

## **Crib Sheet on Government Paving Program**

### **Actual 2012 Costs – Chip Seal**

Labour including Supervision	\$642,766.53
Overtime	\$32,260.42
Benefits	\$40,789.44
Total:	\$715,816.39

Reference: CTF FOIPOP Chip Seal Program

### **Business Plan Costs – Chip Seal**

Sub total salaries	\$380,087
Overtime	\$76,775
Benefits	\$152,035
Total:	\$608,897

Reference: Provincial Chip Seal Operation Business Plan p. 24 Appendix A  
(overtime numbers can be found on page 26 Appendix B column 3)

### **Actual 2012 Costs – Asphalt**

Labour including supervision:	\$855,222.94
Overtime	\$51,143.18
Benefits	\$49,782.23
Total:	\$956,148.35

Reference: Asphalt – Cost Centre

### **Business Plan Costs – Asphalt**

Salary	\$482,492
Overtime	\$96,498
Benefits	\$192,997
Total:	\$771,987

Reference: CTF FOIPOP

## **Total Amount of Work Performed**

### **Actual**

Chip seal: 173km (Halifax Chronicle Herald, Dec 12, 2012)

Asphalt: 53.8 (CTF FOIPOP)

### **Business Plan**

Chip seal: 366km (Provincial Chip Seal Operation Appendix "B")

Asphalt: 90km (Provincial Asphalt Plan Operation page p. 4 says 90-125km, CTF used 90km in all calculations)

## **Cost Per Kilometer**

Actual:  $\$715,816.39$  (chip seal) +  $\$956,148.35$  (asphalt) / 173km (chip seal) + 53.8km (asphalt) =  $\$7,371.97$

Budgeted:  $\$608,897$  (chip seal) +  $\$771,987$  (asphalt) / 366km (chip seal) + 90km (asphalt) =  $\$3,028.25$

CTF FOL POP

**CHIP SEAL Program 2012**  
*Actuals from April 1 to Jan 30, 2012*

**Chipseal Production Costs**

Costs elements	\$641,786.63
Labour including Supervision	\$12,266.82
Overtime	\$40,789.44
Benefits	\$171,457.72
Travel and Accommodations	\$12,653.59
Professional and Consulting Services	\$660,202.29
Equipment Costs and Fleet Maintenance Repairs	\$3,394,653.23
Materials	\$17,394.75
Other contracts	\$52,276.63
Supplies and Services	\$63,176.23
Fuel	\$95,547.57
Chip Seal Stock	\$21,956.72
Diesel Fuel	\$28,266.14
Greoline and Lubricants	\$68,668.06
Miscellaneous Other	\$34,522.67
Amortisation	
<b>TOTAL CHIP SEAL COSTS</b>	<b>\$5,174,642.39</b>

		Square Meters Paved	\$ per Sq. Meter
Single Chip Seal Cost	\$3,209,580.13	851,410.00	\$4.50
Double Chip Seal Cost	\$2,264,862.26	305,740.00	\$6.19
<b>Total</b>	<b>\$5,174,442.39</b>	<b>1,157,150.00</b>	

Above is total for chip seal all projects carried out TIR Crews during 2012.  
 Costs are transferred to individual jobs provided on the number of square metres.

**Total Cost all TIR projects**

Chip Seal/Pre Seal Applications	\$6,134,442.39
Gravel and Prep work on Double Chip Projects	\$759,064.15
Crack Seal and prep work on Single Chip Projects	\$383,031.94
	\$7,276,538.48

**Double Chip - Gravel and Prepwork Costs**

Roadname	Total Cost
BOYDVIEW ROAD	\$108,955.57
BERRILL BROOK RD	\$5,594.40
CENTRAL CARIBOU	\$112,808.39
CLOVERVALE RD	\$14,523.78
DIVISION RD	\$110,377.20
LINACRY RD	\$11,740.82
PITCHERS FARM	\$30,911.66
SHORE RD	\$143,690.95
CARIBOU ISLAND	\$218,468.45
<b>Total</b>	<b>\$759,064.15</b>

**Single Chip - Crack Seal and Prepwork Costs**

Additional preparatory work including  
 contracted cracksealing for all paved roads  
 prior to single chip seal applications. **\$383,031.94**

Appendix "A"

