City of Bellevue
Transportation Department
Modeling and Analysis Group

Concurrency Update Report

Performance Snapshot

December 31st, 2014

Prepared April 2015

Executive Summary

Model analysis indicates that, citywide, the 2015-2021 Capital Improvement Program (CIP) projects are able to accommodate the increased demand associated with new development approved through December 31, 2014. All Mobility Management Areas (MMAs) meet their congestion allowance (number of intersections over the standard). All MMAs are within the average volume-to-capacity (V/C) ratios allowed as well.

In the 2013 Concurrency Report, the Newcastle MMA (11) was found to be close to falling below the concurrency standard. In this update, the traffic condition for the MMA is improved, largely attributed to signalization improvement at the 164th Avenue SE and Lakemont Boulevard intersection.

Concurrency Summary by MMA

MMA	Concurrency Standard		2014 Existing Condition				2015 Concurrency Platform			
			V/C Ratio Test		Congestion Allowance Test		V/C Ratio Test		Congestion Allowance Test	
	V/C Ratio	Congestion Allowance	V/C Ratio	Standard Met?	No of Intersections Exceeding the V/C Ratio	Standard Met?	V/C Ratio	Standard Met?	No of Intersections Exceeding the V/C Ratio	Standard Met?
1 North Bellevue	0.85	3	0.48	Yes	0	Yes	0.49	Yes	0	Yes
2 Bridle Trails	0.80	4	0.65	Yes	1	Yes	0.63	Yes	1	Yes
3 Downtown	0.95	9	0.65	Yes	1	Yes	0.72	Yes	1	Yes
4 Wilburton	0.90	3	0.68	Yes	0	Yes	0.73	Yes	1	Yes
5 Crossroads	0.90	2	0.62	Yes	0	Yes	0.63	Yes	0	Yes
6 N-E Bellevue	0.80	2	0.63	Yes	0	Yes	0.64	Yes	0	Yes
7 South Bellevue	0.85	4	0.65	Yes	0	Yes	0.65	Yes	0	Yes
8 Richards Valley	0.85	5	0.61	Yes	0	Yes	0.63	Yes	0	Yes
9 East Bellevue	0.85	5	0.74	Yes	2	Yes	0.77	Yes	2	Yes
10 Eastgate	0.90	4	0.65	Yes	0	Yes	0.65	Yes	0	Yes
11 Newcastle	0.80	3	0.74	Yes	0	Yes	0.66	Yes	0	Yes
12 Bel-Red/Northup	0.95	7	0.67	Yes	0	Yes	0.70	Yes	0	Yes
13 Factoria	0.95	5	0.80	Yes	1	Yes	0.81	Yes	1	Yes

Following the release of this Concurrency Update Report, the 2015 Concurrency Platform (2015 CP; model version MP6-R12) will be used as the background condition for project-level development review modeling until a new concurrency update is completed. The 2015 CP includes existing development plus the development approved through December 31, 2014 and the 2015-2021 CIP projects.

Introduction

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 Director's Rule of 2011 further defines the specifications of this procedure.

An assessment of transportation concurrency is prepared periodically by the Bellevue Transportation Department to update information on land use developments and transportation conditions within the City. The primary objective is to provide a snapshot of the latest transportation system performance findings to inform land use and transportation decision-making. In addition, the concurrency report is used to identify problem areas so that traffic mitigation options can be explored and identified to effectively accommodate changing conditions.

This report summarizes concurrency analysis results for two scenarios:

2014 Existing Condition represents the observed 2014 or latest traffic counts and existing roadway and intersection geometries.

2015 Concurrency Platform includes existing land use plus approved developments with the CIP in place. It forms the basis for conducting future project level concurrency analysis. The Platform includes:

- existing land use information extracted from the King County Tax Assessor's Office as of December 31, 2013;
- approved developments that had received either design review approvals or building permits issued by the City of Bellevue Development Services Department (DSD) as of December 31, 2014; and
- 2014 existing roadway network, plus fully funded capacity improvement projects in the 2015 – 2021 CIP as adopted by the Bellevue City Council.

