

Facility Association Cat 2 Taxi & Limousines Rate Filing

Exhibit - SD # 4

Filed: Nov 5, 2014 Board Secretary: AB

Facility Association - Trend Analysis - Industry - OW Approach

NL - CV
BI

as at: Dec 31, 2012

actual observations:	40
excluded observations:	32
# observations used:	8

Level Options:	Freq	Sev	LC	
At Selected Ultimate Levels	1	R	S	T
At Favourable Levels	2	V	W	X
At Unfavourable Levels	3	Z	AA	AB

MODEL DESCRIPTION Regulator LC avg 4: latest 5 yrs only to second most recent period, excluding highest and lowest by % change

Loss Costs in Loss Costs in: \$1s

Level Selected: 1

At Selected Ultimate Levels

Chart Periods	Exclude Data Point (y)?	Trend Periods based on average accident date where scalar present												Loss Cost Values				% chg	
		Season	All Years	Trend 1				Trend 2				From Valuation	Fitted Model	Fitted Model Residual	Selected Model	Selected Model Residual			
				Scalar 1	Trend 1	Scalar 2	Trend 2	Scalar 3	Trend 3	Scalar 4	Trend 4								
		0	1	0	0	0	0	0	0	0	0	0							
'99H1	Y	1	1993.25	-	-	-	-	-	-	-	-	-	-	217.91	(217.91)	415.92	(415.92)		
'99H2	Y	2	1993.75	-	-	-	-	-	-	-	-	-	-	220.01	(220.01)	412.79	(412.79)		
'99H1	Y	1	1994.25	-	-	-	-	-	-	-	-	-	-	222.13	(222.13)	409.68	(409.68)		
'99H2	Y	2	1994.75	-	-	-	-	-	-	-	-	-	-	224.27	(224.27)	406.60	(406.60)		
'99H1	Y	1	1995.25	-	-	-	-	-	-	-	-	-	-	226.43	(226.43)	403.54	(403.54)		
'99H2	Y	2	1995.75	-	-	-	-	-	-	-	-	-	-	228.61	(228.61)	400.50	(400.50)		
'99H1	Y	1	1996.25	-	-	-	-	-	-	-	-	-	-	230.81	(230.81)	397.49	(397.49)		
'99H2	Y	2	1996.75	-	-	-	-	-	-	-	-	-	-	233.04	(233.04)	394.50	(394.50)		
'97H1	Y	1	1997.25	-	-	-	-	-	-	-	-	-	-	235.28	(235.28)	391.53	(391.53)		
'97H2	Y	2	1997.75	-	-	-	-	-	-	-	-	-	-	237.55	(237.55)	388.58	(388.58)		
'98H1	Y	1	1998.25	-	-	-	-	-	-	-	-	-	180.58	239.84	(59.26)	385.66	(205.08)		
'98H2	Y	2	1998.75	-	-	-	-	-	-	-	-	-	303.54	242.14	61.40	382.75	(79.21)		
'99H1	Y	1	1999.25	-	-	-	-	-	-	-	-	-	329.87	244.48	85.39	379.87	(50.00)	83%	
'99H2	Y	2	1999.75	-	-	-	-	-	-	-	-	-	363.05	246.83	116.22	377.01	(13.96)	20%	
'00H1	Y	1	2000.25	-	-	-	-	-	-	-	-	-	302.89	249.21	53.68	374.18	(71.29)	-8%	
'00H2	Y	2	2000.75	-	-	-	-	-	-	-	-	-	453.77	251.61	202.16	371.36	82.41	25%	
'01H1	Y	1	2001.25	-	-	-	-	-	-	-	-	-	428.08	254.03	174.05	368.56	59.52	41%	
'01H2	Y	2	2001.75	-	-	-	-	-	-	-	-	-	629.01	256.48	372.53	365.79	263.22	99%	
'02H1	Y	1	2002.25	-	-	-	-	-	-	-	-	-	713.39	258.95	454.44	363.04	350.35	67%	
'02H2	Y	2	2002.75	-	-	-	-	-	-	-	-	-	315.24	261.44	53.80	360.30	(43.08)	-50%	
'03H1	Y	1	2003.25	-	-	-	-	-	-	-	-	-	430.12	263.96	166.16	357.59	72.53	-40%	
'03H2	Y	2	2003.75	-	-	-	-	-	-	-	-	-	390.31	266.50	123.81	354.90	35.41	24%	
'04H1	Y	1	2004.25	-	-	-	-	-	-	-	-	-	387.88	269.07	118.81	352.23	35.45	-10%	
'04H2	Y	2	2004.75	-	-	-	-	-	-	-	-	-	252.67	271.66	(8.99)	349.58	(80.91)	-33%	
'05H1	Y	1	2005.25	-	-	-	-	-	-	-	-	-	214.21	274.28	(63.07)	346.95	(135.74)	-46%	
'05H2	Y	2	2005.75	-	-	-	-	-	-	-	-	-	305.53	276.92	28.61	344.34	(38.81)	16%	
'06H1	Y	1	2006.25	-	-	-	-	-	-	-	-	-	285.03	279.59	5.44	341.74	(56.71)	35%	
'06H2	Y	2	2006.75	-	-	-	-	-	-	-	-	-	272.56	282.28	(9.72)	339.17	(66.61)	-11%	
'07H1	Y	1	2007.25	-	-	-	-	-	-	-	-	-	267.68	285.00	(17.32)	336.62	(68.94)	-6%	
'07H2	Y	2	2007.75	-	-	-	-	-	-	-	-	-	448.75	287.74	161.01	334.09	114.66	65%	
'08H1		1	2008.25	-	-	-	-	-	-	-	-	-	340.14	290.51	49.63	331.57	8.57	27%	
'08H2	Y	2	2008.75	-	-	-	-	-	-	-	-	-	302.26	293.31	8.95	329.08	(36.82)	-33%	
'09H1		1	2009.25	-	-	-	-	-	-	-	-	-	251.11	296.14	(45.03)	326.60	(75.49)	-26%	
'09H2		2	2009.75	-	-	-	-	-	-	-	-	-	329.62	298.99	30.63	324.14	5.48	9%	
'10H1		1	2010.25	-	-	-	-	-	-	-	-	-	245.94	301.87	(55.93)	321.70	(75.76)	-2%	
'10H2		2	2010.75	-	-	-	-	-	-	-	-	-	303.59	304.77	(1.18)	319.28	(15.69)	-8%	
'11H1		1	2011.25	-	-	-	-	-	-	-	-	-	257.85	307.71	(49.86)	316.88	(59.03)	5%	
'11H2		2	2011.75	-	-	-	-	-	-	-	-	-	475.19	310.67	164.52	314.49	160.70	57%	
'12H1		1	2012.25	-	-	-	-	-	-	-	-	-	275.50	313.66	(58.16)	312.13	(36.63)	7%	
'12H2	Y	2	2012.75	-	-	-	-	-	-	-	-	-	335.74	316.69	19.05	309.78	25.96	-29%	
'13H1		1	2013.25	-	-	-	-	-	-	-	-	-		319.74		307.44			
'13H2		2	2013.75	-	-	-	-	-	-	-	-	-		322.81		305.13			
'14H1		1	2014.25	-	-	-	-	-	-	-	-	-		325.92		302.83			
'14H2		2	2014.75	-	-	-	-	-	-	-	-	-		329.06		300.55			
'15H1		1	2015.25	-	-	-	-	-	-	-	-	-		332.23		298.29			
'15H2		2	2015.75	-	-	-	-	-	-	-	-	-		335.43		296.05			
'16H1		1	2016.25	-	-	-	-	-	-	-	-	-		338.66		293.82			
'16H2		2	2016.75	-	-	-	-	-	-	-	-	-		341.92		291.61			
'17H1		1	2017.25	-	-	-	-	-	-	-	-	-		345.22		289.41			
'17H2		2	2017.75	-	-	-	-	-	-	-	-	-		348.54		287.23			
'18H1		1	2018.25	-	-	-	-	-	-	-	-	-		351.90		285.07			

