142P2.1	Type W	60.000		38.320	
100	R143	SIGNPOSTING	1.000	LSum	18,792.741	18,793

102 R143P1.1	Major directional signs	1.000	each	10,710.000	10,710
104 R143P2.6	Type R1-2B 'GIVE WAY'	2.000	each	1,143.880	2,288
	Type R4-1 Speed Limit	6.000		965.830	5,795
118 R178	VEGETATION (ALL PROVISIONAL)		LSum		
				72,426.677	72,427
120 R178P2.1	Areas with a slope of 5 to 1 or flatter (Provisional)	1,500.000	m2	7.284	10,926
121 R178P2.2	Areas steeper than 5 to 1 except stepped batters	2,680.000	m2	10.079	27,011
123 RS178P4.1	Rural grass mix seeding to to site boundaries	2,680.000	m2	1.511	4,049
124 R178P11	Topsoiling of open drains using site material including surface	750.000		7.284	5,463
12111110111	preparation and screening of topsoil stockpiles (10% of total area)	700.000		7.20	0,100
125 R178P17	Lining open drains with organic fibre mesh (10%)	750.000	m2	13.149	9,862
126 R178P19	Watering	8,360.000	m2	1.808	15,116
128 R179	LANDSCAPE PLANTING		LSum	25,420.500	25,421
	Tree planting (medium)	25.000		44.100	1,103
		40.000		214.200	
	Tree planting (large)				8,568
133 R179P12	Maintenance watering	5.000		3,150.000	15,750
136 R201	FENCING (All Provisional)		LSum	38,367.000	38,367
138 R201P6.2	Picket and wire fencing	1,218.000	m	31.500	38,367
141 R204	PROPERTY ADJUSTMENTS (Provisional)	1.000	LSum	252,000.000	252,000
142 R204P1	Adjustments to Properties	1.000	Isum	252,000.000	252,000
145 B1	OPTION 3 SPORTSMAN CREEK BRIDGE STRUCTURES	1.000	LSUM	6,144,589.560	6,144,590
4.47 D4.4.4	Dridge Cite Dreseration	450,000	0	77,000	25.005
147 B1.1.1	Bridge Site Preparation	450.000		77.922	35,065
148 B1.1.2	Restoration of bridge site	450.000		126.000	56,700
149 B1.1.3	900 mm dia. driven reinforced concrete pile	300.000		1,600.000	480,000
150 B1.1.7	Pile integrity testing	10.000	each	504.000	5,040
151 B1.1.8	Sheet Piling	912.000	m2	657.632	599,760
152 B1.1.9	Temporary Works and Scaffolding Allowance	1.000	Item	100,800.000	100,800
153 B1.1.11	Dewatering	1.000		284,137.308	284,137
154 B1.1.12	Water Quality Allowance	1.000		124,570.152	124,570
				•	
157 B1.2.1	Concrete Class 40 Mpa/20 (6 x 3 x 1.5 m deep) 5 caps in total	161.000	W ₂	1,033.200	166,345
158 B1.2.2	Steel reinforcing bar (Provisional Quantity), N32 Bar - Allow 180kg / m3	29.000	tonne	2,953.184	85,642
160 B1.3.1	Concrete Class 40 Mpa/20 (900 dia x 5m H) - 2 clumns x 3 intermediates	20.000	m³	729.506	14,590
161 B1.3.2	Steel reinforcing bar (Provisional Quantity), N32 Bar - Allow 250kg / m3 For Collision	5.000	tonne	2,953.192	14,766
163 B1.4.1	Concrete Class 40] Mpa/20 (12 m L x 1.8W x 1.5D)	98.000	m³	1,146.600	112,367
164 B1.4.2	Steel reinforcing bar (Provisional Quantity), N32 Bar - Allow 180kg / m3	18.000	tonne	2,953.184	53,157
166 B1.5.1	Prestressed concrete T girders, supply on Site, 35 metres long	24.000		48,420.351	1,162,088
167 B1.5.3	Erection of Prestressed concrete T girders, 35 meters long	24.000		6,151.995	147,648
169 B1.6.1	Pot-type bearings, 2000kN,	48.000	each	4,050.668	194,432
170 B1.6.3	Girder restraints block	48.000	each	838.623	40,254
172 B1.7.1	Concrete Class 40 Mpa/20 in deck Av. 250mm thickness	700.000		439.003	307,302
173 B1.7.2	Concrete Class 40 Mpa/20 in parapet and parapet terminal	168.000		2,372.833	398,636
174 B1.7.3	Concrete Class 40 Mpa/20 in transition slabs	125.000		472.640	59,080
175 B1.7.4	Reinforcing steel in decks Allow 220kg/m3	182.000		3,702.633	673,879
177 B1.8.1	Bituminous waterproof membrane for bridges	1,750.000		18.572	32,502
183 B1.9.1	Anchors for guardrail terminals		Lsum	7,765.128	7,765
184 B1.9.2	Bridging strips, compressible fillers and isolation inserts - 6 Joints	1.000	Lsum	3,023.894	3,024
185 B1.9.3	Joint sealants - 6 Joints	1.000	Lsum	2,915.964	2,916
186 B1.9.4	Supply and fabrication of bridge traffic rail, steel including pedestrian separation	420.000	m	910.287	382,321
187 B1.9.5	Transport and erection of bridge balustrade, steel including pedestrian separation	420.000	m	434.700	182,574
188 B1.9.6	Bolted-in aluminium bridge deck expansion joints - 1 span	1,000	Lsum	36,204.563	36,205
189 B1.9.8	Safety Screen Erection	280.000		583.200	163,296
	Safety Screen Manufacture and delivery	280.000			
190 B1.9.9				777.600	217,728
194 B2	DEMOLITION OF EXISTING BRIDGE		LSum	630,000.000	630,000
195 B2.1	Works associated with demolition of existing bridge and	1.000	LSum	630,000.000	630,000
	reinstatement works at Bridge Street and Flo Clark Park				