The concurrency snapshot reflects short-range projections about average traffic conditions within the city during the two-hour PM peak period. The conditions described represent computed V/C ratios for designated "system" intersections within fourteen Mobility Management Areas (MMAs) as defined in the City's Traffic Standards Code. System intersections are arterial street intersections controlled by existing and possible future traffic signals. MMAs are geographic sub-areas of the City, designated for transportation currency analysis and reporting purposes.

Concurrency Standards

The city's currency standard consists of two metrics for each of the MMAs: the permitted maximum average system intersection V/C ratio and the maximum number of intersections allowed to exceed the V/C ratio defined for each MMA (congestion allowance.) The standards were defined to be consistent with the land use vision for the area, the availability and level of service of alternative modes of travel, and community input. Table 1 shows the concurrency standard for each MMA.

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	Newcastle	0.80	3
12	Bel-Red/Northup	0.95	7
13	Factoria	0.95	5

Source: Bellevue City Code 14.10.030

Methodology

The concurrency methodology for the City of Bellevue consists of program level analysis and project level analysis. This report is a program level analysis. At the **program** level, all analysis is performed using the City's 6-year EMME travel demand model platform (MP6), including trip generation, where broad categorical trip rates are derived from the regional household travel surveys conducted by the Puget Sound Regional Council.

In contrast, a **project** level concurrency analysis involves a combined ITE (Institute of Transportation Engineers) and EMME approach. In this combined approach, trip generation for a specific proposed development is estimated based on the latest ITE Trip Generation Manual; trip generation for the existing land use plus approved development is estimated based on the EMME model, as described above. The 2014 existing condition was analyzed using existing

traffic counts and roadway geometries. Figure 1 illustrates the concurrency analysis process for the 2015 CP.

The intersection operation analysis is based on the Highway Capacity Manual (HCM) 2009. The manual provides procedures to analyze intersection-specific geometric, traffic, and signal conditions for a performance rating defined as level of service (LOS). Assumptions include:

- For intersection capacity analysis, peak hour traffic volumes are averaged over a two-hour period from 4 PM to 6 PM, which generally represents the most congested traffic conditions.
- Uniform traffic demand over the two-hour period, as represented by a peak hour factor (PHF) of 1.
- V/C ratios are calculated at each individual system intersection. The weighted average V/C ratio for all system intersections within each MMA is then calculated and compared with the adopted standard for the respective MMA.
- Development is considered concurrent if the resulting traffic impacts do not cause the area-wide average to exceed the adopted V/C ratio and the number of congested intersections in the area does not exceed the congestion allowance as established in the Traffic Standards Code.

MMA Boundaries

For concurrency analysis and reporting purposes, the city is divided into 14 MMAs. The MMA boundaries have evolved slightly over time to include newly annexed lands and to better align with existing land use characteristics and anticipated future development patterns. The current MMA boundaries are shown in Figure 2. There were no changes to MMA boundaries from the last currency report released in 2013.

