

CLASS 'C' ESTIMATE

JOHNSON STREET BRIDGE REPLACEMENT/REHABILITATION

VICTORIA, BC

June 9, 2010

**Prepared by
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INTRODUCTION

This report sets out the estimates of project cost for the proposed options for the Replacement or Rehabilitation of the Johnson Street Bridge in Victoria, BC.

The options considered within this report comprise:

- 1) Replacement of the existing vehicular and rail bridge
- 2) Rehabilitation of the existing vehicular and rail bridge incorporating design earthquake 'Critical Bridge' premium cost, steel grid deck replacement of the vehicular bascule bridge, and a new pedestrian/cyclist bascule bridge.

ESTIMATE COSTS

The project estimate costs have been developed in current (June, 2010) dollars and escalated through to the proposed schedule mid-points of construction. The project estimate costs are as follows:

Bridge Replacement:	
Replacement of the existing vehicular and rail bridge	<u>\$84,989,000</u>
Bridge Rehabilitation:	
Rehabilitation of the existing vehicular and rail bridge	\$62,663,000
Design earthquake 'Critical Bridge' premium cost	\$8,561,000
New pedestrian/cyclist bascule bridge	\$25,046,000
Vehicular bridge deck replacement	<u>\$1,396,000</u>
	<u>\$97,666,000</u>

The following information has been provided by MMM Group for inclusion within these estimates:

- Primary quantities, which form the basis of the project costs
- Estimates for mechanical and electrical systems
- Estimates for design and management fees

A breakdown of the project cost estimates are included:

Appendix A – Replacement of the existing vehicular and rail bridge

Appendix B - Rehabilitation of the existing vehicular and rail bridge
Design earthquake 'Critical Bridge' premium cost
New pedestrian/cyclist bascule bridge
Vehicular bridge deck replacement

Escalation

Cost escalation has been included in the estimate to reflect an anticipated construction start date of January, 2012.

It is common knowledge now that the global financial crisis at the end of 2008 was the cause of the worldwide recession that followed. Even now, the effects of the credit crunch continue to reverberate across borders and industries. The local economy in British Columbia is not immune to these effects, and we have seen in particular a major correction in pricing levels in the construction industry

We believe, as do many other construction economists, that falling construction costs in British Columbia have reached their nadir in 2010. We expect that there will be a modest recovery during the third and fourth quarter of 2010, with a corresponding stable increase in market price levels. Accordingly, provision has been made for escalation, commencing in July 2010, at 0.33% per month (non-cumulative) through to the end of the year. We believe that annual escalation at the end of 2010 thereafter is likely to be in the 3% to 4% range, per annum.

The above project costs incorporate escalation at 4% per annum through to the respective mid-point of construction.

Separate Prices

The Prime Consultant has requested that the following project cost items, excluded from the above summary, be identified separately:

- Rail bascule bridge conversion to pedestrian/cyclist trail \$1,822,000

A breakdown of the estimate is provided in Appendix C

BASIS OF THE ESTIMATE

We have assumed that the work will be tendered competitively in one contract.

In all cases the estimates are based upon our assessment of fair value for the work to be carried out. We define fair value as the amount a prudent contractor, taking into account all aspects of the project, would quote for the work. We expect our estimate to be in the middle of the bid range to ensure that funding for the work remains adequate for the duration of the project.

It should be noted that Advicas Group Consultants Inc. does not have control over the cost of labour, materials, or equipment, over the Contractor's methods of determining bid prices, or over competitive market conditions. We define competitive conditions in the project as attracting a minimum of four general contractors' bids with a minimum of two sub-trade tenders within each of the sub-trade categories. Accordingly, Advicas Group Consultants Inc. cannot and does not warrant or represent that bids will not vary from the estimate.

Contingency Reserves

Contingency is an allowance specifically identified within our elemental cost analysis to meet unforeseen circumstances, and represents an assessment of the financial risk relating to this project. As detailed design information becomes available, this risk will diminish and the contingency allowances will accordingly reduce.

Design contingency is introduced into the estimated cost at the earliest estimate stage and is a measurement of the amount and detail of the design information available. As the design develops and systems and material selections are fixed, the amount of the contingency allowance is reduced and is absorbed into the measured elements. On completion of contract documents, at tender stage, the allowance is normally reduced to zero.