Total Infrastructure Costs

9,637,913

Estimate Summary Sheet - Total

Project: Sportsman Creek New Bridge

Estimate Prepared by:

Quantities Prepared by:

Chatswood NSW 2067

Aquenta Consulting Pty Ltd

Level 10, 67 Albert Avenue

Chatswood NSW 2067

Project No: 213083 Date: 07/11/2013 Estimate Type: Preliminary Sketch - Option 4

Item	Base Estimate	Estimate Contingency		Estimate % of Total		Comments/Assumptions	
	(excluding	%	Amount	(including	Estimate		
	contingency)			contingency)			
1. Project Development							
1 (a) Route/Concept/EIS	\$248,639	40%	\$99,456	\$348,094		2.5% of Construction Costs	
1 (b) Project Management Services	\$24,864	40%	\$9,946	\$34,809		10% of Route/Concept/EIS	
1 (c) Sponsor	\$2,486	40%	\$995	\$3,481		10% of PM Services Costs	
1 (d) Community Liaison	\$9,000	40%	\$3,600	\$12,600		General Allowance	
				·			
Sub total	\$284,989	40%	\$113,996	\$398,985	2.34%		
2. Detail Design & Documentation							
2 (a) Investigation and Design	\$397,822	40%	\$159,129	\$556,951		4% of Construction Cost	
2 (b) Project Management Services	\$39,782	40%	\$15,913	\$55,695		10% of Investigation and Design	
2 (c) Client Representation	\$3,978	40%	\$1,591	\$5,570		10% of Project Management Services	
Sub total	\$441,583	40%	\$176,633	\$618,216	3.63%		
3. Property Acquisitions							
3 (a) Acquire Property	\$200,000	40%	\$80,000	\$280,000		As advised by RMS	
3 (b) Professional Services for Property	\$20,000	40%	\$8,000	\$28,000		10% of Property	
3 (c) Project Management Services	\$2,000	40%	\$800	\$2,800		10% of professional services	
o (o) i roject management services	ψ2,000	1070	φοσσ	ΨΞ,000		To you or professional services	
Sub total	\$222,000	40%	\$88,800	\$310,800	1.82%		
4. Utility Adjustments							
4 (a) Adjust Utilities	\$250,000	40%	\$100,000	\$350,000		Allowance only.	
4 (b) Project Management Services	\$25,000	40%	\$10,000	\$35,000		10% of Utilty Costs	
4 (c) Client Representation	\$2,500	40%	\$1,000	\$3,500		10% of Project Management Services	
	+ /		+ ,	¥ - /			
Sub total	\$277,500	40%	\$111,000	\$388,500	2.28%		
5. Infrastructure Construction							
5(a) - 5(c) Infrastructure	\$9,595,552	40%	\$3,838,221	\$13,433,773			
5(d) Project Management Services	\$959,555	40%	\$383,822	\$1,343,377		10% of Infrastructure	
5(e) Client Representation	\$95,956	40%	\$38,382	\$134,338		10% of Project Management Services	
5(f) PA Insurance	\$43,180	40%	\$17,272	\$60,082		0.45% of Infrastructure	
Sub total	\$10,694,243	40%	\$4,277,697	\$14,971,570	87.80%		
6. Finalisation							
6 (a) Refurbish old route	\$100,000	40%	\$40,000	\$140,000		Allowance	
6 (b) Project data and post completion review.	\$143,933	40%	\$57,573	\$201,507		1.5% of Construction Cost	
6 (c) Project Management Services	\$14,393	40%	\$5,757	\$20,151		10% of Project Data Costs	
6 (d) Client Representation	\$1,439	40%	\$576	\$2,015		10% of Project Management Services	
			·				
Sub total	\$259,766	40%	\$103,906	\$363,672	2.13%		
TOTAL - PRELIMINARY SKETCH ESTIMATE	\$12,180,081	40%	\$4,872,032	\$17,051,743			

INDICATIVE COST ESTIMATE:

\$18,000,000

Rounded as per 4.5 of RMS Estimating Requirements

Reality checks:					
Component	Unit	Quantity	Cost excl cont	Cost incl cont	Cost Unit excl cont/Cost Unit incl cont
1. Cost per km	km	0.75	\$12,180,081	\$17,051,743	\$16,349,101 / \$22,888,245
2. Cost per lane-km (Road and Bridge)	lane-km	1.49	\$12,180,081	\$17,051,743	\$8,174,551 / \$11,444,123
3. Cost per lane-km (Road only excl. Bridge)	lane-km	1.21	\$4,380,467	\$6,132,654	\$3,620,221 / \$5,068,309
4. Cost per sqm of Bridge (Only)	sq.m	1,750.00	\$6,144,590	\$8,602,425	\$3,511 / \$4,916
5. Cost of earthworks /m3	cu.m	14,139.00	\$861,463	\$1,206,049	\$61 / \$85
6. Cost of pavement /m2	sq.m	9,313.00	\$674,047	\$943,666	\$72 / \$101

