Calculation of Non-Recurrent Costs, based on 2002 \$

el						
	Was	Wasted Fuel Costs (2002 \$m)				
Location	Year	at 50%	at 60%	at 70%		
Vancouver	2003	\$25.3	\$34.4	\$38.0		
Edmonton	2000			-		
Calgary	2001			-		
Winnipeg	1992	\$4.8	\$7.6	\$8.4		
Hamilton	2001	\$1.1	\$1.4	\$1.4		
Hamilton	2001	\$0.9	\$1.1	\$1.2		
Toronto	2001	\$92.2	\$100.8	\$102.3		
Ottawa-Gatineau	1995	\$5.1	\$6.6	\$7.0		
Ottawa-Gatineau	1995	\$5.0	\$6.2	\$6.7		
Montréal	1998	\$43.9	\$47.9	\$49.1		
Québec City	2001	\$3.9	\$5.6	\$6.5		
	Total, base	\$176.2	\$204.2	\$212.7		
Total, Old H & No		\$175.9	\$203.7	\$212.		

n-Recurrent Congestion /	rrent as % o		
i-recuirent congestion?	COSIS dS FI	oportion of	Recuire
	Wasted F	uel Costs (2002 \$m)
Location	at 50%	at 60%	at 70%
Vancouver	0.91	0.76	0.67
Edmonton	-	-	-
Calgary			-
Winnipeg	1.18	0.80	0.86
Hamilton	1.80	2.38	1.67
Hamilton	1.80	2.38	1.67
Toronto	0.72	0.71	0.66
Ottawa-Gatineau	1.48	2.10	1.98
Ottawa-Gatineau	1.48	2.10	1.98
Montréal	0.47	0.45	0.45
Québec City	0.98	1.00	0.98

 osts of Non-Recurrent Cong	estion			
	Was	ted Fuel Co	osts (2002	\$m)
Location	Year	at 50%	at 60%	at 70%
Vancouver	2003	\$23.1	\$26.1	\$25.4
Edmonton	2000	-		
Calgary	2001	-		
Winnipeg	1992	\$5.6	\$6.1	\$7.3
Hamilton	2001	\$2.0	\$3.2	\$2.3
Hamilton	2001	\$1.6	\$2.7	\$2.0
Toronto	2001	\$66.3	\$71.3	\$67.1
Ottawa-Gatineau	1995	\$7.5	\$13.8	\$13.8
Ottawa-Gatineau	1995	\$7.4	\$13.1	\$13.3
Montréal	1998	\$20.5	\$21.6	\$22.2
Québec City	2001	\$3.8	\$5.6	\$6.4
	Total, base	\$128.8	\$147.8	\$144.4
Total, Old H & N	o rural O-G	\$128.4	\$146.6	\$143.6

	Was	sted Fuel Co	sts (2002 \$m	1)
Location	Year	at 50%	at 60%	at 70%
Vancouver	2003	\$48.3	\$60.5	\$63.4
Edmonton	2000			-
Calgary	2001			
Winnipeg	1992	\$10.4	\$13.7	\$15.7
Hamilton	2001	\$3.1	\$4.6	\$3.6
Hamilton	2001	\$2.5	\$3.8	\$3.1
Toronto	2001	\$158.5	\$172.1	\$169.4
Ottawa-Gatineau	1995	\$12.5	\$20.3	\$20.8
Ottawa-Gatineau	1995	\$12.4	\$19.4	\$20.0
Montréal	1998	\$64.4	\$69.5	\$71.3
Québec City	2001	\$7.7	\$11.2	\$12.9
	Total, base	\$305.0	\$352.0	\$357.1
Total, Old H & N	lo rural O-G	\$304.3	\$350.2	\$355.7

	Wast	ed Fuel Cos	ts (2002 \$n	1)
Location	Year	at 50%	at 60%	at 70%
Vancouver	2003	48%	43%	40
Edmonton	2000			
Calgary	2001	-	-	
Winnipeg	1992	54%	44%	46
Hamilton	2001	64%	70%	639
Hamilton	2001	64%	70%	639
Toronto	2001	42%	41%	409
Ottawa-Gatineau	1995	60%	68%	669
Ottawa-Gatineau	1995	60%	68%	669
Montréal	1998	32%	31%	319
Québec City	2001	49%	50%	509
	Total, base	42%	42%	409
Total, Old H	No rural O-G	42%	42%	409

	-	GHG Costs	(2002 \$m)	
Location	Year	at 50%	at 60%	at 70%
Vancouver	2003	\$5.3	\$7.2	\$8.0
Edmonton	2000	-	-	-
Calgary	2001	-	-	-
Winnipeg	1992	\$1.0	\$1.6	\$1.8
Hamilton	2001	\$0.2	\$0.3	\$0.3
Hamilton	2001	\$0.2	\$0.3	\$0.3
Toronto	2001	\$19.6	\$21.4	\$21.7
Ottawa-Gatineau	1995	\$1.1	\$1.4	\$1.5
Ottawa-Gatineau	1995	\$1.1	\$1.4	\$1.5
Montréal	1998	\$10.0	\$11.0	\$11.2
Québec City	2001	\$0.8	\$1.2	\$1.4
	Total, base	\$38.0	\$44.1	\$45.9
Total, Old H & No	rural O-G	\$38.0	\$44.0	\$45.8

