



Transportation Commission

DATE: September 20, 2018

TO: Chair Wu and Members of the Transportation Commission

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SUBJECT: 2018 Concurrency Update

DIRECTION REQUESTED

<input type="checkbox"/>	Action
<input checked="" type="checkbox"/>	Discussion
<input checked="" type="checkbox"/>	Information

This agenda item provides a briefing to the Commission on the update of the 2018 Transportation Concurrency Report. Staff will present the findings, through modeling and analysis, how the transportation system performs under the existing condition and in six years after the presently approved developments and the CIP projects are implemented.

BACKGROUND

The Washington State Growth Management Act (GMA) of 1990 requires that local jurisdictions adopt ordinances to establish *concurrency* measurement mechanisms to determine the ability of the transportation system to support new development. The City of Bellevue's adopted Traffic Standards Code (Bellevue City Code Chapter 14.10) establishes the City's transportation concurrency standards and methodologies, and compliance determination process.

The City's Traffic Standard Code divides the city into 14 mobility management areas (MMA). Within each MMA, there are number of designated intersections called system intersections where performance measures need to be calculated and reported. The MMA boundaries and system intersections are shown on the map below.

Figure 1 Mobility Management Areas (MMA) and System Intersections

Table 1 Concurrency Standards for Mobility Management Areas

MMA		Concurrency Standard	
		V/C Ratio	Congestion Allowance
1	North Bellevue	0.85	3
2	Bridle Trails	0.80	4
3	Downtown	0.95	9
4	Wilburton	0.90	3
5	Crossroads	0.90	2
6	Northeast Bellevue	0.80	2
7	South Bellevue	0.85	4
8	Richards Valley	0.85	5
9	East Bellevue	0.85	5
10	Eastgate	0.90	4
11	Southeast Bellevue	0.80	3
12	BelRed/Northup	0.95	7
13	Factoria	0.95	5
14	Newport Hills*	-	-

**There are no system intersections in MMA 14 and, therefore, no standards*

Source: Bellevue City Code 14.10.030

The Director's Rule of 2011 further provides the general methodologies and procedure for calculating these two performance measures. Following the Director's Rule, the department performs periodic updates to provide a snapshot of the latest transportation system performance findings to inform land use and transportation decision-making. This update, as was the case in the past, analyzed two scenarios:

2017 Existing Condition represents the observed 2017 or latest traffic counts and existing roadway and intersection geometries and signal phasing.

2018 Concurrency Platform assumes the approved land use developments and the 2017-2023 Capital Improvement Program (CIP) projects are in place. It forms the basis for conducting future project level concurrency analysis.

INFORMATION

Model analysis indicates that the 6-year CIP projects are expected to be able to accommodate the increased demand associated with new development approved through December 31, 2017. All Mobility Management Areas (MMAs) meet their congestion allowance, and all MMAs are within the average volume to capacity (V/C) ratios allowed. Table 2 below summarizes the analysis results.