Line	Itom	Description	Quantity	Unit	Rate Total	
	G1	JOB SPECIFIC REQUIREMENTS		LSum	126,000.000	126,000
	G1P1.1	Construction of side tracks and diversion works		LSum	126,000.000	126,000
6	G2	GENERAL REQUIREMENTS		LSum	148,680.000	148,680
7	G2P1	Provisional sum for Primary Testing Subcontract	1.000	item	126,000.000	126,000
	G2P2	Provisional sum for WAE Drawings	1.000		22,680.000	22,680
	G4	PRINCIPAL'S PROJECT ACCOMMODATION		LSum	302,400.000	302,400
	G4P1	Establishment of Principal's Project Accommodation		LSum	151,200.000	151,200
12	G4P2	Maintenance of Principal's Project Accommodation until Completion	48.000	week	3,150.000	151,200
14	G10	TRAFFIC MANAGEMENT	1,000	LSum	112,896.000	112,896
	G10P1	Traffic Management		Lsum	81,900.000	81,900
	G10P2	Maintenance of Traffic Control Measures	12.000		1,008.000	12,096
	G10P4	Routine Maintenance of New Roadways Opened to Traffic		Lsum	18,900.000	18,900
19	G36	ENVIRONMENTAL PROTECTION	1.000	LSum	75,600.000	75,600
20	G36P2	Site Monitoring	1.000		18,900.000	18,900
	G36P2.1	Air Pollution	1.000		18,900.000	18,900
	G36P2.2	Noise	1.000		18,900.000	18,900
	G36P2.3	Ground Vibration	1.000		18,900.000	18,900
	G40 G40P1	CLEARING AND GRUBBING		LSum	19,530.338	19,530
	R11	Clearing and grubbing STORMWATER DRAINAGE (All Provisional)	5,454.000	LSum	3.581 100,800.000	19,530 100,800
	R11P1	Allow provisional sum for table drains	1.000		100,800.000	100,800
	R15	KERBS AND GUTTERS		LSum	6,360.190	6,360
	R15P1.1	Kerb and gutter (Provisional)	40.000		76.020	3,041
	R15P1.2	Kerb only (median - localised at intersections) - Provisional - Type SF	50.000		66.388	3,319
	R44	EARTHWORKS		LSum	1,220,885.148	1,220,885
	R44P1.1	Removal and stockpiling of non-contaminated topsoil	1,091.000		20.394	22,250
	R44P1.2	Dispose excavated topsoil to temporary stockpile on site for future use (landscaping etc)	1,091.000		14.994	16,358
	R44P2.1	Excavation of all material	1,948.000		17.325	33,749
	R44P2.2	Excavation of 500mm thick to existing road pavement	1,750.000		17.325	30,319
42	R44P2.3	Removal and disposal of surplus topsoil to spoil heap for	2,958.000	m3	14.994	44,352
11		future use (embankment, etc) Road embankment using excavated material for fill	2.059.000	m ²	5 77 6	17.005
44 45		Road embankment using excavated material for fill	2,958.000 8,142.000		5.776 74.403	17,085 605,789
	R44P4.1	Disposal of unsuitable and surplus material (Assumed 20% unsuitable)	739.000		60.103	44,416