Figure 1 Concurrency Analysis Process

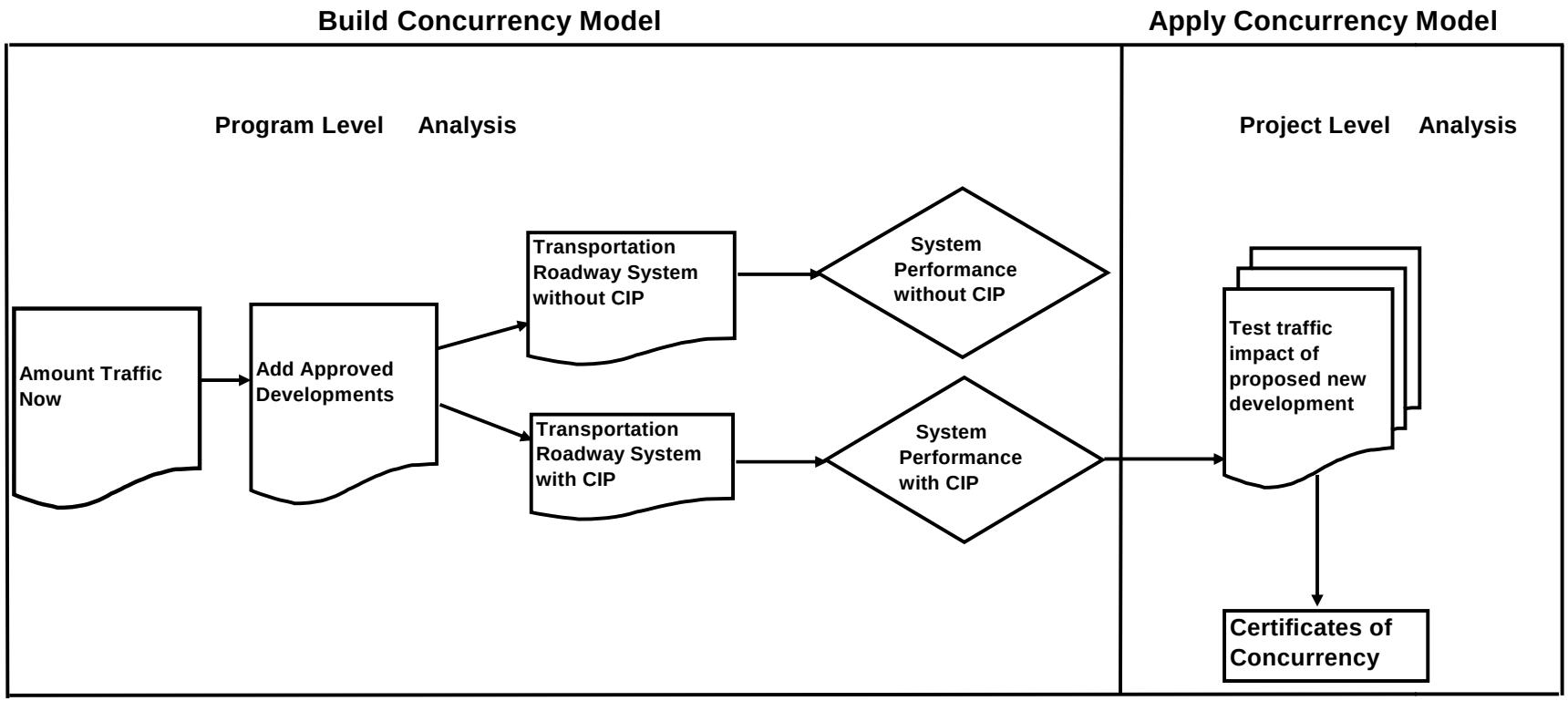