Our determination of this risk level and the amount of the contingency allowance is the result of many years of cost planning, on over 2,000 construction projects, and of monitoring the increasing design information that occurs during the design phase. The design contingency is not a discretionary cost element.

A combined design and construction contingency allowance has been included to provide for unforeseen items arising during the design and construction phases, as follows:

- Replacement bridge – 15% of construction cost
- Rehabilitation of existing bridge – 25% of construction cost
- Design earthquake 'Critical Bridge' premium cost – 25% of construction cost
- New pedestrian/cyclist bascule bridge – 15% of construction cost
- Resurfacing of the existing bascule bridge sections – 25% of construction cost

No allowance has been made for project contingency, which typically provides for changes in program, scope and other Client requests.

Goods and Services Tax

GST is excluded from the estimate.

Harmonized Sales Tax

HST is excluded from the estimate.

Exclusions

The following additional items are excluded from the capital construction cost:

- City administration costs
- Clerk of Works
- City project manager
- Traffic study costs
- Building permit
- Demolition permit
- Offsite costs associated with rerouting traffic during construction

- Financing costs
- Legal fees
- Project contingency
- GST/HST

Documentation

The estimate is based on the following:

- MMM Group
 - Conceptual Site Plan Layouts, Bridge Sections for Replacement Bridge option Received April 8, 2010
 - Site Plan and Site Profile of Existing Bridge Received April 9, 2010
 - Johnson Street Bridge Powerpoint Presentation document dated April 30, 2010
 - GPC minutes of February 18, 2010 meeting Received May 3, 2010
 - Emails:
 - Specification issues Received May 7, 2010
 - Remedial earthworks
 - Scope of work issues Received May 13, 2010
 - Rail bridge conversion to pedestrian/cyclist trail construction quantities
 - Vehicle bridge deck replacement construction quantities
 - New pedestrian/cyclist bascule bridge construction quantities
 - Civil works
 - Geotechnical data and piles, rock anchor requirement construction quantities
 - Piling rock embedment lengths
 - Deck replacement specification
 - Draft renderings
 - Structural steel sizing
 - Underpinning of trunnion and counterweight piers Received May 17, 2010
 - Selection of existing as-built drawings Received May 19, 2010
 - Seismic steel work to existing bridge Received May 20, 2010
 - 'Critical Bridge' quantities Received May 25, 2010
 - Pedestrian/cyclist bascule bridge quantities Received May 27, 2010
 - Peer Review comments in letter from Beacon Construction Consultants Inc. Received June 4, 2010
- Meetings with MMM Group on April 8, April 30, and May 20, 2010.
- Peer Review meeting on June 1, 2010
- Telephone discussions with MMM Group during the preparation of the estimate.