Table 2 Concurrency Summary by MMA

MMA		Concurrency Standard		2017 Existing Condition				2018 Concurrency Platform			
		V/C Ratio	Congestion Allowance	V/C Ratio Test		Congestion Allowance Test		V/C Ratio Test		Congestion Allowance Test	
				V/C Ratio	Standard Met?	No of Intersections Below the Standard	Standard Met?	V/C Ratio	Standard Met?	No of Intersections Below the Standard	Standard Met?
1	North Bellevue	0.85	3	0.53	Yes	0	Yes	0.53	Yes	0	Yes
2	Bridle Trails	0.80	4	0.67	Yes	2	Yes	0.67	Yes	2	Yes
3	Downtown	0.95	9	0.72	Yes	3	Yes	0.74	Yes	3	Yes
4	Wilburton	0.90	3	0.72	Yes	0	Yes	0.73	Yes	0	Yes
5	Crossroads	0.90	2	0.72	Yes	0	Yes	0.74	Yes	0	Yes
6	N-E Bellevue	0.80	2	0.72	Yes	0	Yes	0.72	Yes	0	Yes
7	South Bellevue	0.85	4	0.68	Yes	0	Yes	0.70	Yes	0	Yes
8	Richards Valley	0.85	5	0.69	Yes	2	Yes	0.71	Yes	2	Yes
9	East Bellevue	0.85	5	0.81	Yes	4	Yes	0.81	Yes	4	Yes
10	Eastgate	0.90	4	0.72	Yes	2	Yes	0.68	Yes	2	Yes
11	S-E Bellevue	0.80	3	0.75	Yes	3	Yes	0.71	Yes	2	Yes
12	Bel-Red/Northup	0.95	7	0.68	Yes	0	Yes	0.73	Yes	0	Yes
13	Factoria	0.95	5	0.82	Yes	2	Yes	0.85	Yes	2	Yes
14	Newport Hills*	-	-	-	-	-	-	-	-	-	-

* There are no system intersections in MMA 14 and, therefore, no standards

Average V/C Ratios Analysis Findings by MMA

Under 2017 existing conditions, the V/C ratios for individual MMAs ranged from 0.53 (MMA 1 – North Bellevue) to 0.82 (MMA 13 – Factoria). The average remaining capacity ranged from 0.04 (MMA 9 – East Bellevue) to 0.32 (MMA 1 – North Bellevue). Remaining capacity is the capacity available for accommodating future development without exceeding the concurrency standard; it is the difference between calculated V/C ratio and V/C ratio standard. Under the 2018 Concurrency Platform with the funded vehicle capacity projects completed and approved land use developments in place, the V/C ratios for individual MMAs range from 0.53 (MMA 1 - North Bellevue) to 0.85 (Factoria). The analysis indicated that all MMAs meet their respective V/C ratio standard.

Intersection Congestion Allowance Analysis Findings by MMA

The V/C ratio analysis for individual system intersections by MMA for the two scenarios are shown in the table below. Based on the analysis result, each intersection is then subjected to the test of “does it meet the standard?” The answers are “yes”, “barely”, or “no”, defined as follows:

Yes: Intersection with a V/C ratio of at least 0.05 from exceeding the standard threshold

Barely: Intersection with a V/C ratio lower than but within 0.05 of the standard threshold
No: Intersection with a V/C ratio that exceeds the standard threshold

Under 2017 existing conditions, the total number of intersections that do not meet the MMA V/C standard test is 18, compared to the total 56 congestion allowances for all MMAs.

Under the 2018 CP, with the CIP completed and approved development in place, all MMAs meet their respective congestion allowance standards. The number of intersections that do not meet the standard test is expected to be 17, drop by one, thanks to the CIP projects.

- North Bellevue (MMA 1): Under the 2017 existing condition, all four system intersections met the standard. This is not expected to change under the 2018 CP.
- Bridle Trails (MMA 2): In 2017, two intersections did not meet the V/C standard. Under the 2018 CP, the number of intersections that do not meet the standard is expected to remain at two, within the four allowed.
- Downtown Bellevue (MMA 3): Under the 2017 existing condition, three of the 13 system intersections did not meet the V/C standard. This number is expected to remain unchanged under the 2018 CP, within the nine allowed.
- Wilburton (MMA 4): All five system intersections met the standard in 2017. All intersections are expected to meet the standard under the 2018 CP.
- Crossroads (MMA 5): In 2017, all three system intersections met the standard. One intersection is expected to approach the MMA's V/C standard under the 2018 CP.
- North-East Bellevue (MMA 6): All the system intersections met the standard under existing conditions. The analysis revealed no major change under the 2018 CP.
- South Bellevue (MMA 7): All five system intersections met the standard in 2017. No major change is expected under the 2018 CP.
- Richards Valley (MMA 8): Under the existing condition, two of the nine system intersections did not meet the standard. Very little change is projected from 2017 to 2023. The number of intersections that do not meet the standard is expected to remain at two, within the five allowed.
- East Bellevue (MMA 9): Of all the MMAs, this MMA has the smallest cushion between the calculated V/C and the standard. Under existing conditions, the MMA's average V/C ratio is 0.81 compared to the standard of 0.85; the number of intersections that do not meet the standard is four, within the maximum five allowed. Under the 2018 CP, the number of intersections that do not meet the standard is expected to remain at four