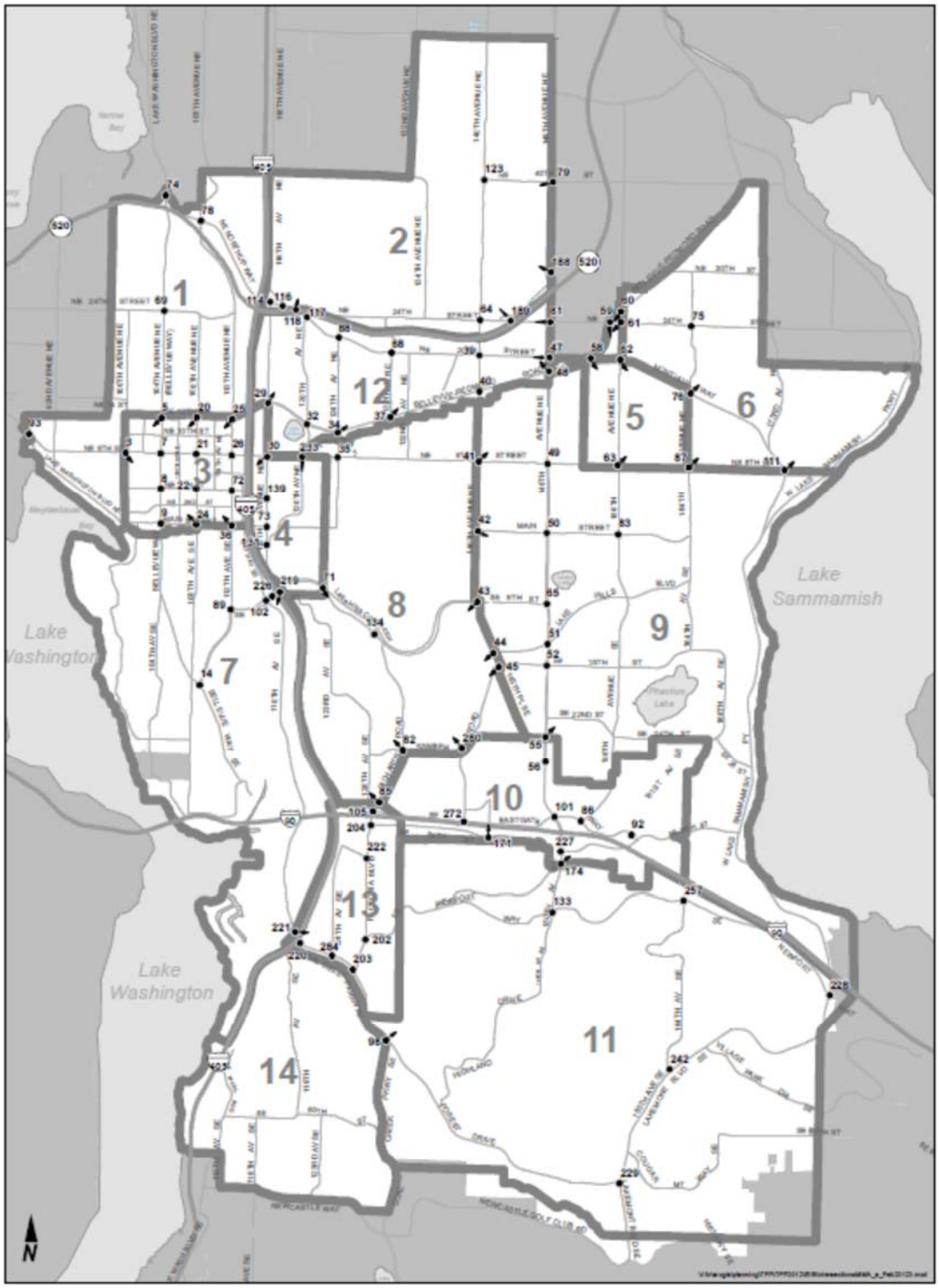