APPENDIX A

PROJECT COST BREAKDOWN

- REPLACEMENT OF THE EXISTING VEHICULAR AND RAIL BRIDGE

Johnson Street Bridge Replacement
Class "C" Cost Estimate

09-Jun-10

Item	Units	Quantity	Unit Price	Item Cost	Group Cost	Man Hours
CONSTRUCTION						
1. GENERAL						
General Conditions:						
Building permit	Percent	1.25		excl		
Demolition permit	LS	1		excl		
Superintendent	months	22	\$18,000	\$396,000		3872
Assistant Superintendent	months	22	\$12,000	\$264,000		3872
Clerk of works	months	22		by Owner		
On site engineer	months	22	\$20,000	\$440,000		3872
Project manager	months	22	\$15,000	\$330,000		3872
Performance bond	Per \$1,000	60,000	\$7.50	\$450,000		
Labour and material bond	Per \$1,000	60,000	\$6.50	\$390,000		
Builders all risk insurance	Per \$1,000	60,000	\$4.00	\$240,000		
Liability insurance				incl		
Site vehicles (allow 8 vehicles) including gas	months	22	\$9,600	\$211,200		
Site offices/storage (5 no)	months	22	\$3,000	\$66,000		
Project photos	LS	1	\$10,000	\$10,000		
Site telephone, fax, cell phones	months	22	\$2,400	\$52,800		
Temporary power, consumption	months	22	\$1,000	\$22,000		
Temporary water, consumption	months	22	\$600	\$13,200		
Temporary toilets (8 no)	months	22	\$1,800	\$39,600		
Project signage	LS	1	\$7,500	\$7,500		
First aid station, officer and supplies	months	22	\$7,500	\$165,000		3872
Site office supplies	months	22	\$600	\$13,200		
Site security	LS	1	\$150,000	\$150,000		3,000
Small tools rental and purchase	months	22	\$20,000	\$440,000		
Traffic barriers	LS	1	\$10,000	\$10,000		
Flag personnel	months	22	\$7,000	\$154,000		4,400
Water taxi - workers, directing waterway traffic	months	22	\$5,000	\$110,000		\$1,000
Sheet steel piling:						
- counterweight pier	m2	1300	\$500	\$650,000		1,625
- rest pier	m2	300	\$500	\$150,000		375
- west abutment	m2	300	\$500	\$150,000		375
- east abutment	m2	300	\$500	\$150,000		375
Water pumping	LS	1	\$200,000	\$200,000		
Temporary watercourse protection	LS	1	\$250,000	\$250,000		
BC Land surveyor	LS	1	\$25,000	\$25,000		250
Layout of structures	LS	1	\$50,000	\$50,000		500
Hoisting - general hoisting (Small 50 tonne crane)	Hrs	700	\$175	\$122,500		
Courier charges	months	22	\$400	\$8,800		
Project Housekeeping	months	22	\$5,000	\$110,000		3,143
Dump bins/disposal (outside demolition)	No	50	\$600	\$30,000		
Final Cleaning	LS	1	\$10,000	\$10,000		286
Mobilization and Demobilization	LS	1	\$1,000,000	\$1,000,000		3,333
As Builts & Manuals	LS	1	\$10,000	\$10,000		
					\$6,890,800	
2. EXISTING BRIDGE						
Mobilization and Demobilization	LS	1		incl		
Removal of Existing Rail Bridge	LS	1	\$1,000,000	\$1,000,000		4,615
Removal of Existing Road Bridge	LS	1	\$2,000,000	\$2,000,000	\$3,000,000	9,231
3. NEW BRIDGE						
Approach Span Superstructure						
Approach Span Steel, including sidewalk and multi use trail	t	769	\$7,700	\$5,921,300		36,439
