

COPALIS ROCKS MUTUAL BENEFIT ASSOCIATION

September 14, 2010

CG Engineering
250 4th Avenue S, Suite 200
Edmonds, WA 98020
chevy@copalisrockswater.org

Attn: **Mr. Chevy Chase, *Secretary/Treasurer***

Subject: **Cost estimate for geotechnical investigation and slope evaluation**

Dear Chevy,

We understand that a segment of the asphalt surface of Copalis Rock Lane is failing, which at this point appears to be a result of inadequate support provided by the fill on which the road is constructed. We recommend a geotechnical investigation of the area where the road is failing, and the vicinity. Our findings from the proposed investigation will be presented in report format. The report will also present the options available for addressing the pavement failure; however, this work does not include any design work.

Presented below is the scope of work; Table 1 presents the estimated cost breakdown for performing this work.

SCOPE OF WORK

1. Site reconnaissance (conducted on August 23, 2010)
2. Preliminary research
3. Preliminary site visit to collect necessary site data for planning the geotechnical investigation
4. Drill a minimum of three test holes using a mechanical hand auger; Test Hole (TH) 1 close to the site of the failing pavement surface, TH#2 on the slope face in the vicinity of the TH#1 (if possible); TH#3 at an appropriate location at the toe of the fill slope supporting the road; collect adequate soil samples and select representative soil sample(s) for laboratory evaluation
5. Prepare soil samples for shipping to lab (*Materials Testing & Consulting Inc., Olympia*)
6. Perform the following laboratory tests:
 - a) *Natural Moisture Content Test*
 - b) *Soil Classification Test*; if coarse-grained soils such as sandy or gravelly soils are encountered, only gradation test will be necessary, but if fine-grained soils such as silty or clayey soils are encountered hydrometer test may be necessary to classify the representative fill slope soil(s)
 - c) *Direct Shear Test* to determine the strength properties of the representative fill slope soil(s)

- d) Proctor compaction test to determine the maximum dry density and optimum moisture content of the representative fill slope soil. These two parameters are necessary for determining the degree to which the fill slope soil must be compacted for adequate support for the road. If soil classification test(s) show that the fill soil is unsuitable, Proctor test will be conducted on a suitable fill material.
7. Review site topographic information collected from the survey
8. Evaluate stability of existing fill slope
9. Review by Professional Engineer
10. Meeting with the representative of Copalis Rocks Mutual Benefit Association to discuss findings from the investigation and, if necessary, any changes in scope of work or future/additional work
11. Final review by PE

The total estimated cost for the scope of work presented in this proposal is **\$ 6,860.00**.

BSA:	\$ 5,685.00
Others:	\$ 1,175.00

Cost breakdown is presented in Table 1. Our services will be performed on a time and materials basis in accordance with our schedule of engineering and surveying rates which is attached and form part of this proposal. Any changes or modifications, unforeseen or requested, to the scope of work presented in this proposal will be treated as an addition to the scope of work and charged as appropriate. Changes to the scope of work will be duly communicated in advance to the representative of *Copalis Rocks Mutual Benefits Association*.

We trust the services outlined in this proposal will meet your current requirements; however, the scope of services and fee may be adjusted to satisfy your needs. Please contact us at your convenience if you would like to discuss the scope of services and fee. If this proposal is satisfactory, we will send you a **CONTRACT FOR SERVICES**. A signed, complete copy of **CONTRACT FOR SERVICES** returned to us will serve as formal authorization for **Berglund, Schmidt & Associates, Inc.** to proceed with the work presented in this proposal.

We appreciate the opportunity to submit this proposal. Please call us if you have any questions or require further information.

Respectfully submitted,



Hari Sharma, P.E.

Table 1 Cost breakdown for geotechnical investigation

ITEM	TASK	RESOURCE	UNIT	QTY	RATE	AMOUNT
1	Site reconnaissance	GE	Hours	1.0	80.00	80.00
2	Preliminary research					
a		GE	Hours	3.0	80.00	240.00
b		PE	Hours	2.0	115.00	230.00
3	Preliminary site visit	GE	Hours	3.0	80.00	240.00
4	Test holes & soil sampling					
a	Hand auger rental (Harbor Tool Rental, Aberdeen, WA)	-	LS	-	60.00	60.00
b		GE	Hours	8.0	80.00	640.00
c		ST2	Hours	8.0	65.00	520.00
5	Soil samples handling					
	Representative sample(s) selection	GE	Hours	1.5	80.00	120.00
	Shipping costs (UPX, Aberdeen, WA)	-	LS	-	-	100.00
6	Laboratory tests (Materials Testing & Consulting Inc., Olympia, WA)					
a	Natural moisture content	-	LS	1	25.00	25.00
b	Combined Gradation	-	LS	1	100.00	100.00
	& (or) Hydrometer	-	LS	1	175.00	175.00
	& Atterberg's limits (1-Point)	-	LS	1	60.00	60.00
c	Direct Shear Test (3-Points)	-	LS	1	420.00	420.00
d	Proctor Compaction test	-	LS	1	235.00	235.00
7	Review lab test results & site topography	GE	Hours	5.0	80.00	400.00
8	Evaluate fill slope stability	GE	Hours	12.0	80.0	960.00
9	Review					
a		PE	Hours	8.0	115.00	920.00
b	Review with PE	GE	Hours	3.0	80.00	240.00
10	Client Meeting					
a		PE	Hours	2.0	115.00	230.00
b		GE	Hours	2.0	80.00	160.00
11	Final review	PE	Hours	1.0	115.00	115.00
12	Reimbursable *	-	LS	-		150.00
13	Communications	GE	Hours	4.0	80.00	320.00
14	Project closure	GE	Hours	1.5	80.00	120.00
TOTAL						\$6,860.00