49	R44P7.1	Treatment Type E1 and Cutting Type C1 - loosen and recompact (40% of new pavement area - excluding bridge)	1,559.000	m2	27.720	43,215
50	R44P7.1	Trim and Compaction	1,559.000	m2	2.520	3,929
54	R44P5.1	Supply and Place 300mm subbase, unbound new road pavement	935.000		143.108	133,806
55	R44P5.2	Supply and Place 300mm subbase, unbound existing road pavement	1,050.000	m3	138.648	145,580
57	R44P6.1	300mm Controlled subbase, comprising of in-situ lime stabilisation (Min 2% Quicklime by mass) (Cut areas only) to	1,985.000	m3	40.320	80,035
50	R71	main carriageway and temporary Richmond Rd UNBOUND AND MODIFIED PAVEMENT COURSE	1 000	LSum	207,785.028	207,785
	R71P1.7	Supply and Place 250mm DGB20 sub base (Provisional)	100.000		164.412	16,441
	R71P2.1	Supply and Place 200mm DGB20 Base to road pavement	1,324.000		144.519	191,344
	R83	GENERAL PAVEMENT BASE		LSum	7,595.734	7,596
	R173P1.1	Concrete footpath / bus stop area (250mm thick, 40MPa reinforced concrete, including SL72 reinforcement and jointing)	20.000		172.027	3,441
68	R173P1.2	 Provisional Concrete median infill slab to localised areas (intersections) (125mm thick, 25MPa reinforced concrete with stencilled 	30.000	m2	138.507	4,155
		finish, including SL72 reinforcement)				
70	R106	SPRAYED BITUMINOUS SURFACING	1.000	LSum	73,951.544	73,952
	R106P1.1	AMC4 1.5L/m2	13,968.000		2.381	33,263
73	R106P1.2	Supply and Spray Binder - Class 170 Bitumen (including Adhesion Agent where required and Preparation of Surface)	13,968.000	ltr	0.466	6,512
75	R106P7.1	7mm aggregate	9,313.000	m2	1.223	11,392
	R106P7.1	14mm aggregate	9,313.000		2.446	22,784
	R141	PAVEMENT MARKING		LSum	22,784.895	22,785
	R141P3.2	C1 lines	745.000		6.300	4,694
	R141P3.3	C4 lines	90.000		6.300	567
88	R141P3.4	E1 lines	1,490.000	m	9.333	10,080
89	R141P3.7	L1 lines	745.000	m	5.040	3,755
	R141P3.8	L3 lines	40.000		5.040	202
	R141P3.9	L6 lines	65.000		5.040	328
	R141P3.10		40.000		5.040	202
	R141P4.5	UA3L arrow	11.000		95.445	1,050
	R141P4.6 R141P4.7	UA3R arrow UA5R arrow	10.000 5.000		95.445 95.445	954 477
	R141P4.7	Bicycle marking	5.000		95.445 95.445	477
	R141P4.0	RAISED PAVEMENT MARKERS (Provisional)		LSum	2,508.257	2,508
	R142P2.1	Type W	60.000		41.804	2,508
	R143	SIGNPOSTING		LSum	18,792.741	18,793
	R143P1.1	Major directional signs	1.000		10,710.000	10,710
	R143P2.6	Type R1-2B 'GIVE WAY'	2.000	each	1,143.880	2,288