and the average V/C ratio is expected to remain stable at 0.81 This MMA should be closely monitored in future development reviews.

- Eastgate (MMA 10): The number of intersections that do not meet the V/C standard is two under both existing conditions and the 2018 CP. Under the 2018 CP, the completion of the auxiliary lane project on I-90 between Eastgate and Issaquah is expected to improve traffic operations in this MMA, particularly along Eastgate Way at 150th Ave SE and at 156th Ave SE.
- Southeast Bellevue (MMA 11): Under the 2017 existing condition, the analysis revealed three system intersections did not meet the V/C standard, the maximum allowed. Under the 2018 CP, this number is reduced to two, thanks to the expected completion of the I-90 Auxiliary Lane Project funded by WSDOT.
- Bel-Red (MMA 12): Under both the 2017 existing condition and 2018 CP, all the system intersections met the standard. This MMA gets significant shares of both new development and new capacity projects. The completion of Spring Blvd Phase 1 and 2 is expected to improve traffic operations at some intersections. Compounded with additional developments, it will also draw more traffic to some existing intersections. Consequently, four system intersections are expected to approach the V/C standard.
- Factoria (MMA 13): Of all the MMAs, Factoria has the highest average V/C ratios, 0.82 and 0.85 under both existing conditions and 2018 CP respectively. Under the 2017 existing condition, two intersections did not meet the standard. This is expected to remain under the 2018 CP, within the congestion allowance of five.
- Newport Hills (MMA 14): No designated system intersections.

Table 3 Intersection Analysis by MMA

MMA 1: North Bellevue, V/C Threshold: 0.85, Congestion Allowance: 3

Intersection			2017 Existing		2018 CP	
ID#	Cross Streets		V/C	Standard Met?	V/C	Standard Met?
69	Bellevue Way NE	NE 24th Street	0.56	Yes	0.56	Yes
74	Bellevue Way NE	Northup Way NE	0.63	Yes	0.63	Yes
78	108th Ave NE	Northup Way NE	0.62	Yes	0.62	Yes
93	Lk Washington B	NE 1st/NE 10 St.	0.32	Yes	0.31	Yes
Areawide			0.53	Yes	0.53	Yes

MMA 2: Bridle Trails, V/C Threshold: 0.80, Congestion Allowance: 4

Intersection			2017 Existing		2018 CP	
ID#	Cross Streets		V/C	Standard Met?	V/C	Standard Met?
64	140th Ave NE	NE 24th Street	0.79	Barely	0.83	No
79	148th Ave NE	NE 40th Street	0.65	Yes	0.67	Yes
114	116th Ave NE	Northup Way NE	0.74	Yes	0.66	Yes
116	115th Place NE	Northup Way	0.81	No	0.75	Yes
118	Northup Way	NE 24th Street	0.52	Yes	0.53	Yes
123	140th Ave NE	NE 40th Street	-	-	-	-
188	148th Ave NE	NE 29th Place	0.85	No	0.87	No
189	NE 29th Place	NE 24th Street	0.36	Yes	0.36	Yes
Areawide			0.67	Yes	0.67	Yes

