

March 11, 2024

Emil,

I have long been under the impression that surface street capacity will be the limiting factor for development in Bellevue. After hearing Mariya's testimony to both the Transportation Commission and City Council this past month, I am even more concerned that the transportation network may not continue to meet Bellevue's needs. She graciously shared the spreadsheet of potential delays based on the v/c ratios that was generated by the traffic engineer she's working with, and I compared this with the FEIS Chapter 11 numbers and Appendix K.

The first thing that seemed surprising with this comparison is the difference in performance predicted by the v/c ratios and that shown in FEIS Table 11-35 for the segment just south of NE 12th St. and 116th Ave NE. Table 11-35 predicts a decrease in performance from 8 mph to 6 mph from the No Action Alternative to the Preferred Alternative (Note: This is between NE 12th and Main Street, but is only valid in the southbound direction; traveling north would be significantly slower because NE 12th is predicted to have a far worse v/c ratio than the intersection at Main St. The appendices also show that the 6 mph listed is rounded up from 5.54 mph).

Given the v/c ratios I received from Mariya, I added up the delays experienced at each intersection along this 0.89 mile segment:

Intersections with 116th Ave NE	V/C with Preferred Alternative (Table 11-37)	Conversion to delays from Mariya's spreadsheet	V/C with Preferred A Alternative (Table 11-37)	Conversion to delays from Mariya's spreadsheet
NE 8th St	1.32	6:15	1.52	(13:02)
NE 6th St	1.26	4:56	1.26	4:56
NE 4th St	1.48	11:19	1.49	(11:44)
Main Street	1.03	1:49	1.01	1:39

These delays total 24:19 for the Preferred Alternative and 31:21 for Preferred A Alt. When expressed as a speed to match Table 11-35, these are 2.2 mph and 1.7 mph respectively, which is a meaningful decrease from the 5.54 mph (rounded to 6 mph) predicted by the FEIS. I have identified some values in the table above in parentheses where I did the calculation myself to match the numbers in her spreadsheet.

Could you please share how the City is calculating the projected speeds for the segments in Table 11-35? Does the model input a minimum speed, maximum delay, or remove vehicles that are blocked and don't move for x amount of time? What other inputs are used? Any clarity you can provide on the calculation and assumptions used for Table 11-35 would be appreciated.

This also seems internally inconsistent in ways which make me suspect calculation errors:

Page 15 of 917 (in the FEIS Appendices document) shows Preferred Alternative A post-processed speed is 5.55mph, slightly faster than the Preferred Alternative (Page 14). (2044 and 2044 A in Appendix K are also very similar to each other). This does not seem reasonable if v/c for 116th Ave NE and NE 8th St worsens significantly with Alt A, from 1.32 to 1.52 (Table 11-37) and the other intersection delays along 116th Ave NE are similar between the two alternatives.

Pages 14 and 15 actually show faster travel speeds in the NB/EB post-processed speed column: 12.18 mph (Preferred Alt) and 12:31 (Preferred A Alt). This is impossible for me to reconcile with the extreme slowdowns expected as cars approach NE 12th St., which will lead to corridor travel speeds <0.5 mph if the delays from Mariya's spreadsheet are added together.

Intersections with 116th Ave NE	V/C with Preferred Alternative (Table 11-37)	Conversion to delays from Mariya's spreadsheet	V/C with Preferred A Alternative (Table 11-37)	Conversion to delays from Mariya's spreadsheet
NE 12th St	2:24	1:45:36	2:20	(1:35:38)
Main Street	1.03	00:01:49	1.01	00:01:39

I also have questions about page 23 of 917 in the appendices, since no units are specified for the Network Length values (which range from 516-523). Since it doesn't line up with my understanding of Bellevue roadway lengths, my best guess is that these are the lane-miles size of the arterial network used for the model, and that it extends beyond Bellevue city limits. Can you clarify whether that is correct, and clarify how many hours the PM peak period is assumed to be (also on page 23)?

Bellevue roadways:

Total Local Centerline Miles - 136

Total Arterial Centerline Mile - 280.3

Total Local Lane-Mile - 672

Total Arterial Lane-Mile - 444

If our model does include sections of roadway outside Bellevue, are we also including expected increases in density that are being planned by neighboring municipalities when we consider our likely transportation network performance? I am primarily concerned about density that has been proposed by Redmond and how it would affect the Bel-Red Road and NE 20th Street areas.

Sincerely,

Nicole Myers