Approach Span Deck Concrete	m3	494	\$900	\$444,600		2,052
Approach Span Deck Formwork	m2	2,197	\$400	\$878,800		9,464
Approach Span Deck Reinforcement	t	63	\$3,000	\$189,000		1,018
Barriers	m	330	\$1,000	\$330,000		1,015
Safety Railing	m	185	\$550	\$101,750		470
Approach Slabs	m2	312	\$500	\$156,000	\$8,021,450	720
Superstructure						
Bascule Leaf Floor	t	300	\$9,500	\$2,850,000		20,769
Bascule Leaf Trusses	t	600	\$9,500	\$5,700,000		41,538
Bascule Leaf Wheels	t	600	\$9,500	\$5,700,000		41,538
Bascule Counterweight	t	1,600	\$1,000	\$1,600,000	\$15,850,000	6,154
Piers						
Counterweight Pier Concrete	m3	2,075	\$900	\$1,867,500		8,619
Counterweight Pier Formwork	m2	3,971	\$300	\$1,191,300		12,829
Counterweight Pier Reinforcement	t	415	\$3,000	\$1,245,000		6,704
Counterweight Pier Pile Cap Concrete	m3	1,224	\$900	\$1,101,600		5,084
Counterweight Pier Pile Cap Formwork	m2	212	\$300	\$63,600		685
Counterweight Pier Pile Cap Reinforcement	t	245	\$3,000	\$735,000		3,958
Counterweight Pier Piling (1.8 m drilled shafts):						
- 1200mm diameter steel casing 10 metres long	m	460	\$465	\$213,900		
- Rock socketing	no	46	\$10,000	\$460,000		1,769
- Concrete fill	m3	520	\$900	\$468,000		3,600
- Reinforcement bar	kg	52,000	\$3.00	\$156,000		840
- Rock anchors	no	46	\$10,000	\$460,000		2,123
- Mobilize/demobilize	LS	1	\$200,000	\$200,000		615
- Casing installation	no	46	\$2,500	\$115,000		354
- Cutoffs, pile tips etc	no	46	\$1,000	\$46,000		283
Rest Pier Concrete	m3	780	\$900	\$702,000		3,240
Rest Pier Footing	m3	312	\$900	\$280,800		1,296
Rest Pier Formwork	m2	840	\$500	\$420,000		4,523
Rest Pier Reinforcement	t	187	\$3,000	\$561,000		3,024
Rest Pier Pile Cap Reinforcement	t	62	\$3,000	\$187,200		1,008
Access trestle (clarification required)	Each	2	\$100,000	\$200,000	\$10,674,500	1,538
Abutments						
West Footing Concrete	m3	416	\$900	\$374,400		1,728
West Abutment Concrete	m3	78	\$900	\$70,200		324
West Wingwall/Retaining Wall Concrete	m3	102	\$900	\$91,800		424
West Abutment Formwork	m2	724	\$300	\$217,200		2,339
West Abutment Reinforcement	t	119	\$3,000	\$357,000		1,926
East Footing Concrete	m3	416	\$900	\$374,400		1,728
East Abutment Concrete	m3	78	\$900	\$70,200		324
East Wingwall/Retaining Wall Concrete	m3	102	\$900	\$91,800		424
East Abutment Formwork	m2	724	\$300	\$217,200		2,339
East Abutment Reinforcement	t	119	\$3,000	\$357,000		1,926
Piling	m	320	\$2,000	\$640,000	\$2,862,400	4,740
Other						
Mechanical	LS	1	\$3,115,000	\$3,115,000		
Electrical	LS	1	\$1,335,000	\$1,335,000		
Bearings	LS	1	\$75,650	\$75,650		
Platforms, Ladders, Doors, Joints, Misc.	LS	1	\$267,000	\$267,000		
Gates and Controls	LS	1	\$178,000	\$178,000		
Lighting and Cabling	LS	1	\$178,000	\$178,000		
Pins and Shafts	LS	1	\$445,000	\$445,000		
Control Room	LS	1	\$222,500	\$222,500	\$5,816,150	7,755