MMA 3: Downtown, V/C Threshold: 0.95, Congesiton Allowance : 9

Intersection			2017 Existing		2018 CP	
ID#	Cross Streets		V/C	Standard Met?	V/C	Standard Met?
3	100th Ave NE	NE 8th Street	0.64	Yes	0.62	Yes
5	Bellevue Way NE	NE 12th Street	0.70	Yes	0.71	Yes
7	Bellevue Way NE	NE 8th Street	0.78	Yes	0.76	Yes
8	Bellevue Way NE	NE 4th Street	0.69	Yes	0.72	Yes
9	Bellevue Way	Main Street	0.96	No	1.00	No
20	108th Ave NE	NE 12th Street	0.45	Yes	0.47	Yes
21	108th Ave NE	NE 8th Street	0.61	Yes	0.58	Yes
22	108th Ave NE	NE 4th Street	0.68	Yes	0.77	Yes
24	108th Ave	Main Street	0.52	Yes	0.51	Yes
25	112th Ave NE	NE 12th Street	0.74	Yes	0.77	Yes
26	112th Ave NE	NE 8th Street	1.05	No	1.07	No
36	112th Ave	Main Street	0.98	No	1.02	No
72	112th Ave NE	NE 4th Street	0.67	Yes	0.64	Yes
Areawide			0.72	Yes	0.74	Yes

Note: Dashed mark indicates unsignalized intersection, which is not included in the calculations.

Table 3 Intersection Analysis by MMA, Cont'd

MMA 4: Wilburton, V/C Threshold: 0.90, Congestion Allowance: 3

Intersection			2017 Existing		2018 CP	
ID#	Cross Streets		V/C	Standard Met?	V/C	Standard Met?
30	116th Ave NE	NE 8th Street	0.71	Yes	0.68	Yes
73	116th Ave	Main Street	0.65	Yes	0.66	Yes
131	116th Ave SE	SE 1st Street	0.80	Yes	0.82	Yes
139	116th Ave NE	NE 4th Street	0.82	Yes	0.87	Barely
233	120th Ave NE	NE 8th Street	0.62	Yes	0.61	Yes
Areawide			0.72	Yes	0.73	Yes

MMA 5: Crossroads, V/C Threshold: 0.90, Congestion Allowance: 2

Intersection			2017 Existing		2018 CP	
ID#	Cross Streets		V/C	Standard Met?	V/C	Standard Met?
58	Bel-Red Rd	NE 20th Street	0.62	Yes	0.65	Yes
62	156th Ave NE	Northup Way	0.83	Yes	0.86	Barely
63	156th Ave NE	NE 8th Street	0.70	Yes	0.70	Yes
Areawide			0.72	Yes	0.74	Yes

MMA 6: North-East Bellevue, V/C Threshold: 0.80, Congestion Allowance: 2

Intersection			2017 Existing		2018 CP	
ID#	Cross Streets		V/C	Standard Met?	V/C	Standard Met?
75	164th Ave NE	NE 24th Street	0.70	Yes	0.70	Yes
76	164th Ave NE	Northup Way	0.72	Yes	0.71	Yes
87	164th Ave NE	NE 8th Street	0.74	Yes	0.75	Yes
111	Northup Way	NE 8th Street	-	-	-	-
Areawide			0.72	Yes	0.72	Yes

MMA 7: South Bellevue, V/C Threshold: 0.85, Congestion Allowance: 4

Intersection			2017 Existing		2018 CP	
ID#	Cross Streets		V/C	Standard Met?	V/C	Standard Met?
14	112th Ave SE	Bellevue Way SE	0.77	Yes	0.71	Yes
89	112th Ave SE	SE 8th Street	0.64	Yes	0.60	Yes
102	118th Ave SE	SE 8th Street	0.76	Yes	0.81	Barely
219	I-405 NB Ramps	SE 8th Street	0.63	Yes	0.72	Yes
226	I-405 SB Ramps	SE 8th Street	0.59	Yes	0.63	Yes
Areawide			0.68	Yes	0.70	Yes