Figure 2 Mobility Management Areas (MMA) and System Intersections



Source: Bellevue City Code 14.10.030

Input Data

Land Use

The land use data includes existing plus new development approved by the City of Bellevue through the end of 2014. The existing land use information was extracted from the King County Tax Assessor's file as of December 31, 2013. Table 2 provides an MMA-level summary of the existing 2013 land use. The land use permit tracking system (AMANDA) is the source of new development approved by the City. Permitted development represents the new increment of land use for concurrency testing. Table 3 lists major developments approved as of the end of 2014. Since not all development occurred on formerly vacant land, the land use information accounted for demolition and conversions of land use and represents the net change. Table 4 provides aggregation of approved developments by MMA. It includes more than two million gross square feet (GSF) of Office, nearly 600,000 GSF of Retail, and 620,000 GSF of Other (institutional, industrial and hotel) spaces. In addition, 2,454 new multifamily dwelling units and 49 new single family homes are also included. Table 5 contains existing plus approved land use totals by category for the 14 MMAs.

Vacancy rates are assumed citywide for modeling of existing and concurrency land use snapshots: Office = 10%, Retail = 5%, and Industrial = 7.5%. Actual vacancy rates may differ but the assumed rates are consistent with observed vacancy rates over time.

Table 2 Existing Land Use Summary

MMA	Subarea	Commercial (sqft)			Dwelling Units	
		Office	Retail	Others	MF	SF
1	North Bellevue	1,449,577	185,759	402,086	2,176	2,175
2	116th Ave NE	697,636	405,611	535,007	3,252	1,680
3	Downtown Bellevue	9,061,810	3,862,690	2,011,701	7,484	-
4	Wilburton	1,271,252	658,289	929,540	577	76
5	Crossroads	153,921	678,347	224,045	3,374	51
6	Northeast Bellevue	426,995	12,816	469,632	255	3,311
7	South Bellevue	1,172,285	261,203	1,274,173	2,025	2,720
8	Richards Valley	211,470	76,782	284,729	3,517	2,479
9	East Bellevue	523,961	386,287	1,168,079	2,410	6,685
10	Eastgate	4,006,435	471,351	1,874,720	654	315
11	Newcastle	143,461	130,558	888,473	1,017	8,214
12	Bel-Red/Northup	2,579,595	2,236,080	3,421,834	112	1
13	Factoria	1,467,427	860,224	434,742	1,150	335
14	Newport Hills	13,464	94,510	167,315	472	2,636
Total		23,179,289	10,320,507	14,086,076	28,475	30,678

Source: King County Tax Assessor's Office as of December, 2013

Table 3 Approved Developments as of December 31, 2014

Development Name	MMA	Office (sqft)	Retail (sqft)	Others (sqft)	MF (units)
Bellevue Boys and Girls Club	1			26,281	
Hidden Valley Sports Park Fieldhouse	1			21,832	
COBP - Bellevue Golf Course	2			9,025	
Alamo Manhattan Main Street	3		7,078		260
Alley 111 Apartments	3		5,500		260
103rd Ave Apartments	3				175
Bellevue Apartments	3				57
Bellevue At Main Street	3		40,220		256
Bellevue Park Apartments	3		9,903		160
Hotel AC Bellevue	3		(8,500)	110,000	
Lincoln Square Expansion	3	691,596	392,000	150,000	231
Main Street Gateway	3		25,163		350
Marriott Hotel Tower	3			269,018	
Nine Two Nine Tower	3	452,000	5,000		
QFC	3		65,207		
Soma Towers Phase 2	3	8,749	8,181		127
Summit III	3	342,930			
Chick-Fil-A	4		2,862		
Milano Townhomes	4				11
Bel Red Office (LUX)	5	19,888			
COBP - Bellevue Youth Theatre	5			13,448	
The Madison Bellevue	5				106
Townvue Townhomes	7				23
Tulum Downs	7				39
Chen Commercial Office Building	9	5,784			
Lake Hills Mixed Use Development	9	11,727	22,353		18
Odle Middle School	9			156,415	
Bellevue College Health Science Bldg	10	70,513			
Factoria Recycling and Transfer Station	10			79,752	
GRE Bellevue	12				381
The Spring District	12	485,133	18,761	(355,829)	
Walgreens	12		3,800		
Wintz Co - Self Storage Solutions	12			139,709	
Total		**2,088,320**	**597,528**	**619,651**	**2,454**

Source: City of Bellevue Development Services Department

Table 4 Approved Developments Aggregated by MMA (As of December 31, 2014)

MMA	Subarea	Office (sqft)	Retail (sqft)	Others (sqft)	MF (units)	SF (units)
1	North Bellevue	-	-	48,113	-	4
2	Bridle Trails	-	-	9,025	-	1
3	Downtown Bellevue	1,495,275	549,752	529,018	1,876	(1)
4	Wilburton	-	2,862	-	11	-
5	Crossroads	19,888	-	13,448	106	-
6	Northeast Bellevue	-	-	-	-	1
7	South Bellevue	-	-	-	62	4
8	Richards Valley	-	-	-	-	
9	East Bellevue	17,511	22,353	156,415	18	9
10	Eastgate	70,513	-	79,752	-	1
11	Newcastle	-	-	-	-	23
12	Bel-Red/Northup	485,133	22,561	(216,120)	381	-
13	Factoria	-	-	-	-	1
14	Newport Hills	-	-	-	-	6
Total		2,088,320	597,528	619,651	2,454	49