	GHG	Costs (200	2 \$m)
Location	at 50%	at 60%	at 70%
Vancouver	0.91	0.76	0.67
Edmonton			-
Calgary	-	-	-
Winnipeg	1.18	0.80	0.86
Hamilton	1.80	2.38	1.67
Hamilton	1.80	2.38	1.67
Toronto	0.72	0.71	0.66
Ottawa-Gatineau	1.48	2.10	1.98
Ottawa-Gatineau	1.48	2.10	1.98
Montréal	0.47	0.45	0.45
Québec City	0.98	1.00	0.98

		GHG Costs	(2002 \$m)	
Location	Year	at 50%	at 60%	at 70%
Vancouver	2003	\$4.8	\$5.5	\$5.3
Edmonton	2000			
Calgary	2001		-	
Winnipeg	1992	\$1.2	\$1.3	\$1.6
Hamilton	2001	\$0.4	\$0.7	\$0.5
Hamilton	2001	\$0.4	\$0.6	\$0.4
Toronto	2001	\$14.1	\$15.1	\$14.2
Ottawa-Gatineau	1995	\$1.6	\$3.0	\$3.0
Ottawa-Gatineau	1995	\$1.6	\$2.8	\$2.9
Montréal	1998	\$4.7	\$5.0	\$5.1
Québec City	2001	\$0.8	\$1.2	\$1.4
	otal, base	\$27.6	\$31.8	\$31.1
Total, Old H & No	rural O-G	\$27.5	\$31.5	\$30.9

		GHG Costs (2002 \$m)				
Location	Year	at 50%	at 60%	at 70%		
Vancouver	2003	\$10.1	\$12.7	\$13.		
Edmonton	2000			-		
Calgary	2001			-		
Winnipeg	1992	\$2.2	\$2.9	\$3.		
Hamilton	2001	\$0.7	\$1.0	\$0.		
Hamilton	2001	\$0.6	\$0.9	\$0.		
Toronto	2001	\$33.6	\$36.5	\$35.		
Ottawa-Gatineau	1995	\$2.7	\$4.4	\$4.		
Ottawa-Gatineau	1995	\$2.7	\$4.2	\$4.		
Montréal	1998	\$14.7	\$16.0	\$16.		
Québec City	2001	\$1.6	\$2.4	\$2.		
	Total, base	\$65.6	\$75.9	\$76.		
Total, Old H &	No rural O-G	\$65.5	\$75.5	\$76.		

	GHG Costs (2002 \$m)				
Location	Year	at 50%	at 60%	at 70%	
Vancouver	2003	48%	43%	409	
Edmonton	2000	1	-		
Calgary	2001	-			
Winnipeg	1992	54%	44%	469	
Hamilton	2001	64%	70%	639	
Hamilton	2001	64%	70%	639	
Toronto	2001	42%	41%	409	
Ottawa-Gatineau	1995	60%	68%	669	
Ottawa-Gatineau	1995	60%	68%	669	
Montréal	1998	32%	31%	319	
Québec City	2001	49%	50%	509	
	Total, base	42%	42%	409	
Total, Old H &	No rural O-G	42%	42%	409	

	Tota	al Delay Co	sts (2002 \$	im)
Location	Year	at 50%	at 60%	at 70%
Vancouver	2003	\$372.2	\$475.2	\$582.7
Edmonton	2000	\$49.4	\$62.1	\$74.1
Calgary	2001	\$94.6	\$112.4	\$121.4
Winnipeg	1992	\$42.6	\$67.9	\$93.8
Hamilton	2001	\$5.2	\$9.7	\$15.2
Hamilton	2001	\$4.3	\$6.5	\$9.5
Toronto	2001	\$777.9	\$1,145.2	\$1,507.7
Ottawa-Gatineau	1995	\$33.4	\$53.5	\$80.1
Ottawa-Gatineau	1995	\$32.1	\$51.8	\$77.6
Montréal	1998	\$648.0	\$795.2	\$926.5
Québec City	2001	\$32.7	\$45.5	\$60.5
	Total, base	\$2,056.0	\$2,766.6	\$3,462.0
Total, Old H & N	o rural O-G	\$2,053.7	\$2,761.7	\$3,453.8

	Total Del	ay Costs (2	2002 \$m)
Location	at 50%	at 60%	at 70%
Vancouver	0.92	0.89	0.83
Edmonton	1.05	0.97	0.92
Calgary	1.05	0.97	0.92
Winnipeg	1.69	1.36	1.21
Hamilton	2.39	2.00	2.00
Hamilton	2.39	2.00	2.00
Toronto	1.26	1.09	1.00
Ottawa-Gatineau	1.69	1.90	1.91
Ottawa-Gatineau	1.69	1.90	1.91
Montréal	0.79	0.73	0.70
Québec City	1.06	1.09	1.14