Chip Seal Equipment Required

Equipment	Quantity	Capital Cost	Hourly Rate Each	Hourly Rate Total
Distributor Trucks	2	\$500,000.00	\$65.00	\$130.00
Chip Spreader	1	\$250,000.00	\$73.00	\$73.00
Roller	2	\$250,000.00	\$40.00	\$80.00
Loader	1	\$250,000.00	\$76.75	\$76.75
Broom	1	\$100,000.00	\$25.00	\$25.00
Tandems (Use AM's)	8	\$0.00	\$70.00	\$560.00
Grader	1	\$0.00	\$69.00	\$69.00
Floats (tractor/trailer)	3	\$750,000.00	\$65.00	\$195.00
Signing 3/4 tonne	1	\$50,000.00	\$22.00	\$22.00
2 - 1/2 tonnes	2	\$50,000.00	\$17.00	\$34.00
Portable Emulsion Storage	1	\$250,000.00	\$74.00	\$74.00
Office trailer	1	\$125,000.00	\$37.00	\$37.00
<b>Total Capital</b>		<b>\$2,575,000.00</b>		<b>\$1,375.75</b>

Chip Seal Crew Employees

Position	Number	Hr Rate Each	Cost / Year
Civil Tech (QA/QC)		\$24.48	\$50,000
Superintendent		\$28.36	\$57,800
Secretary / Eng Aide		\$21.73	\$44,300
Spreader - 2 operators		\$18.48	\$19,961
Distributor(2) - 2 operators		\$17.98	\$19,421
Rollers (2) - 2 operators		\$18.48	\$19,961
Loader		\$18.48	\$9,980
Broom - 1 operator		\$18.48	\$9,980
Tandems		\$18.48	\$79,844
Trailers(3) - 3 operators		\$18.48	\$29,941
3 operators/crewmen		\$17.85	\$28,917
1 op/cr walking behind distributor		\$18.48	\$9,980
Subtotal			\$380,087
40% Benefits			\$152,035
<b>Total Salaries</b>			<b>\$532,121.99</b>

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 5/17/10 (b)(3)(c)  
 Financial Management  
 Presentation 2/15/10

Appendix B

Appendix B		Budget Available Scenarios		
Cost Analysis TIR		\$4,000,000	\$6,000,000	\$8,000,000
Operation				
Target KM		147	257	466
Target KIM - SC		125	13	114
Target KIM - DC		22	38	55
Target m2 - SC		876,939	1,537,550	2,179,270
Target m2 - DC		154,593	269,589	384,577
KM/day - SC		10	10	10
KM/Day - DC		4	4	4
Days Work - SC		13	22	31
Days Work - DC		6	10	14
Rain/down Days		42	42	42
Total Days		60	60	60
Rates For TIR Crew		Cost Develop	Cost Develop	Cost Develop
Equipment (/hr) SC		22,191	300,238	428,404
DC		5,958	132,458	188,958
Labour (/hr) SC		66,974	116,095	165,615
DC		21,374	51,218	73,066
Labour (FY - Fixed) SC		180,999	180,999	180,999
DC		31,941	31,941	31,941
Materials (/m2) - SC		4,901,072	3,315,152	4,729,233
Materials (/m2) - DC		728,124	1,255,363	1,791,552
Lodging (8 HC/day) SC		18,322	31,950	45,578
DC		8,683	14,695	20,108
Overtime - SC		42,087	50,505	58,924
Overtime - DC		10,423	14,137	17,851
Downtime (Eq/Lr) SC		515,430	350,650	185,869
DC		227,396	154,898	82,001
Total SC		2,846,655	345,589	5,794,523
Cost / m2		3.33	2.34	2.66
Total DC		1,103,345	1,654,411	2,205,477
Cost/m2		7.14	6.34	5.73
Total Cost		4,000,000	6,000,000	8,000,000
weighted Cost/m2		3.88	3.34	3.12

Overtime #

\* A \$10 million dollar scenario was not possible under this assessment as the length of the Nova Scotia Construction season precludes having any additional construction days available to increase the program size.

CTF FOL REP

**ASPHALT - COST CENTRE**

Actuals from April 1 2012 to February 5, 2013

Cost elements

Labour including Supervision	\$855,222.94
Overtime	\$51,143.18
Benefits	\$49,782.23
Travel and Accommodations	\$189,293.87
Professional and Consulting Services	\$220,298.56
Equipment Costs and Fleet Maintenance Repairs	\$1,344,778.23
Materials	\$3,301,839.53
Other Contracts	\$95,613.68
Supplies and Services	\$67,933.42
Fuel	\$72,888.91
#2 Heating Oil	\$341,934.92
Diesel	\$37,302.76
Gasoline and Lubricants	\$23,871.89
Miscellaneous Other	\$88,568.92
Amortization	\$811,396.13
<b>TOTAL</b>	<b>\$7,441,870.15</b>

Asphalt Production Costs

Total Asphalt Paving Costs including Shouldering	\$7,441,870.15	Kilometres Paved	53.80	\$ per Kilometre	\$138,324.72
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ASPHALT PLANT COSTS