Source: City of Bellevue Development Services Department

Table 5 Land Use Assumed for 2015 Concurrency Platform

MMA	Subarea	Office (sqft)	Retail (sqft)	Others (sqft)	MF (units)	SF (units)
1	North Bellevue	1,449,577	185,759	450,199	2,176	2,179
2	Bridle Trails	697,636.0	405,611	544,032	3,252	1,681
3	Downtown Bellevue	10,557,085	4,412,442	2,540,719	9,360	(1)
4	Wilburton	1,271,252.0	661,151	929,540	588	76
5	Crossroads	173,809	678,347	237,493	3,480	51
6	Northeast Bellevue	426,995.0	12,816	469,632	255	3,312
7	South Bellevue	1,172,285.0	261,203	1,274,173	2,087	2,724
8	Richards Valley	211,470.0	76,782	284,729	3,517	2,479
9	East Bellevue	541,472	408,640	1,324,494	2,428	6,694
10	Eastgate	4,076,948	471,351	1,954,472	654	316
11	Newcastle	143,461.0	130,558	888,473	1,017	8,237
12	Bel-Red/Northup	3,064,728	2,258,641	3,205,714	493	1
13	Factoria	1,467,427.0	860,224	434,742	1,150	336
14	Newport Hills	13,464.0	94,510	167,315	472	2,642
Total		25,267,609	10,918,035	14,705,727	30,929	30,727

Source: King County Tax Assessor's Office & City of Bellevue Development Services Department

Transportation Network

The adopted 2015-2021 CIP is assumed in this analysis. The concurrency model network includes all fully funded projects that would add capacity to roadways and intersections. These capacity projects include roadway widening, intersection signalization and channelization, and access improvements. The 2015-2021 CIP capacity project locations are shown in Figure 3. Major capacity projects are described in Table 6.

Traffic Counts

The latest PM peak two-hour average counts were used along with the 2014 existing intersection geometry and signal timing plans to calculate intersection V/C ratios for the 2014 existing condition. These counts were also used to adjust the outputs from the 2015 Base Model Platform (MP6-R12) to account for model validation differences.

Figure 3 CIP Projects (2015 - 2021)