	Tot	al Delay Co	sts (2002 \$	im)
Location	Year	at 50%	at 60%	at 70%
Vancouver	2003	\$342.7	\$424.8	\$481.7
Edmonton	2000	\$51.8	\$60.2	\$68.2
Calgary	2001	\$99.3	\$109.0	\$111.7
Winnipeg	1992	\$72.1	\$92.3	\$113.7
Hamilton	2001	\$12.4	\$19.4	\$30.6
Hamilton	2001	\$10.2	\$13.0	\$19.0
Toronto	2001	\$980.4	\$1,242.6	\$1,510.9
Ottawa-Gatineau	1995	\$56.6	\$101.5	\$153.0
Ottawa-Gatineau	1995	\$54.4	\$98.2	\$148.3
Montréal	1998	\$510.4	\$578.3	\$644.4
Québec City	2001	\$34.6	\$49.6	\$69.1
	Total, base	\$2,160.3	\$2,677.7	\$3,183.2
Total, Old H & N	rural O-G	\$2,155.9	\$2,668.1	\$3,167.0

	To	tal Delay Cos	ts (2002 \$m)
Location	Year	at 50%	at 60%	at 70%
Vancouver	2003	\$714.8	\$899.9	\$1,064.
Edmonton	2000	\$101.2	\$122.3	\$142.
Calgary	2001	\$193.9	\$221.4	\$233.
Winnipeg	1992	\$114.7	\$160.2	\$207.
Hamilton	2001	\$17.6	\$29.1	\$45.
Hamilton	2001	\$14.4	\$19.5	\$28.
Toronto	2001	\$1,758.3	\$2,387.8	\$3,018.
Ottawa-Gatineau	1995	\$90.0	\$155.0	\$233.
Ottawa-Gatineau	1995	\$86.5	\$150.0	\$225.
Montréal	1998	\$1,158.4	\$1,373.5	\$1,570.
Québec City	2001	\$67.4	\$95.1	\$129.
	Total, base	\$4,216.3	\$5,444.4	\$6,645.
Total, Old H & N	o rural O-G	\$4,209.7	\$5,429.8	\$6,620.

	Tota	I Delay Cost	s (2002 \$m	
Location	Year	at 50%	at 60%	at 70%
Vancouver	2003	48%	47%	45%
Edmonton	2000	51%	49%	48%
Calgary	2001	51%	49%	48%
Winnipeg	1992	63%	58%	55%
Hamilton	2001	70%	67%	67%
Hamilton	2001	70%	67%	67%
Toronto	2001	56%	52%	50%
Ottawa-Gatineau	1995	63%	65%	66%
Ottawa-Gatineau	1995	63%	65%	66%
Montréal	1998	44%	42%	41%
Québec City	2001	51%	52%	53%
	Total, base	51%	49%	48%
Total, Old H &	No rural O-G	51%	49%	48%

16.8 62.1 12.4 77.2 11.3 \$7.9	\$628. \$74. \$121. \$104. \$16. \$10.
62.1 12.4 77.2 11.3 \$7.9	\$74. \$121. \$104. \$16. \$10.
12.4 77.2 11.3 \$7.9	\$121. \$104. \$16. \$10.
77.2 11.3 \$7.9	\$104. \$16. \$10.
11.3 \$7.9	\$16. \$10.
\$7.9	\$10.
67.3	1,631.
61.5	\$88.
59.4	\$85.
54.1	\$986.
52.3	\$68.
15.0 \$	3,720.
	59.4 54.1 52.3

	To	tal, All Cos	ts (2002 \$1	n)
Location	Year	at 50%	at 60%	at 70%
Vancouver	2003	\$370.5	\$456.4	\$512.4
Edmonton	2000	\$51.8	\$60.2	\$68.2
Calgary	2001	\$99.3	\$109.0	\$111.
Winnipeg	1992	\$78.9	\$99.7	\$122.
Hamilton	2001	\$14.9	\$23.3	\$33.
Hamilton	2001	\$12.1	\$16.3	\$21.
Toronto	2001	\$1,060.9	\$1,329.0	\$1,592.
Ottawa-Gatineau	1995	\$65.7	\$118.3	\$169.
Ottawa-Gatineau	1995	\$63.4	\$114.2	\$164.
Montréal	1998	\$535.6	\$604.8	\$671.6
Québec City	2001	\$39.2	\$56.4	\$76.9
	Total, base	\$2,316.8	\$2,857.3	\$3,358.7
Total, Old H & No	rural O-G	\$2.311.8	\$2.846.2	\$3,341.

	Т	otal, All Cost	s (2002 \$m)	
Location	Year	at 50%	at 60%	at 70%
Vancouver	2003	\$773.3	\$973.2	\$1,141.
Edmonton	2000	\$101.2	\$122.3	\$142.
Calgary	2001	\$193.9	\$221.4	\$233.
Winnipeg	1992	\$127.3	\$176.9	\$226.
Hamilton	2001	\$21.4	\$34.7	\$50.
Hamilton	2001	\$17.5	\$24.1	\$32.
Toronto	2001	\$1,950.5	\$2,596.3	\$3,223.
Ottawa-Gatineau	1995	\$105.3	\$179.8	\$258.
Ottawa-Gatineau	1995	\$101.6	\$173.6	\$250.
Montréal	1998	\$1,237.5	\$1,458.9	\$1,658.
Québec City	2001	\$76.6	\$108.7	\$145.
	Total, base	\$4,586.9	\$5,872.3	\$7,079.
Total, Old H & N	o rural O-G	\$4,579.4	\$5.855.5	\$7.053.