105 R143P2.10	Type R4-1 Speed Limit	6.000 each	965.830	5,795
118 R178	VEGETATION (ALL PROVISIONAL)	1.000 LSum	63,676.544	63,677
120 R178P2.1	Areas with a slope of 5 to 1 or flatter (Provisional)	1,000.000 m2	7.284	7,284
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121 R178P2.2	Areas steeper than 5 to 1 except stepped batters	2,680.000 m2	10.079	27,011
123 RS178P4.1		2,680.000 m2	1.511	4,049
124 R178P11	Topsoiling of open drains using site material including surface	500.000 m2	7.284	3,642
	preparation and screening of topsoil stockpiles (10% of total			
	area)			
125 R178P17	Lining open drains with organic fibre mesh (10%)	500.000 m2	13.149	6,575
126 R178P19	Watering	7,360.000 m2	2.054	15,116
128 R179	LANDSCAPE PLANTING	1.000 LSum	23,499.000	23,499
131 R179P6.2a	Tree planting (medium)	30.000 each	44.100	1,323
132 R179P6.2b		30.000 each	214.200	6,426
133 R179P12	Maintenance watering	5.000 each	3,150.000	15,750
136 R201	FENCING (All Provisional)	1.000 LSum	35,217.000	35,217
138 R201P6.2	Picket and wire fencing	1,118.000 m	31.500	35,217
141 R204	PROPERTY ADJUSTMENTS (Provisional)	1.000 LSum	252,000.000	252,000
142 R204P1	Adjustments to Properties	1.000 Item	252,000.000	252,000
145 B1	OPTION 4 SPORTSMAN CREEK BRIDGE STRUCTURES	1.000 LSUM	6,144,589.560	6,144,590
147 B1.1.1	Bridge Site Preparation	450.000 m2	77.922	35,065
148 B1.1.2	Restoration of bridge site	450.000 m2	126.000	56,700
149 B1.1.3	900 mm dia. driven reinforced concrete pile	300.000 m	1,600.000	480,000
150 B1.1.7	Pile integrity testing	10.000 each	504.000	5,040
151 B1.1.8	Sheet Piling	912.000 m2	657.632	599,760
152 B1.1.9	Temporary Works and Scaffolding Allowance	1.000 Item	100,800.000	100,800
153 B1.1.11	Dewatering	1.000 Item	284,137.308	284,137
154 B1.1.12	Water Quality Allowance	1.000 Item	124,570.152	124,570
157 B1.2.1	Concrete Class 40 Mpa/20 (6 x 3 x 1.5 m deep) 5 caps in total	161.000 m ³	1,033.200	166,345
158 B1.2.2	Steel reinforcing bar (Provisional Quantity), N32 Bar - Allow	29.000 tonne	2,953.184	85,642
.00	180kg / m3	20.000 100	2,000.101	33,5 .=
160 B1.3.1		20.000 m ³	729.506	14 500
100 01.3.1	Concrete Class 40 Mpa/20 (900 dia x 5m H) - 2 columns x 3	20.000 1119	729.500	14,590
	intermediates			