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BI
as at: Dec 31, 2012

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excluded observations:	32
# observations used:	8

	Level Options:	Freq	Sev	LC
At Selected Ultimate Levels	1	A	S	T
At Favourable Levels	2	V	W	X
At Unfavourable Levels	3	Z	AA	AB

MODEL DESCRIPTION Regulator LC avg 4: latest 5 yrs only to second most recent period, excluding highest and lowest by % change

FITTED TREND STRUCTURE ANOVA					
	df	SS	MS	F	Significance F
Regression	1	0.0046	0.0046	0.0827	0.7833
Residual	6	0.3323	0.0554		
Total	7	0.3369			

FITTED TREND STRUCTURE REGRESSION STATISTICS						
Multiple R	R2	Adjusted R2	S.E. of Estimate	# of Obs. n	# of Obs. Excluded	k
0.1166	0.0135	(0.1508)	0.2353	8	32	2

Runs-Test Result: 4.4387 RESIDUALS RUNS NOT RANDOM

parameters with p-value >5%: 2

Coefficients	S.E.	t-Stat	p-value	C.I. Lower	C.I. Upper	Selected Coeff.
Intercept	(32.825)	-	100.0%	(32.825)	(32.825)	96.149
Season	-	-	n/a	-	-	10
All Years	0.019	-	100.0%	0.019	0.019	(0.015)
Scalar 1	-	-	n/a	-	-	8
Trend 1	-	-	n/a	-	-	7
Scalar 2	-	-	n/a	-	-	6
Trend 2	-	-	n/a	-	-	5
Scalar 3	-	-	n/a	-	-	4
Trend 3	-	-	n/a	-	-	3
Scalar 4	-	-	n/a	-	-	2
Trend 4	-	-	n/a	-	-	1

Trends are Annual use "All Years" to match trend; use "Intercept" to match average values

SELECTED TREND STRUCTURE ANOVA					
	df	SS	MS	F	Significance F
Regression	1	(0.0363)	(0.0363)	(0.5830)	#NUM!
Residual	6	0.3731	0.0622		
Total	7	0.3969			

SELECTED TREND STRUCTURE REGRESSION STATISTICS						
Multiple R	R2	Adjusted R2	S.E. of Estimate	# of Obs. n	# of Obs. Excluded	k
#NUM!	(0.1076)	(0.2922)	0.2494	8	32	2

Runs-Test Result: 4.0731 RESIDUALS RUNS NOT RANDOM

	Fitted Annual	Previous Selected	Selected Annual	selected does NOT equal fitted
past	1.9%	(2.9%)	(1.9%)	'12H2 => last period in "past"
future	1.9%	(2.9%)	(1.5%)	

WHERE SELECTED MODEL COEFFICIENTS ARE TO BE FITTED MANUALLY:

Option 1: set so that averages for selected model = actuals over the period
avg NOT USED
From Valuation - '07:H2 to '12:H1 323.00 actual values
Selected Model - '07:H2 to '12:H1 323.00 selected model values
diff: - if used, adjust scalar to make diff zero

Option 2: set to minimize mean square error (MSE)
MSE: 0.0622 NOT USED