Table 3 Intersection Analysis by MMA Cont'd

MMA 8: Richards Valley, V/C Threshold: 0.85, Congestion Allowance: 5

Intersection			2017 Existing		2018 CP	
ID#	Cross Streets		V/C	Standard Met?	V/C	Standard Met?
35	124th Ave NE	NE 8th Street	0.62	Yes	0.67	Yes
43	140th Ave SE	SE 8th Street	0.76	Yes	0.79	Yes
44	145th Place SE	Lake Hills Blvd	0.64	Yes	0.65	Yes
45	145th Place SE	SE 16th Street	0.69	Yes	0.71	Yes
71	Lk Hills Connector	SE 8th St	0.94	No	0.96	No
82	Richards Rd	Kamber Rd	0.87	No	0.87	No
85	Richards Rd	SE 32nd Street	0.51	Yes	0.56	Yes
134	Richards Rd	Lk Hills Connector	0.60	Yes	0.59	Yes
280	139th Ave SE	Kamber Road	0.59	Yes	0.58	Yes
Areawide			0.69	Yes	0.71	Yes

MMA 9: East Bellevue, V/C Threshold: 0.85, Congestion Allowance: 5

Intersection			2017 Existing		2018 CP	
ID#	Cross Streets		V/C	Standard Met?	V/C	Standard Met?
41	140th Ave NE	NE 8th Street	0.79	Yes	0.79	Yes
42	140th Ave	Main Street	0.63	Yes	0.63	Yes
49	148th Ave NE	NE 8th Street	0.94	No	0.96	No
50	148th Ave	Main Street	0.91	No	0.91	No
51	148th Ave SE	Lake Hills Blvd	0.85	No	0.86	No
52	148th Ave SE	SE 16th Street	0.87	No	0.87	No
55	148th Ave SE	SE 24th Street	0.77	Yes	0.74	Yes
65	148th Ave SE	SE 8th Street	0.74	Yes	0.74	Yes
83	156th Ave	Main Street	0.76	Yes	0.76	Yes
Areawide			0.81	Yes	0.81	Yes

MMA 10: Eastgate, V/C Threshold: 0.90, Congestion Allowance: 4

Intersection			2017 Existing		2018 CP	
ID#	Cross Streets		V/C	Standard Met?	V/C	Standard Met?
56	148th Ave SE	SE 27th Street	0.67	Yes	0.64	Yes
86	156th Ave SE	SE Eastgate Way	0.59	Yes	0.44	Yes
92	161st Ave SE	SE Eastgate Way	0.46	Yes	0.54	Yes
101	150th Ave SE	SE Eastgate Way	1.06	No	0.95	No
171	142nd Ave SE	SE 36th Street	0.80	Yes	0.80	Yes
227	150th Ave SE	I-90 EB Off-Ramp	1.01	No	0.99	No
272	139th Ave SE	SE Eastgate Way	0.45	Yes	0.43	Yes
Areawide			0.72	Yes	0.68	Yes

Table 3 Intersection Analysis by MMA Cont'd

MMA 11: Southeast Bellevue, V/C Threshold: 0.80, Congestion Allowance: 3

Intersection			2017 Existing		2018 CP	
ID#	Cross Streets		V/C	Standard Met?	V/C	Standard Met?
99	Somerset Blvd	SE Newport Way	0.60	Yes	0.64	Yes
133	150th Ave SE	SE Newport Way	0.96	No	0.94	No
174	150th Ave SE	SE 38th Street	1.02	No	1.05	No
218	Lakemont Blvd	SE 63rd St	0.66	Yes	0.65	Yes
228	Lakemont Blvd	SE Newport Way	0.83	No	0.62	Yes
242	164th Ave SE	Lakemont Blvd	0.68	Yes	0.63	Yes
257	164th Ave SE	SE Newport Way	-	-	-	-
274	Village Park Dr	Lakemont Blvd	0.55	Yes	0.46	Yes
Areawide			0.75	Yes	0.71	Yes