	Tot	al. All Costs	(2002 Sm)	
Location	Year	at 50%	at 60%	at 70%
Vancouver	2003	48%	47%	45%
Edmonton	2000	51%	49%	48%
Calgary	2001	51%	49%	48%
Winnipeg	1992	62%	56%	54%
Hamilton	2001	69%	67%	66%
Hamilton	2001	69%	67%	66%
Toronto	2001	54%	51%	49%
Ottawa-Gatineau	1995	62%	66%	66%
Ottawa-Gatineau	1995	62%	66%	66%
Montréal	1998	43%	41%	40%
Québec City	2001	51%	52%	53%
	Total, base	51%	49%	47%

	De	lay as % of	Total Cos	ts
Location	Year	at 50%	at 60%	at 70%
Vancouver	2003	92.4%	91.9%	92.7%
Edmonton	2000	-	-	
Calgary	2001	-	-	-
Winnipeg	1992	88.1%	88.0%	90.2%
Hamilton	2001	79.4%	85.4%	90.1%
Hamilton	2001	79.5%	82.5%	86.8%
Toronto	2001	87.4%	90.4%	92.4%
Ottawa-Gatineau	1995	84.5%	87.0%	90.4%
Ottawa-Gatineau	1995	84.1%	87.2%	90.5%
Montréal	1998	92.3%	93.1%	93.9%
Québec City	2001	87.4%	87.0%	88.4%
	Total, base	90.6%	91.8%	93.1%
Total, Old H & N	o rural O-G	90.6%	91.8%	93.0%

		lay as % o	f Total Cos	
Location	Year	at 50%	at 60%	at 70%
Vancouver	2003	92.5%	93.1%	94.0%
Edmonton	2000			
Calgary	2001			
Winnipeg	1992	91.4%	92.6%	92.8%
Hamilton	2001	83.6%	83.1%	91.6%
Hamilton	2001	83.8%	79.8%	88.8%
Toronto	2001	92.4%	93.5%	94.9%
Ottawa-Gatineau	1995	86.1%	85.8%	90.1%
Ottawa-Gatineau	1995	85.8%	86.0%	90.2%
Montréal	1998	95.3%	95.6%	95.9%
Québec City	2001	88.3%	87.9%	89.9%
	Total, base	93.2%	93.7%	94.8%
Total, Old H & N	rural O-G	93.3%	93.7%	94.8%

Location	50%	60%	70%
Vancouver	92%	92%	939
Edmonton	-		
Calgary	-		-
Winnipeg	90%	91%	929
Hamilton	82%	84%	919
Hamilton (old)	82%	81%	88%
Toronto	90%	92%	94%
Ottawa-Gatineau	85%	86%	909
Ottawa-Gatineau (no	85%	86%	90%
Montréal	94%	94%	95%
Québec City	88%	87%	89%
Total, base	92%	93%	949
, Old H & No rural O-G	92%	93%	94%

elay	Costs of Recurrent	Congestio	n (original	study)
- 1		Total Del	ay Costs (2	2000 \$m)
	Location	at 50%	at 60%	at 70%
	Vancouver	\$355	\$453	\$556
	Edmonton	\$47	\$59	\$71
	Calgary	\$91	\$107	\$115
	Winnipeg	\$41	\$65	\$90
	Hamilton	\$5	\$10	\$14
	Hamilton (old)	\$4	\$6	\$9
	Toronto	\$741	\$1,091	\$1,437
	Ottawa-Gatineau	\$31	\$51	\$76

	Ottawa-Gatineau	\$31	\$51	\$76
	Ottawa-Gatineau (no	\$30	\$50	\$74
	Montréal	\$618	\$758	\$882
	Québec City	\$31	\$43	\$57
	Total, base	\$1,959	\$2,636	\$3,298
Total,	Old H & No rural O-G	\$1,957	\$2,630	\$3,291
	Non-recurrent as %	of Recurre	ent	
	Non-recurrent as %		ent ay Costs (2	2000 \$m)
	Non-recurrent as %			2000 \$m) at 70%
		Total Del	ay Costs (2	
	Location	Total Del at 50%	ay Costs (2 at 60%	at 70%
	Location Vancouver	Total Del at 50% 0.92	ay Costs (2 at 60% 0.89	at 70% 0.83
	Location Vancouver Edmonton	Total Del at 50% 0.92 1.05	ay Costs (2 at 60% 0.89 0.97	at 70% 0.83 0.92
	Location Vancouver Edmonton Calgary	Total Del at 50% 0.92 1.05 1.05	ay Costs (2 at 60% 0.89 0.97 0.97	0.83 0.92 0.92

	Total Del	ay Costs (2	2000 \$m)
Location	at 50%	at 60%	at 70%
Vancouver	\$327	\$405	\$459
Edmonton	\$50	\$57	\$65
Calgary	\$94	\$104	\$107
Winnipeg	\$69	\$88	\$109
Hamilton	\$11	\$18	\$30
Hamilton (old)	\$10	\$12	\$18
Toronto	\$934	\$1,185	\$1,440
Ottawa-Gatineau	\$54	\$97	\$146
Ottawa-Gatineau (no	\$51	\$93	\$141
Montréal	\$486	\$551	\$614
Québec City	\$33	\$48	\$66
Total, base	\$2,058	\$2,552	\$3,034
Old H & No rural O-G	\$2,054	\$2,543	\$3,018