APPENDIX B

PROJECT COST BREAKDOWN

- REHABILITATION OF THE EXISTING VEHICULAR AND RAIL BRIDGE
- DESIGN EARTHQUAKE 'CRITICAL BRIDGE' PREMIUM COST
- NEW PEDESTRIAN/CYCLIST BASCULE BRIDGE
- VEHICULAR BRIDGE DECK REPLACEMENT

Johnson Street Bridge Rehabilitation						09-Jun-10
Class "C" Cost Estimate						
Existing Vehicle and Rail Bridges						
Item	Units	Quantity	Unit Price	Item Cost	Group Cost	Man hours
CONSTRUCTION						
1. GENERAL						
General Conditions:						
Building permit	Percent	1.25		excl		
Demolition permit				Not required		
Superintendent	months	36	\$18,000	\$648,000		6336
Assistant Superintendent	months	36	\$12,000	\$432,000		6336
Clerk of works	months	36		by Owner		
On site engineer	months	24	\$20,000	\$480,000		4224
Project manager	months	30	\$15,000	\$450,000		5280
Performance bond	Per \$1,000	45,000	\$7.50	\$337,500		
Labour and material bond	Per \$1,000	45,000	\$6.50	\$292,500		
Builders all risk insurance	Per \$1,000	45,000	\$4.00	\$180,000		
Liability insurance				incl		
Site vehicles (allow 6 vehicles) including gas	months	36	\$7,200	\$259,200		
Site offices/storage (5 no)	months	36	\$3,000	\$108,000		
Project photos	LS	1	\$10,000	\$10,000		
Site telephone, fax, cell phones	months	36	\$2,400	\$86,400		
Temporary power, consumption	months	36	\$1,000	\$36,000		
Temporary water, consumption	months	36	\$600	\$21,600		
Temporary toilets (8 no)	months	36	\$1,800	\$64,800		
Project signage	LS	1	\$7,500	\$7,500		
First aid station, officer and supplies	months	36	\$7,500	\$270,000		6336
Site office supplies	months	36	\$600	\$21,600		
Site security	LS	1	\$250,000	\$250,000		5,000
Small tools rental and purchase	months	36	\$20,000	\$720,000		
Traffic barriers	LS	1	\$10,000	\$10,000		
Flag personnel	months	36	\$7,000	\$252,000		7,200
Water taxi - workers, directing waterway traffic	months	36	\$5,000	\$180,000		1,000
Sheet steel piling:						
- counterweight pier	m2	2800	\$500	\$1,400,000		3,500
Water pumping	LS	1	\$150,000	\$150,000		
Temporary watercourse protection	LS	1	\$250,000	\$250,000		
BC Land surveyor	LS	1	\$15,000	\$15,000		150
Layout of structures	LS	1	\$10,000	\$10,000		100
Hoisting - general hoisting (Small 50 tonne crane)	Hrs	1000	\$175	\$175,000		
Courier charges	months	36	\$400	\$14,400		
Project Housekeeping	months	36	\$5,000	\$180,000		5,143
Dump bins/disposal (outside demolition)	No	80	\$600	\$48,000		
Final Cleaning	LS	1	\$10,000	\$10,000		286
Mobilization and Demobilization	LS	1	\$800,000	\$800,000		2,667
As Builts & Manuals	LS	1	\$10,000	\$10,000	\$8,179,500	
2. EXISTING BRIDGE						
Vehicle Bridge Superstructure						
Replacement steel	LS	1	\$750,000	\$750,000		5,000
Painting	LS	1	\$3,000,000	\$3,000,000		32,308
Scaffolding and Shroud/Hoarding (included in painting cost)				incl		
Seismic upgrade steel	t	140	\$13,500	\$1,890,000	\$5,640,000	12,600
Rail Bridge Superstructure						
Replacement steel	LS	1	\$250,000	\$250,000		1,667
Painting	LS	1	\$2,000,000	\$2,000,000		21,538
Scaffolding and Shroud/Hoarding (included in painting cost)				incl		
Seismic upgrade steel	t			incl above	\$2,250,000	
Vehicle and Rail Bridge Substructure						
2400mm diameter drilled piles -						
Mobilize/demobilize	LS	1	\$250,000	\$250,000		769
Steel casing	m	178	\$2,650	\$471,700		
Rock sockets including casing placement	m	56	\$28,500	\$1,596,000		4,911
Drill and clean out overburden	m	122		incl		
Concrete fill	m3	830	\$900	\$747,000		5,746
Reinforcement bar	kg	146,870	\$3.00	\$440,610		2,373
1800 mm diameter concrete columns -						
Concrete	m3	210	\$900	\$189,000		1,454
Formwork casing	m	104	\$500	\$52,000		320
Reinforcement bar	kg	79,230	\$3.00	\$237,690		1,280
Concrete cap beams -						
Concrete	m3	1,850	\$900	\$1,665,000		12,808
Formwork	m2	1,000	\$400	\$400,000		4,308
Reinforcement bar	kg	218,900	\$3.00	\$656,700		3,536
Post-Tensioned bar including coring existing	kg	4,790	\$15	\$71,850		387
Rock anchors to rest pier	m	645	\$1,060	\$683,700	\$7,461,250	2,104
Abutments						
Rock anchors to east abutment	m	336	\$1,060	\$356,160		1,096
Rock anchors to west abutment	m	240	\$1,060	\$254,400	\$610,560	783
Mechanical and Electrical						
Span Drive (no racks)	EA	2	\$ 979,000	\$ 1,958,000		
Rack, bogey wheel assembly and pin connection	EA	2	\$ 356,000	\$ 712,000		
Jack CWT	EA	2	\$ 1,335,000	\$ 2,670,000		
Jack Span	EA	2	\$ 356,000	\$ 712,000		
CWT Trunnion Brgs	EA	2	\$ 890,000	\$ 1,780,000		
Heel Trunnion Brgs	EA	2	\$ 356,000	\$ 712,000		
Link Pins and Bearings	EA	2	\$ 445,000	\$ 890,000		
Field Machining	EA	16	\$ 13,350	\$ 213,600		
Span Lock Machinery	EA	2	\$ 222,500	\$ 445,000		
Live Load Shoe Adjustment	EA	2	\$ 35,600	\$ 71,200		
Balance Bascule Leaves	EA	2	\$ 111,250	\$ 222,500		
Replace Electrical	EA	2	\$ 979,000	\$ 1,958,000	\$ 12,344,300	16,459
Sub total					\$36,485,610	185,002
Design/Construction Contingency	Percent	25			\$9,121,403	46,251
TOTAL CONSTRUCTION COST					\$45,607,013	231,253
ENGINEERING AND PROJECT MANAGEMENT						
Concept Development and Architecture						
Structural Engineering and Design						
Bascule Bridge Structure						
Electrical/Mechanical						
Substructures, Foundations and Seismic Design						
Approach Structures						
Walls and Pedestrian Bridge						