*Estimated; LS – Lump Sum

Note: Item #6 will be a separate contract with (MTC) *Materials Testing & Consulting Inc.*, Olympia and *Copalis Rocks Lane Mutual Benefits Association*. Any payments made towards their services shall be paid directly to MTC.

IMPORTANT

- All additional reimbursable items other than standard submittals mentioned in the table(s) above will be charged on a time & materials bases per our recent RATE SCHEDULE
- All shipping and mailing charges, if not included in the cost breakdown, will be additional costs; if cost is included in the cost breakdown it should be considered as approximate and actual costs may vary
- Mileage will be charged as accrued; we do not accept responsibility for any road delays due to unforeseen and inclement weather conditions

RESOURCES LIST

SURVEY		CAD & ADMINISTRATION		ENGINEERING	
PS	Principal Surveyor	CP	CAD Operator	PE	Principal Engineer
AS	Associate Surveyor 1	SC	Senior CAD Operator	AE	Associate Engineer
1					
SS	Senior Surveyor	OM	Secretarial/Clerical	GE	Geotechnical & Trans. Engineer
LT	L. S. I. T.			DE	Design Engineer
ST1	Survey Technician 1			ER	Engineering Designer
ST2	Survey Technician 2			ET	Engineer-in-Training
ST3	Survey Technician 3			CT	Civil Engineering Technician
ST4	Survey Technician 4			IC	Construction Inspector
FT1	Field Survey Technician 1				
FT2	Field Survey Technician 2				
FC	Field Crew				

SCHEDULE OF ENGINEERING & SURVEYING RATES

(APRIL 29, 2010)

Principal Surveyor	<i>PS</i>	\$100.00
Associate Surveyor 1	<i>AS1</i>	\$85.00
Senior Surveyor	<i>SS</i>	\$95.00
L. S. I. T.	<i>LT</i>	\$70.00
Survey Technician 1	<i>ST1</i>	\$75.00
Survey Technician 2	<i>ST2</i>	\$65.00
Survey Technician 3	<i>ST3</i>	\$45.00
Survey Technician 4	<i>ST4</i>	\$25.00
Field Survey Technician 1	<i>FT1</i>	\$60.00
Field Survey Technician 2	<i>FT2</i>	\$45.00
Field Crew	<i>FC</i>	
1-Man w/equipment & vehicle	<i>FC1</i>	\$75.00
2-Man Field Crew	<i>FC2</i>	\$130.00
3-Man Field Crew	<i>FC3</i>	\$145.00
1-Man G.P.S.	<i>FC1G</i>	\$125.00
1-Man Robotic	<i>FC1R</i>	\$125.00
2-Man G.P.S. Crew	<i>FC2R</i>	\$175.00
CAD Operator	<i>CP</i>	\$50.00
Senior CAD Operator	<i>SC</i>	\$70.00
Principal Engineer	<i>PE</i>	\$115.00
Associate Engineer	<i>AE</i>	\$100.00
Civil Engineering Technician	<i>CT</i>	\$65.00
Engineer-in-Training	<i>ET</i>	\$80.00
Geotechnical & Transportation Engineer	<i>GE</i>	\$80.00
Design Engineer	<i>DE</i>	\$80.00
Engineering Designer	<i>ER</i>	\$70.00
Construction Inspector	<i>IC</i>	\$80.00
Secretarial/Clerical	<i>OM</i>	\$45.00

Itemized Reimbursable Cost

Copies	
8.5" x 11"	\$0.15
11" x 17"	\$1.50
18" x 24" Mylar	\$7.00
18" x 24" Vellum	\$5.00
18" x 24" Bond	\$5.00
22" x 34" Vellum	\$7.00
22" x 34" Bond	\$7.00
24" x 36" Vellum	\$9.00
24" x 36" Bond	\$9.00
30" x 42"	\$9.00
30" x 42"	\$9.00
Binder and Material – Retail cost plus 15-percent	
Postage at cost	
Postage and Mailing Supplies – Retail cost plus 15-percent	
GSA – Domestic Per Diem rates for out of town work	

Overtime rates are one and one-half (1½) times the applicable straight-time rate will be billed for any work performed outside the straight time operational parameters; for work in excess of eight (8) hours per day; for night work, and on Saturday. Sundays and legal holidays will be charged at two (2) times the regular rate.