	Total Delay Costs (2000 \$m)		
Location	at 50%	at 60%	at 70%
Vancouver	\$681	\$858	\$1,014
Edmonton	\$96	\$116	\$135
Calgary	\$185	\$211	\$222
Winnipeg	\$110	\$152	\$198
Hamilton	\$17	\$28	\$44
Hamilton (old)	\$13	\$18	\$27
Toronto	\$1,675	\$2,276	\$2,877
Ottawa-Gatineau	\$86	\$148	\$222
Ottawa-Gatineau (no	\$83	\$143	\$215
Montréal	\$1,104	\$1,308	\$1,497
Québec City	\$64	\$91	\$124
Total, base	\$4,018	\$5,187	\$6,334
ld H & No rural O-G	\$4,011	\$5,173	\$6,310

% Non-recurrent of total Threshold				
Location	at 50%	at 60%	at 70%	
Vancouver	48%	47%	45%	
Edmonton	51%	49%	48%	
Calgary	51%	49%	48%	
Winnipeg	63%	58%	55%	
Hamilton	67%	66%	67%	
Hamilton (old)	71%	68%	68%	
Toronto	56%	52%	50%	
Ottawa-Gatineau	63%	66%	66%	
Ottawa-Gatineau (no	62%	65%	65%	
Montréal	44%	42%	41%	
Québec City	52%	53%	53%	
Total, base	51%	49%	48%	
Total, Old H & No rural O-G	51%	49%	48%	

Deflat	or:	0.953

Costs of Recurrent C					
asted Fuel	Wasted F	Wasted Fuel Costs (2000 \$m)			
Location	50%	60%	70%		
Vancouver	\$24	\$32	\$36		
Edmonton			-		
Calgary		-	_		
Winnipeg	\$5	\$8	\$8		
Hamilton	\$1	\$1	\$1		
Hamilton (old)	\$1	\$1	\$1		
Toronto	\$88	\$96	\$97		
Ottawa-Gatineau	\$5	\$7	\$7		
Ottawa-Gatineau (no	\$5	\$6	\$7		
Montréal	\$42	\$46	\$47		
Québec City	\$4	\$6	\$7		
Total, base	\$168	\$195	\$202		
Total, Old H & No rural O-G	\$168	\$194	\$202		

Non-recurrent as % of Recurrent Wasted Fuel Costs (2000 \$m)				
Location	50%	60%	70%	
/ancouver	0.91	0.76	0.67	
Edmonton	-		-	
Calgary	-	-	-	
Winnipeg	1.18	0.80	0.86	
Hamilton	1.80	2.38	1.67	
Hamilton (old)	1.80	2.38	1.67	
Toronto	0.72	0.71	0.66	
Ottawa-Gatineau	1.48	2.10	1.98	
Ottawa-Gatineau (no	1.48	2.10	1.98	
Montréal	0.47	0.45	0.45	
Québec City	0.98	1.00	0.98	

		el Costs (2	
Location	50%	60%	70%
Vancouver	\$22	\$25	\$24
Edmonton	-	-	-
Calgary			-
Winnipeg	\$6	\$6	\$7
Hamilton	\$2	\$3	\$2
Hamilton (old)	\$2	\$3	\$2
Toronto	\$63	\$68	\$64
Ottawa-Gatineau	\$7	\$13	\$13
Ottawa-Gatineau (no	\$7	\$12	\$12
Montréal	\$20	\$21	\$21
Québec City	\$4	\$6	\$6
Total, base	\$123	\$141	\$136
d H & No rural O-G	\$123	\$140	\$135

Recurrent + Non-Rec	Recurrent + Non-Recurrent = Total Costs					
	Wasted Fuel Costs (2000 \$m)					
Location	50%	60%	70%			
Vancouver	\$46	\$58	\$60			
Edmonton						
Calgary			-			
Winnipeg	\$10	\$13	\$15			
Hamilton	\$3	\$5	\$4			
Hamilton (old)	\$3	\$4	\$3			
Toronto	\$152	\$164	\$161			
Ottawa-Gatineau	\$12	\$19	\$20			
Ottawa-Gatineau (no	\$11	\$18	\$19			
Montréal	\$61	\$66	\$68			
Québec City	88	\$10	\$12			
Total, base	\$291	\$335	\$340			
al, Old H & No rural O-G	\$290	\$334	\$338			

Wasted Fuel Costs (2000 \$m)				
Location	50%	60%	70%	
Vancouver	48%	43%	40%	
Edmonton	-		-	
Calgary	-	-	-	
Winnipeg	60%	43%	44%	
Hamilton	67%	60%	50%	
Hamilton (old)	67%	75%	67%	
Toronto	42%	41%	40%	
Ottawa-Gatineau	54%	70%	67%	
Ottawa-Gatineau (no	58%	68%	65%	
Montréal	33%	32%	31%	
Québec City	50%	55%	46%	
Total, base	42%	42%	40%	
ld H & No rural O-G	42%	42%	40%	

IG	Costs of Recurrent Congestion (original study) GHG Costs (2000 \$m)				
Location	50%	60%	70%		
Vancouver	\$5	\$7	\$8		
Edmonton	-	-			
Calgary	-	-			
Winnipeg	\$1	\$2	\$2		
Hamilton	\$0	\$0	\$0		
Hamilton (old)	\$0	\$0	\$0		
Toronto	\$19	\$20	\$21		
Ottawa-Gatineau	\$1	\$1	\$2		
Ottawa-Gatineau		\$1	\$1		
Montréal	\$10	\$10	\$10		
Québec City	\$1	\$1	\$1		
Total, b		\$41	\$44		
Total, Old H & No rural (D-G \$36	\$41	\$43		