161 B1.3.2	Steel reinforcing bar (Provisional Quantity), N32 Bar - Allow	5.000 tonne	2,953.192	14,766
	250kg / m3 For Collision			
163 B1.4.1	Concrete Class 40] Mpa/20 (12 m L x 1.8W x 1.5D)	98.000 m ³	1,146.600	112,367
164 B1.4.2	Steel reinforcing bar (Provisional Quantity), N32 Bar - Allow	18.000 tonne	2,953.184	53,157
	180kg / m3			
166 B1.5.1	Prestressed concrete T girders, supply on Site, 35 metres long	24.000 each	48,420.351	1,162,088
	g. do.o, oupply on one, outply on one,		.5, .25.55	.,,
167 B1.5.3	Erection of Prestressed concrete T girders, 35 meters long	24.000 each	6,151.995	147,648
169 B1.6.1	Pot-type bearings, 2000kN,	48.000 each	4,050.668	194,432
170 B1.6.3	Girder restraints block	48.000 each	838.623	40,254
172 B1.7.1	Concrete Class 40 Mpa/20 in deck Av. 250mm thickness	700.000 m ³	439.003	307,302
173 B1.7.2	Concrete Class 40 Mpa/20 in parapet and parapet terminal	168.000 m³	2,372.833	398,636
174 B1.7.3	Concrete Class 40 Mpa/20 in transition slabs	125.000 m³	472.640	59,080
175 B1.7.4	Reinforcing steel in decks Allow 220kg/m3	182.000 tonne	3,702.633	673,879
177 B1.8.1	Bituminous waterproof membrane for bridges	1,750.000 m ²	18.572	32,502
183 B1.9.1	Anchors for guardrail terminals	1.000 Lsum	7,765.128	7,765
184 B1.9.2	Bridging strips, compressible fillers and isolation inserts - 6	1.000 Lsum	3,023.894	3,024
104 01.3.2	Joints	1.000 LSuili	3,023.094	3,024
405 D4 0 0		4 000 1	0.045.004	0.040
185 B1.9.3	Joint sealants - 6 Joints	1.000 Lsum	2,915.964	2,916
186 B1.9.4	Supply and fabrication of bridge traffic rail, steel including	420.000 m	910.287	382,321
	pedestrian separation			
187 B1.9.5	Transport and erection of bridge balustrade, steel including	420.000 m	434.700	182,574
	pedestrian separation			
188 B1.9.6	Bolted-in aluminium bridge deck expansion joints - 1 span	1.000 Lsum	36,204.563	36,205
189 B1.9.8	Safety Screen Erection	280.000 m	583.200	163,296
190 B1.9.9	Safety Screen Manufacture and delivery	280.000 m	777.600	217,728
	DEMOLITION OF EXISTING BRIDGE			
194 B2		1.000 LSum	630,000.000	630,000
195 B2.1	Works associated with demolition of existing bridge and	1.000 LSum	630,000.000	630,000
	reinstatement works at Bridge Street and Flo Clark Park			

Total for all items 9,595,552