Early Works							
Roadway and Drainage Design							
Electrical/Illumination/Traffic Lights							
Hydrotechnical/Scour Protection							
Landscape Architecture							
Project Management							
Services During Construction							
Shop Drawing Review							
Disbursements							
TOTAL ENGINEERING AND DESIGN			20%			\$9,121,403	89,214
OTHER COSTS							
VIA Rail Station Relocation and Reconstruction	LS	1		\$500,000	\$500,000		
Temporary VIA Rail Station	LS	1		\$100,000	\$100,000		
Construction of Parking for VIA Station	LS	1			incl		
City Project Costs	LS	1			excl		
Public Art 1% of Construction Cost	LS	1.0%			\$456,070	\$1,056,070	4,062
CURRENT TOTAL PROJECT COST (MAY, 2010)						\$55,784,485	324,529
Escalation to mid point of construction - June 2013 (4% per annum)	percent	12.33			\$6,878,227	\$6,878,227	
FUTURE TOTAL PROJECT COST						\$62,662,712	324,529

Johnson Street Bridge Rehabilitation						
Class "C" Cost Estimate						09-Jun-10
Design Earthquake 'Critical Bridge' Premium Cost						
Item	Units	Quantity	Unit Price	Item Cost	Group Cost	Man Hours
1. BRIDGE						
Superstructure:						
Seismic upgrade steel - additional tonnage	t	30	\$13,500	\$405,000		
Replacement steel - increase cash allowance provision	LS	1	\$1,000,000	\$1,000,000		
Substructure:						
2700mm diameter drilled piles in lieu of 2400mm diameter drilled piles:						
Mobilize/demobilize	LS	1		\$0		
Steel casing	m	178	\$300	\$53,400		
Rock sockets including casing placement	m	56	\$1,500	\$84,000		
Drill and clean out overburden	m	122		Incl		
Concrete fill	m3	220	\$900	\$198,000		
Reinforcement bar	kg	223,420	\$3.00	\$670,260		
2100 mm diameter concrete columns in lieu of 1800mm diameter concrete columns:						
Concrete	m3	80	\$900	\$72,000		
Formwork casing	m	104	\$50	\$5,200		
Reinforcement bar	kg	85,250	\$3.00	\$255,750		
Drilled piles support and cap beam to Rest Pier in lieu of rock anchors - allowance	LS	1	\$1,300,000	\$1,300,000		
Drilled piles support and cap beam to Abutments in lieu of rock anchors - allowance	LS	2	\$700,000	\$1,400,000	\$5,443,610	
Sub total					\$5,443,610	
Design/Construction Contingency	25%				\$1,360,903	
TOTAL CONSTRUCTION COST					\$6,804,513	
TOTAL ENGINEERING AND DESIGN		12%			\$816,542	
CURRENT TOTAL PROJECT COST (MAY, 2010)					\$7,621,054	
Escalation to mid point of construction - June 2013 (4% per annum)	percent	12.33		\$939,676	\$939,676	
FUTURE TOTAL PROJECT COST					\$8,560,730	