GHG Costs (2000 \$m)				
Location	50%	60%	70%	
Vancouver	0.91	0.76	0.6	
Edmonton		-	-	
Calgary		-	-	
Winnipeg	1.18	0.80	0.8	
Hamilton	1.80	2.38	1.6	
Hamilton (old)	1.80	2.38	1.67	
Toronto	0.72	0.71	0.6	
Ottawa-Gatineau	1.48	2.10	1.9	
Ottawa-Gatineau (no	1.48	2.10	1.9	
Montréal	0.47	0.45	0.4	
Québec City	0.98	1.00	0.9	

	Location	50%	60%	70%
	Vancouver	\$5	\$5	\$5
	Edmonton	-		
	Calgary			-
	Winnipeg	\$1	\$1	\$2
	Hamilton	\$0	\$1	\$
	Hamilton (old)	\$0	\$1	\$1
	Toronto	\$13	\$14	\$13
	Ottawa-Gatineau	\$2	\$3	\$:
	Ottawa-Gatineau (no	\$2	\$3	\$:
	Montréal	\$5	\$5	\$
	Québec City	\$1	\$1	\$
	Total, base	\$27	\$30	\$30
Total, C	ld H & No rural O-G	\$27	\$30	\$2

rent + Non-Rec	urrent = To	tal Costs		Recurrent + Non-Re
	Wasted F	uel Costs (2000 \$m)	
ion	50%	60%	70%	Location
uver	\$46	\$58	\$60	Vancouver
ton			-	Edmonton
y		-	-	Calgary
ieg	\$10	\$13	\$15	Winnipeg
on	\$3	\$5	\$4	Hamilton
on (old)	\$3	\$4	\$3	Hamilton (old)
0	\$152	\$164	\$161	Toronto
a-Gatineau	\$12	\$19	\$20	Ottawa-Gatineau
a-Gatineau (no	\$11	\$18	\$19	Ottawa-Gatineau (no
éal	\$61	\$66	\$68	Montréal
ec City	88	\$10	\$12	Québec City
Total, base	\$291	\$335	\$340	Total, base
No rural O-G	\$290	\$334	\$338	I, Old H & No rural O-G

tal			
٧	Vasted Fr	uel Costs (2000 \$m)
	50%	60%	70%
	48%	43%	40%
			-
-		-	
60)%	43%	44%
679	6	60%	50%
679	6	75%	67%
429	8	41%	40%
54	1%	70%	67%
	58%	68%	65%
3	13%	32%	31%
	50%	55%	46%
	12%	42%	40%
_ 4	12%	42%	40%

Total	Threshold						
	Location	50%	60%	70%			
	Vancouver	\$384	\$493	\$599			
	Edmonton	\$47	\$59	\$71			
	Calgary	\$91	\$107	\$115			
	Winnipeg	\$46	\$73	\$99			
	Hamilton	\$7	\$10	\$16			
	Hamilton (old)	\$5	\$8	\$10			
	Toronto	\$848	\$1,207	\$1,555			
	Ottawa-Gatineau	\$38	\$58	\$85			
	Ottawa-Gatineau (no	\$36	\$56	\$82			
	Montréal	\$669	\$814	\$941			
	Québec City	\$35	\$50	\$65			
	Total, base	\$2,164	\$2,871	\$3,546			
Total,	Old H & No rural O-G	\$2,160	\$2,867	\$3,538			

GHG Costs (2000 \$m)					
Location	50%	60%	70%		
Vancouver	0.91	0.76	0.6		
Edmonton		-	-		
Calgary		-	-		
Winnipeg	1.18	0.80	0.8		
Hamilton	1.80	2.38	1.67		
Hamilton (old)	1.80	2.38	1.67		
Toronto	0.72	0.71	0.66		
Ottawa-Gatineau	1.48	2.10	1.98		
Ottawa-Gatineau (no	1.48	2.10	1.98		
Montréal	0.47	0.45	0.4		
Québec City	0.98	1.00	0.98		
Total, base					
ld H & No rural O-G					

Increment of Non-Rec				Ī	
	GHG (Costs (200)	(m\$ C		
Location	50%	60%	70%		
Vancouver	\$5	\$5	\$5		
Edmonton	-	-			
Calgary	-	-			
Winnipeg	\$1	\$1	\$2		
Hamilton	\$0	\$1	\$1		
Hamilton (old)	\$0	\$1	\$0		
Toronto	\$13	\$14	\$13		
Ottawa-Gatineau	\$2	\$3	\$3		
Ottawa-Gatineau (no	\$2	\$3	\$3		
Montréal	\$5	\$5	\$5		
Québec City	\$1	\$1	\$1		
Total, base	\$27	\$30	\$30	l	
Old H & No rural O-G	\$27	\$30	\$29		Tot