MMA 12: Bel-Red/Northup, V/C Threshold: 0.95, Congestion Allowance: 7

Intersection			2017 Existing		2018 CP	
ID#	Cross Streets		V/C	Standard Met?	V/C	Standard Met?
29	116th Ave NE	NE 12th Street	0.69	Yes	0.91	Barely
32	120th Ave NE	NE 12th Street	0.55	Yes	0.66	Yes
34	124th Ave NE	Bel-Red Rd	0.79	Yes	0.71	Yes
37	130th Ave NE	Bel-Red Rd	0.58	Yes	0.61	Yes
39	140th Ave NE	NE 20th Street	0.67	Yes	0.70	Yes
40	140th Ave NE	Bel-Red Rd	0.69	Yes	0.64	Yes
47	148th Ave NE	NE 20th Street	0.88	Yes	0.91	Barely
48	148th Ave NE	Bel-Red Rd	0.89	Yes	0.90	Barely
59	Bel-Red Rd	NE 24th Street	0.64	Yes	0.65	Yes
60	156th Ave NE	Bel-Red Rd	0.74	Yes	0.76	Yes
61	156th Ave NE	NE 24th Street	0.80	Yes	0.84	Yes
68	130th Ave NE	NE 20th Street	0.60	Yes	0.71	Yes
81	148th Ave NE	NE 24th Street	0.89	Yes	0.91	Barely
88	124th Ave NE	Northup Way NE	0.58	Yes	0.66	Yes
117	120th Ave NE	NE 20th Street	0.31	Yes	0.33	Yes
Areawide			0.68	Yes	0.73	Yes

MMA 13: Factoria, V/C Threshold: 0.95, Congestion Allowance: 5

Intersection			2017 Existing		2018 CP	
ID#	Cross Streets		V/C	Standard Met?	V/C	Standard Met?
98	Coal Creek Pkwy	Forest Drive	0.86	Yes	0.88	Yes
105	Richards Rd	SE Eastgate Way	0.67	Yes	0.67	Yes
202	128th Ave SE/Ne	SE Newport Way	0.74	Yes	0.82	Yes
203	Factoria Blvd.	Coal Creek Pkwy	0.73	Yes	0.75	Yes
204	128th Ave SE	SE 36th Street	1.04	No	1.06	No
220	I-405 NB Ramps	Coal Creek Pkwy	0.68	Yes	0.69	Yes
221	I-405 SB Ramps	Coal Creek Pkwy	0.78	Yes	0.80	Yes
222	128th Ave SE	SE 38th Place	1.08	No	1.08	No
284	124th Ave SE	Coal Creek Pkwy	0.83	Yes	0.89	Yes
Areawide			0.82	Yes	0.85	Yes