Johnson Street Bridge Rehabilitation											
Class "C" Cost Estimate											09-Jun-10
Pedestrian/Cyclist Bascule Bridge (single 46m approach spans to each side)											
Item	Units	Quantity	Unit Price	Item Cost	Group Cost	Man Hours					
1. GENERAL											
General conditions				\$600,000		4500					
Sheet steel piling:											
- Counterweight pier	m2	950	\$500.00	\$475,000		1,188					
- Rest pier	m2	300	\$500.00	\$150,000		375					
- East abutment	m2	300	\$500.00	\$150,000		375					
Water pumping	LS	1	\$150,000.00	\$150,000	\$1,525,000						
2. NEW BRIDGE											
Pedestrian/Cyclist Bridge Superstructure											
Structural steel including painting	kg	324100	\$10	\$3,241,000		19,945					
Fibregrate decking	m2	730	\$800	\$584,000		898					
Cyclist railing	m	400	\$500	\$200,000	\$4,025,000	923					
Pedestrian/Cyclist Bridge Substructure											
Concrete pile caps	m3	942	\$900	\$847,800		3,913					
Formwork	m2	1800	\$500	\$900,000		9,692					
Reinforcement bar	kg	113800	\$3.00	\$341,400		1,838					
Pier Piling (900mm drilled shafts):											
- 900mm diameter steel casing	m	120	\$350.00	\$42,000							
- Rock socketing	m	52	\$5,000.00	\$260,000		1,000					
- Concrete fill	m3	109	\$900.00	\$98,492		758					
- Reinforcement bar	kg	10944	\$3.00	\$32,831		177					
- Casing installation	no	10	\$10,000.00	\$100,000		308					
- Cutoffs, pile tips etc	no	10	\$1,000.00	\$10,000		62					
900 mm diameter concrete columns -											
Concrete	m3	38	\$900	\$34,200		263					
Formwork casing	m	60	\$500	\$30,000		185					
Reinforcement bar	kg	3,800	\$3.00	\$11,400		61					
MSE wall	m2	230	\$400.00	\$92,000		212					
Embankment fill	m3	1,790	\$70.00	\$125,300	\$2,925,423	193					
Mechanical and Electrical											
Span drive	LS	1	\$712,000.00	\$712,000							
Trunnion bearings and trunnions	LS	1	\$623,000.00	\$623,000							
Span lock machinery	LS	1	\$178,000.00	\$178,000							
Live load shoe/adjustment	LS	1	\$35,600.00	\$35,600							
Balance bascule leaf	LS	1	\$111,250.00	\$111,250							
Electrical	LS	1	\$979,000.00	\$979,000	\$2,638,850	3,518					
3. ROADS AND CIVIL WORKS											
Shore Rip-rap	LS	1	\$178,000	\$178,000							
Rail track Remove and Reconstruct	m	320	\$1,335	\$427,200							
East Side Roadworks	lane m	700	\$890	\$623,000							
West Side Roadworks	lane m	360	\$890	\$320,400							
3 Traffic Signals	EA	3	\$111,250	\$333,750							
Concrete Barriers	m	100	\$182	\$18,245							
Telus Ductbank Protection/Relocation	LS	1	\$1,335,000	\$1,335,000							
Galloping Goose Trail (5m Wide)	m	470	\$668	\$313,725							
E&N Trail Bridge at Esquimalt and Harbour	LS	1	\$445,000	\$445,000							
Landscaping	ha.	4	\$133,500	\$534,000							
Retaining Walls	m2	450	\$668	\$300,375							
Compensation	LS	1	\$89,000	\$89,000							
Contaminated Soil Removal	LS	1	\$1,279,400	\$1,279,400	\$6,197,095	23,835					
Sub total					\$17,311,368	74,218					
Design/Construction Contingency	15%				\$2,596,705	11,133					
TOTAL CONSTRUCTION COST					\$19,908,073	85,351					
TOTAL ENGINEERING AND DESIGN			12%		\$2,388,969	23,640					
CURRENT TOTAL PROJECT COST (MAY, 2010)					\$22,297,042	108,991					
Escalation to mid point of construction - June 2013 (4% per annum)	percent	12.33		\$2,749,225	\$2,749,225						
FUTURE TOTAL PROJECT COST					\$25,046,267	108,991					

Johnson Street Bridge Rehabilitation												
Class "C" Cost Estimate												09-Jun-10
SEPARATE PRICE: Highway Bascule Bridge Steel Grid Deck Replacement												
Item	Units	Quantity	Unit Price	Item Cost	Group Cost	Man Hours						
1. GENERAL												
General conditions				\$100,000								
					100000	483						
2. DEMOLITION												
6" x 6" concrete curb and gutter	m	89	\$30	\$2,670								
Open steel riveted grating	m2	415	\$100	\$41,500								
Steel channel joists	m	865	\$50	\$43,250	\$87,420	807						
3. NEW WORK												
6" x 6" concrete curb and gutter	m	89	\$100	\$8,900		41						
Open steel riveted grating	m2	415	\$800	\$332,000		511						
C310 x 45 steel channel joists	m	688	\$450	\$309,600		1,651						
Rebalance bascule leaf	LS	1	\$50,000	\$50,000	\$700,500	533						
Sub total					\$887,920	4,026						
Design/Construction Contingency	25%				\$221,980	1,007						
TOTAL CONSTRUCTION COST					\$1,109,900	5,033						
TOTAL ENGINEERING AND DESIGN							12%		\$133,188	1,232		
CURRENT TOTAL PROJECT COST (MAY, 2010)					\$1,243,088	6,265						
Escalation to mid point of construction - June 2013 (4% per annum)	percent	12.33		\$153,273	\$153,273							
FUTURE TOTAL PROJECT COST					\$1,396,361	6,265						

APPENDIX C

- RAIL BASCULE BRIDGE CONVERSION TO PEDESTRIAN/CYCLIST TRAIL