Capital costs to purchase asphalt plant & paving equipment

9/Jun/10

45

8,000,000

Operational Costs Staff	Classification	Cost/Year*	Portion of Year	Cost, \$	Total \$ lost
Manager	MCP 23	85,000			
Superintendent	TE 27	57,800	1	---	
Elec Tech/Plant Op	TE 22	54,000	1	57,800	
Plant Operator	TE 22	54,000	1	54,000	
Loader Operator	18.12	42,400	1	54,000	
Plant Labourer	17.63	41,254	0.5	21,200	
Spreader Operator	19.40	45,396	0.5	20,627	
2 Rakers	17.63	41,254	0.5	22,698	
1 Shovel	17.63	41,254	0.5 (2)	41,254	
3 Roller Operators	18.12	42,400	0.5	20,627	
Road Laborer	17.63	41,254	0.5 (3)	63,600	
Mobile Mechanic	23.36	54,662	0.5	20,627	
Distributor Operator	18.12	42,400	0.5	27,331	
3 Traffic Control	16.39	38,352	0.5	21,200	
				57,528	
				<u>Salary</u>	
				482,492	
				Overtime (20%)	
				96,498	
				Benefits (salary x 40%)	
				192,997	
				<u>Total Salary &amp; Benefits</u>	
				771,987	

771,987.20

Assumptions - Operating Costs

Hours:

\*CUPE staff assume 9 hour regular when plant not operating plus 2 hours at 1.5 per day when plant operating  
1 May - 31 Oct = 26 weeks

Month of May will be preparing plant for operation = 20 days x 9 h = 180 h

1 June - 31 Oct - paving season, assume will lose 1 day per week due to bad weather and break downs equals 88 paving days x 12 h/day = 1056 h + 22 days x 9 h = 198 h for Total hours = 1254

1 May - 31 Oct = 1434 h

Lodging:

CUPE plus NSGEU staff  $5.17(1)(b)(c)(d)$  1188\*

staff at \$66/day = \$1188,00

\$1188.00 \* 22 days/month \* 6 months = \$156,816.00

Lodging 156,816

156,816.00

Paving Equipment:

1 Tack Distributor	\$65/h x 400 h	26,000
3 Rollers	\$40/h x 3 x 1,056 h	126,720
1 Loader	\$76.75/h x 1,056 h	81,048
2 Floats	\$65.00/h x 2 x 200 h	26,000
Asphalt Plant	\$4,500,000 x 20% amortization average over 15 years	307,292
1-3/4 t truck	\$22/h x 1,254 h	27,588
2 - 1/2 t trucks	\$17/h x 2 x 1,254 h	42,636
Asphalt Spreader	\$97/h x 1,056 h	102,432
Office Trailer	\$37/h x 1,434 h	53,058

Operational Costs for Asphalt Plant & Paving Equipment

792,774

792,774

Daily Tonnage

1000 t per day x 4 days per week = 4000 t per week

22 week paving season = 88 days

88 days x 1000 t

88,000 t

Cost Per Tonne to Produce Asphalt Concrete

Labour	771,987	
Lodging	156,816	
Operational Costs	792,774	
<b>Total</b>	<b>1,721,577</b>	<b>1,721,577</b>
Price per tonne based on 88,000 t		19.56

Other Related Costs per Tonne

Asphalt Plant Maintenance 5.61 88000 493680

1.00

88000

5.61

493680

# N.S. stopping short of target in paving, chip-sealing effort

December 14, 2012 - 9:54pm BY DAVID JACKSON STAFF REPORTER

Maybe the third year will be the charm for the province's foray into the paving and chip-sealing business.

Transportation Department figures for 2012 show the amount of work done in-house in Year 2 again fell well short of targets. In February, senior department officials said there was an "aggressive target" of about 300 kilometres of single and double chip seal, mixes of asphalt and aggregate rock pressed together to create a smooth surface.

The amount completed this year was 173 kilometres. Total Chip Seal Completed 2012

There was also a problem with laying asphalt because of the late arrival of a \$3.6-million mobile asphalt plant this summer. The department finished 54 kilometres of about 88 kilometres planned, and tendered out the other 34 kilometres in Annapolis and Digby counties.

The 2011 business plan behind the launch of the department's new in-house road work projected 311 kilometres of single chip seal and 55 kilometres of double chip sealing. The amounts done this year were 122 kilometres and 51 kilometres, respectively.

David Wilson, the acting transportation minister, said the business plan targets are based on operations over a few years.

