

Ken Ng

From: Craig Nicholson
Sent: Thursday, 16 January 2020 8:37 am
To: section 9(2)(a)
Subject: Info for meeting this morning
Attachments: Te Ahu a Turanga - Tolling Assessment - NZTA EEM Travel Time Time Cost (WTP) Calcs.xlsx

Hi section 9(2)(a)

For our discussion this morning, there are three things I'd like to discuss:

- Willingness to pay values;
- Assessment years; and
- Toll transaction cost.

Willingness to Pay

We had discussed using the standard EEM value of time as the average willingness to pay value.

The **attached** spreadsheet provides the standard EEM "travel time value" calculations, using the standard traffic mix, vehicle occupancy, percentages working, etc for "Rural Strategic" roads. I have then broken it down into "light vehicles" and "heavy vehicles" (using the standard percentage composition figures) to calculate an average Value of Time (VoT) for light and heavy vehicles. The figures are \$20.64 and \$42.42 respectively, although it may be appropriate to only use the vehicle occupant time cost (i.e. to exclude the "Vehicle and freight time" cost. Doing so would reduce the two costs to \$20.00 and \$25.32 respectively. What do you think?

By comparison, the table below shows the VoT's used in the toll modelling for Transmission Gully, which used 10 different user classes for light vehicles, plus another three user classes for heavy vehicles:

	User Class	Description	2006 VoT	2016 VoT	2026 VoT
Light Vehicles	1	Other1	\$6.40	\$7.50	\$8.80
	2	Other2	\$6.90	\$8.10	\$9.50
	3	HBW1 & Other3	\$8.20	\$9.60	\$11.20
	4	HBW2 & Other4	\$9.20	\$10.70	\$12.60
	5	HBW3 & Other5	\$10.70	\$12.60	\$14.70
	6	HBW4	\$12.10	\$14.20	\$16.70
	7	Other6	\$13.60	\$16.00	\$18.70
	8	HBW5	\$14.30	\$16.80	\$19.70
	9	HBW6	\$17.60	\$20.70	\$24.30
	10	EB	\$30.00	\$36.60	\$44.60
	LV Range		\$6.40 - \$30.00	\$7.50 - \$36.60	\$8.80 - \$44.60
Heavy Veh	Scale Factor	Maximum/Minimum	4.7	4.9	5.1
	11	HCV1	\$17.00	\$20.70	\$23.40
	12	HCV2	\$25.00	\$30.50	\$34.30
	13	HCV3	\$33.00	\$40.20	\$45.30
	HV Range		\$17.00 - \$33.00	\$20.70 - \$40.20	23.40 - \$45.30
	Scale Factor	Maximum/Minimum	1.94	1.94	1.94

The EEM calculated VoT figure for light vehicles matches the mid-points of the TG VoT range fairly well, although the EEM value for heavy vehicles is at or above the top of the TG range.

The VoT ranges for TG are approximately +/- 67% from the mid-point for light vehicles, and +/- 33% for heavy vehicles. I have assumed those percentage ranges will be reasonable for the VoT range for Te Ahu a Turanga,

I'd really just like to confirm you're comfortable with the values I've calculated and to discuss how to "grow" the WTP figures for the 2025 and future year analyses.

Assessment Years

WSP-Opus assessed a 2016 "base year" and 2041 "future year", being 25-years later.

I can't see any value in assessing 2016, so I assume an assessment for 2025 (i.e. first year of operation) would be more useful.

For future year, do you want me to assess 2041 (to be consistent with the WSP-Opus analysis), or perhaps 2045 (20 years after opening) or something else? It's no big deal to do more than one future year if you wish.

Toll Transaction Costs

I have set up the spreadsheet to produce annual gross and nett revenue curves (plotting annual revenue against toll rate), assuming a \$0.65 per vehicle transaction cost, which I believe is what was used for TG. However, I seem to recall someone (perhaps you or section 9(2)(a)) suggesting a \$0.50 transaction cost, so I'm happy to use that if it's more appropriate. Can you advise?

Talk to you at 10:30am.

Craig