	GHG Costs (2000 \$m)				
Location	50%	60%	70%		
Vancouver	\$10	\$12	\$12		
Edmonton		-			
Calgary	-	-			
Winnipeg	\$2	\$3	\$3		
Hamilton	\$1	\$1	\$1		
Hamilton (old)	\$1	\$1	\$1		
Toronto	\$32	\$35	\$34		
Ottawa-Gatineau	\$3	\$4	\$5		
Ottawa-Gatineau (no	\$3	\$4	\$4		
Montréal	\$14	\$15	\$15		
Québec City	\$2	\$2	\$3		
Total, base	\$64	\$72	\$73		
I. Old H & No rural O-G	\$64	\$72	\$72		

GHG Costs (2000 \$m)					
Location	50%	60%	70%		
Vancouver	50%	38%	38%		
Edmonton		-	-		
Calgary	-	-	-		
Winnipeg	50%	33%	67%		
Hamilton	0%	100%	100%		
Hamilton (old)	0%	100%	0%		
Toronto	41%	41%	39%		
Ottawa-Gatineau	67%	75%	60%		
Ottawa-Gatineau (no	67%	75%	75%		
Montréal	33%	31%	31%		
Québec City	50%	50%	33%		
Total, base	42%	41%	40%		
Old H & No rural O-G	42%	41%	39%		

	Threshold						
Location	50%	60%	70%				
Vancouver	\$384	\$493	\$599				
Edmonton	\$47	\$59	\$71				
Calgary	\$91	\$107	\$115				
Winnipeg	\$46	\$73	\$99				
Hamilton	\$7	\$10	\$16				
Hamilton (old)	\$5	\$8	\$10				
Toronto	\$848	\$1,207	\$1,555				
Ottawa-Gatineau	\$38	\$58	\$85				
Ottawa-Gatineau (no	\$36	\$56	\$82				
Montréal	\$669	\$814	\$941				
Québec City	\$35	\$50	\$65				
Total, base	\$2,164	\$2,871	\$3,546				
I, Old H & No rural O-G	\$2,160	\$2,867	\$3,538				

	-	-			
1.18	0.80	0.86			
1.80	2.38	1.67			
1.80	2.38	1.67			
0.72	0.71	0.66			
1.48	2.10	1.98			
1.48	2.10	1.98			
0.47	0.45	0.45			
0.98	1.00	0.98			
current Cos	sts		ſ	Increment of No	n-Recu
GHG	Costs (200	0 \$m)			
50%	60%	70%		Location	
\$5	\$5	\$5	l	Vancouver	
	_	-		Edmonton	

sts (2000		1	 reconcil - Horric	current = Total Costs		
					eshold	
%	70%		Location	50%	60%	70%
\$12	\$12		Vancouver	\$737	\$927	\$1,08
-			Edmonton	\$96	\$116	\$13
-	-		Calgary	\$185	\$211	\$22
\$3	\$3		Winnipeg	\$121	\$169	\$21
\$1	\$1		Hamilton	\$20	\$33	\$4
\$1	\$1		Hamilton (old)	\$17	\$23	\$3
\$35	\$34		Toronto	\$1,858	\$2,474	\$3,07
\$4	\$5		Ottawa-Gatineau	\$100	\$172	\$24
\$4	\$4		Ottawa-Gatineau (ne	\$97	\$166	\$23
\$15	\$15		Montréal	\$1,179	\$1,390	\$1,58
\$2	\$3		Québec City	\$73	\$104	\$13
\$72	\$73		Total, base	\$4,370	\$5,596	\$6,74
\$72	\$72		Total, Old H & No rural O-G	\$4,364	\$5.580	\$6.72

	Thre	shold	
Location	50%	60%	70%
Vancouver	48%	47%	45%
Edmonton	51%	49%	48%
Calgary	51%	49%	48%
Winnipeg	62%	56%	54%
Hamilton	71%	66%	66%
Hamilton (old)	67%	67%	66%
Toronto	54%	51%	49%
Ottawa-Gatineau	63%	66%	66%
Ottawa-Gatineau (no	62%	66%	66%
Montréal	43%	41%	41%
Québec City	51%	51%	53%
Total, base	51%	49%	47%
al, Old H & No rural O-G	50%	49%	47%

/KT	Threshold						
	Location	50%	60%	70%			
	Vancouver	583,859	878,418	1,259,027			
	Edmonton	-	-	-			
	Calgary	-	-	-			
	Winnipeg	115,636	195,926	259,757			
	Hamilton	106,399	156,363	180,103			
	Hamilton (old)	33,805	83,769	107,509			
	Toronto	2,425,695	3,289,401	4,350,136			
	Ottawa-Gatineau	141,255	271,469	465,116			
	Ottawa-Gatineau (no	140,023	262,500	452,425			
	Montréal	1,155,359	1,466,859	1,785,695			
	Québec City	100,600	154,042	246,997			
	Total, base	4,628,803	6,412,478	8,546,831			
Total	Old H & No rural O-G	4,554,978	6,330,915	8,461,547			

			Tilrestiola		
Lo	cation	50%	60%	70%	
Va	ncouver	583,859	878,418	1,259,027	
Ed	monton	-	-	-	
Ca	lgary		-	-	
Wi	nnipeg	115,636	195,926	259,757	
Ha	milton	106,399	156,363	180,103	
Ha	milton (old)	33,805	83,769	107,509	
	ronto	2,425,695	3,289,401	4,350,136	
Ot	tawa-Gatineau	141,255	271,469	465,116	
Ot	tawa-Gatineau (no	140,023	262,500	452,425	
Mo	ontréal	1,155,359	1,466,859	1,785,695	
Qι	ébec City	100,600	154,042	246,997	
	Total, base	4,628,803	6,412,478	8,546,831	
Fotal, Old I	H & No rural O-G	4,554,978	6,330,915	8,461,547	