"We're hindered sometimes by weather," Wilson said Friday. "We're committed to ensuring we're very transparent with where we're paving, how much we're paving."

Most of the work was done in NDP-held constituencies in Pictou, Antigonish, Guysborough, Lunenburg, and Queens counties. Of the 227 kilometres of asphalt and single and double chip sealing, 79 per cent were in those counties. Forty of the 55 individual projects were in those counties. Other work was in Colchester and Victoria counties.

Wilson said the department wanted to do the work in clusters for the sake of efficiency, and different areas of the province will see t government crews in the future.

"You concentrate on a certain area, and then you move on to another area, so we'll see that percentage move as we move around t province," he said.

The government launched its paving work in 2011, saying it wanted to bring down the cost of work in parts of the province where the was a low number of tenders.

In 2011, 40 of the planned 56 kilometres of double chip sealing was done, and none of the more than 300 kilometres planned for sing chip sealing. The department said in February that 2011 was a learning year, and bad weather and the need for training delayed wor until early August.

Last year, the government's chip-seal crew did its work at \$49,000 per kilometre, while tenders from the private sector came in at \$40,000. The department said the crew's presence helped drive down the private-sector price from \$91,000 in 2008 and 2009, while Nova Scotia Road Builders Association countered that lower prices were due to a change in the government's specifications, bigger jobs in better locations and competition among companies.

A 2012 comparison of the average cost of a kilometre of work by the department versus the private sector won't be available until t new year because invoices are still coming in, said department spokeswoman Sue McKeage.

Then-Transportation minister Bill Estabrooks said last year that a better assessment of the government's paving and chip-sealing w would come after three years.

The opposition made up their minds a while ago, with both parties saying they would get out of the business.

"The government's responsibility is to ensure that the proper tenders are being done, all of the engineering spec work is done in a timely fashion, and releasing as many of those tenders in January and February as possible," said Liberal Leader Stephen McNeil.



Progressive Conservative transportation critic Allan MacMaster also said road work should be left to the private sector.

"If there's a project in a rural area that's not getting enough bids, maybe package it with some other projects to get more interest," h said.

"Just let natural competitive forces give us the best paving for the cheapest price."

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***By DAVID JACKSON Staff Reporter***

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**The  
ChronicleHerald**

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## Introduction to proposal

The tendering process is intended to provide competitive pricing. However, Transportation and Infrastructure Renewal (TIR) is not receiving competitive bids for asphalt projects in some areas of the province (see table on page 8). Where tendering does not provide a competitive bidding environment, TIR proposes taking steps to establish competition and ensure tax payer's dollars are spent wisely. TIR is concerned that due to high tender prices, asphalt repaving work may be cancelled or may cost more money than estimated. This could result in reduced kilometres repaved, further deterioration of the roadways and costly repairs in the future.

TIR proposes a mobile paving plant operation which will work in areas of limited competition to produce a competitively priced asphalt product. TIR does not intend to do work in areas of the Province where there is already competitive bidding (typically central and northern Nova Scotia, see table on page 8). To a certain extent the establishment of a mobile asphalt plant is an insurance policy to ensure fair pricing.

Potential savings of \$1.3 million can be achieved if competitive bidding occurs province wide. TIR can produce hot mix asphalt for \$45.47 per tonne, which is a savings of 16.3% from the average price of \$54.31 in non-competitive counties.

It is TIR's intent to only conduct repaving of trunks, routes and local roads in areas where there is lack of competitive bidding. All other incidental work involved with this repaving, such as crushing asphalt aggregate, replacing culverts, crushing and application of shoulder gravel, ditching, etc, could either be tendered (current practice) or carried out with Department forces.

A Provincial asphalt plant provides benefits beyond competitive bidding. It also includes better utilization of TIR winter equipment. Many tandem trucks and loaders currently sit idle in the summer, but the asphalt plant would provide year round work for that equipment, offsetting many of the fixed costs. An asphalt plant's activities are much easier on the equipment than hauling salt and plowing snow so there would be minimal impacts on the useful life of the equipment.

The total cost to purchase and outfit an asphalt plant operation is an estimated \$6.0 million. This would be funded from the existing capital program allotment. It will take approximately 5 years to recover the \$6.0 million capital investment to set up an asphalt plant operation. (See Projected Savings tables, pages 12-13). In order to be operational for the 2012 construction season, TIR would require approval to proceed by mid 2010.

The asphalt plant would require approximately \$10 million of TCA funding each year for repaving. This would also be funded from the existing capital program allotment. TIR's goal is to repave an additional 90 - 125 kilometres of secondary roads per year using the pavement preservation strategy of single lift overlay or through simple double overlay projects.

↙  
Total Km road work Committed 10