Figure 2. 2017 Existing Condition (PM Peak) System Intersection Assessment

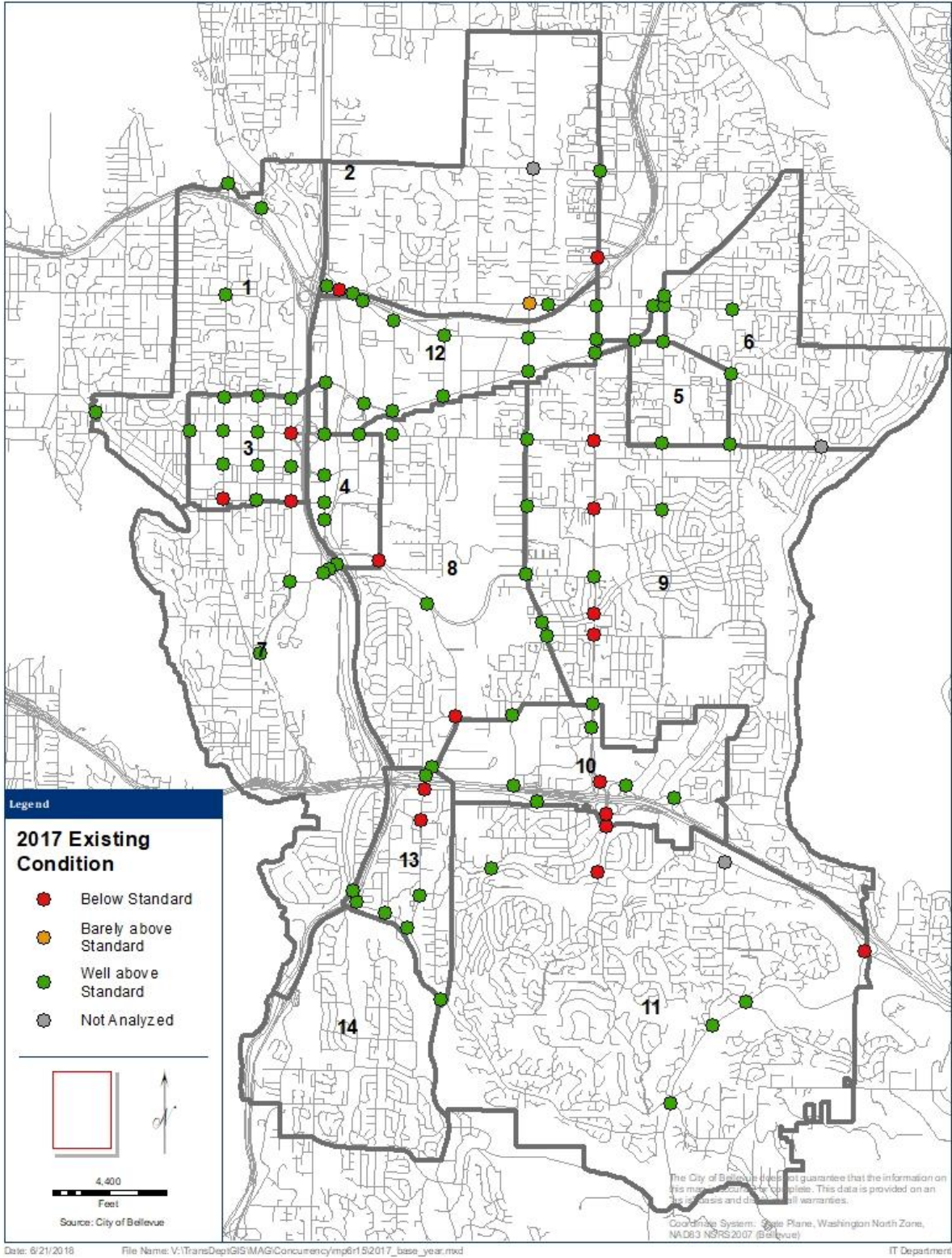
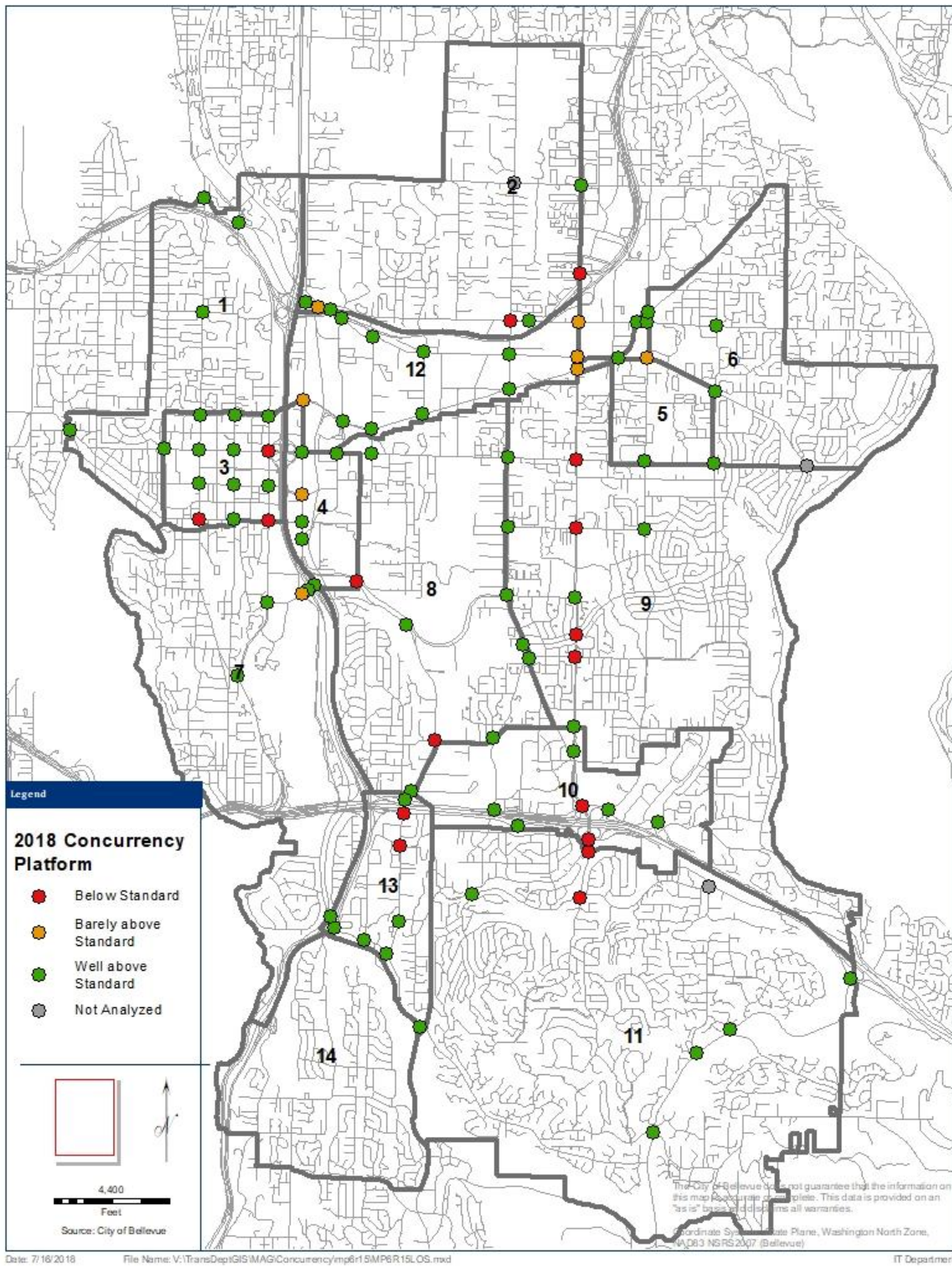


Figure 3. 2018 CP (PM Peak) System Intersection Assessment



Figures 2 and 3 depict the system intersection analysis results for the 2017 existing condition and the 2018 Concurrency Platform. Intersections that do not meet the concurrency standard (with V/C ratios exceeding the respective MMA V/C threshold) are shown in red. Intersections that barely meet the concurrency standard (with calculated V/C ratios lower than but within 0.05 of the V/C standard) are shown in orange. The remaining System Intersections are shown in green, indicating they meet their respective MMA's concurrency standard.

Findings and Conclusions

The funded 2017-2023 six-year CIP projects are expected to be able to accommodate the increased vehicle travel demand associated with new development permitted through December 31, 2017. All MMAs meet their congestion allowance and all MMAs are within the average V/C ratios allowed by the concurrency standard.

NEXT STEP:

Following the release of this Concurrency Update Report, the 2018 Concurrency Platform (2018 CP; model version MP6-R15) will be used as the background condition for project-level development review modeling until a new concurrency update is completed.