Increment of Non-Recur					
	Threshold				
Location	50%	60%	70%		
Vancouver	533,512	709,630	657,840		
Edmonton		-	-		
Calgary		-			
Winnipeg	130,403	156,303	252,326		
Hamilton	68,860	125,602	331,063		
Hamilton (old)	68,860	125,602	321,475		
Toronto	1,581,646	2,306,816	3,194,705		
Ottawa-Gatineau	223,153	588,016	819,376		
Ottawa-Gatineau (no	213,962	550,970	594,375		
Montréal	504,748	688,027	928,414		
Québec City	82,158	179,442	279,558		
Total, base	3,124,480	4,753,836	6,463,282		
Old H & No rural O-G	3,115,290	4,716,790	6.228.693		

	Threshold				
Location	50%	60%	70%		
Vancouver	1,117,371	1,588,048	1,916,868		
Edmonton	-		-		
Calgary					
Winnipeg	246,039	352,229	512,084		
Hamilton	175,259	281,965	511,165		
Hamilton (old)	102,665	209,371	428,984		
Toronto	4,007,341	5,596,217	7,544,841		
Ottawa-Gatineau	364,407	859,485	1,284,492		
Ottawa-Gatineau (no	353,985	813,470	1,046,800		
Montréal	1,660,108	2,154,886	2,714,109		
Québec City	182,758	333,484	526,555		
Total, base	7,753,284	11,166,314	15,010,113		
Old H & No rural O-G	7.670.268	11.047.705	14.690.240		

	Threshold			
Location	50%	60%	70%	
Vancouver	48%	45%	34%	
Edmonton	-	-	-	
Calgary	-			
Winnipeg	53%	44%	49%	
Hamilton	39%	45%	65%	
Hamilton (old)	67%	60%	75%	
Toronto	39%	41%	42%	
Ottawa-Gatineau	61%	68%	64%	
Ottawa-Gatineau (no	60%	68%	57%	
Montréal	30%	32%	34%	
Québec City	45%	54%	53%	
Total, base	40%	43%	43%	
Total, Old H & No rural O-G	41%	43%	42%	

Location	
Vancouver	2.50
Edmonton	-
Calgary	-
Winnipeg	2.00
Hamilton	2.00
Hamilton (old)	2.00
Toronto	3.00
Ottawa-Gatineau	2.50
Ottawa-Gatineau (no	2.50
Montréal	3.00
Québec City	2.50

Threshold				
Location	50%	60%	70%	
Vancouver	\$0.53	\$0.45	\$0.38	
Edmonton	-	-	-	
Calgary	-	-	-	
Winnipeg	\$0.40	\$0.37	\$0.38	
Hamilton	\$0.06	\$0.07	\$0.09	
Hamilton (old)	\$0.14	\$0.09	\$0.10	
Toronto	\$0.23	\$0.24	\$0.24	
Ottawa-Gatineau	\$0.22	\$0.17	\$0.15	
Ottawa-Gatineau (no	\$0.21	\$0.17	\$0.14	
Montréal	\$0.39	\$0.37	\$0.35	
Québec City	\$0.28	\$0.26	\$0.21	

Location	
Vancouver	2.50
Edmonton	
Calgary	-
Winnipeg	2.00
Hamilton	2.00
Hamilton (old)	2.00
Toronto	3.00
Ottawa-Gatineau	2.50
Ottawa-Gatineau (no	2.50
Montréal	3.00
Québec City	2.50

Location	
Vancouver	2.50
Edmonton	-
Calgary	-
Winnipeg	2.00
Hamilton	2.00
Hamilton (old)	2.00
Toronto	3.00
Ottawa-Gatineau	2.50
Ottawa-Gatineau (no	2.50
Montréal	3.00
Québec City	2.50

	1	Threshold		
Location	50%	60%	70%	
Vancouver	\$0.53	\$0.49	\$0.59	
Edmonton	-		-	
Calgary			-	
Winnipeg	\$0.58	\$0.61	\$0.46	
Hamilton	\$0.21	\$0.17	\$0.09	
Hamilton (old)	\$0.17	\$0.12	\$0.06	
Toronto	\$0.43	\$0.37	\$0.32	
Ottawa-Gatineau	\$0.23	\$0.15	\$0.16	
Ottawa-Gatineau (no	\$0.22	\$0.16	\$0.21	
Montréal	\$0.67	\$0.56	\$0.46	
Québec City	\$0.36	\$0.24	\$0.21	

	Threshold		
Location	50%	60%	70%
Vancouver	\$0.53	\$0.47	\$0.45
Edmonton			-
Calgary	-		-
Winnipeg	\$0.49	\$0.48	\$0.42
Hamilton	\$0.11	\$0.12	\$0.09
Hamilton (old)	\$0.17	\$0.11	\$0.07
Toronto	\$0.31	\$0.29	\$0.27
Ottawa-Gatineau	\$0.22	\$0.16	\$0.15
Ottawa-Gatineau (no	\$0.22	\$0.16	\$0.18
Montréal	\$0.47	\$0.43	\$0.39
Québec City	\$0.32	\$0.25	\$0.21