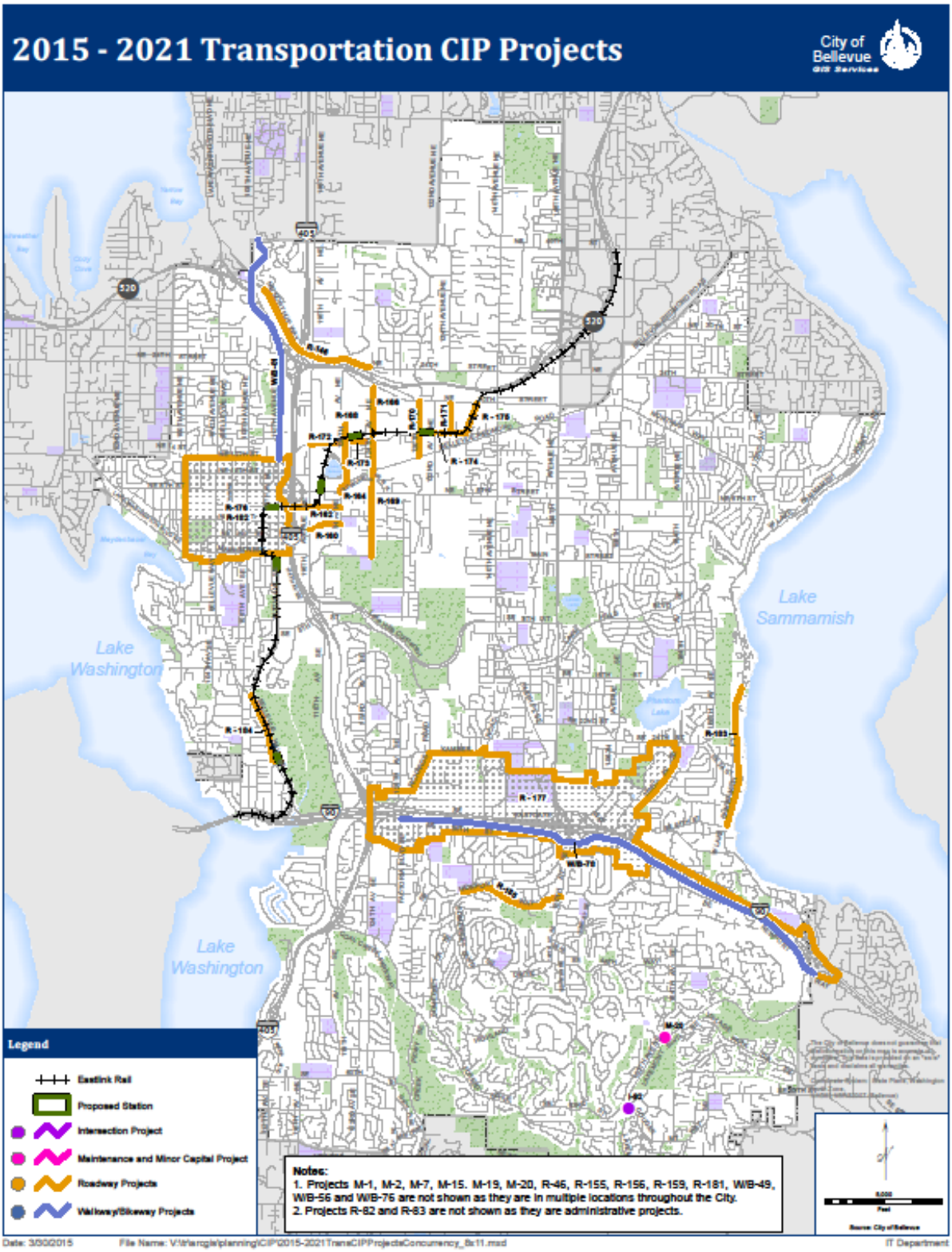


Table 6 CIP Capacity Projects (2015 - 2021)

CIP	Project Name	Description
PW-I-92	Lakemont Boulevard/Cougar Mountain Way	This project will install a traffic signal with added left turn pockets on Lakemont Boulevard.
PW-M-20	Lakemont Boulevard/164th Avenue SE	This is a Minor Capital program project – Signals & Lighting. It will install a traffic signal at this system intersection.
PW-R-160	NE 4th Street Extension	This project will construct a new five lane arterial, with two travel lanes in each direction and a center turn lane between 116th Avenue NE and 120th Avenue NE. The project will include a new signalized intersection at NE 4th Street/120th Avenue NE and will modify the existing signalized intersection at NE 4th Street/116th Avenue NE.
PW-R-164	120th Avenue NE Improvements (Stage 2) - NE 8th Street to NE 12th Street	This project will extend, realign and widen 120th Avenue NE from south of NE 8th Street to NE 12th Street to five lanes, including two travel lanes in each direction with turn pockets or a center turn lane. It also includes intersection improvements at NE 8th Street and intersection improvements and a new signal at Old Bel-Red Road.
PW-R-166	124th Avenue NE - NE Spring Boulevard to NE 18th Street	This project will widen 124th Avenue NE from NE Spring Boulevard to NE 18th Street. The roadway cross-section will consist of five lanes, including two travel lanes in each direction with turn pockets or a center turn lane. The project will install a new traffic signal at NE 16th Street.
PW-R-168	120th Avenue NE Improvements (Stage 3) - NE 12th Street to NE 16th Street	This project will extend the 120th Avenue NE widening from NE 12th Street to NE 16th Street. The roadway cross-section will consist of five lanes, including two travel lanes in each direction with turn pockets or a center turn lane. This stage of the project includes all intersection improvements at NE 12th Street.
PW-R-172	NE Spring Boulevard – 116th Avenue NE to 120th Avenue NE	This project will construct a new multi-modal arterial street connection between NE 12th Street/116th Avenue NE and 120th Avenue NE. NE 12th Street will be widened between 116th Avenue NE and a new intersection with Spring Boulevard, to west of the Eastside Rail Corridor. The Spring Boulevard cross-section, between NE 12th Street and 120th Avenue NE, will include two travel lanes in each direction with turn pockets. The project will include modifications to the NE 12th Street/116th Avenue NE intersection and new signalized intersections at NE 12th Street/NE Spring Boulevard and Spring Boulevard/120th Avenue NE.
PW-R-174	NE Spring Boulevard – 130th Avenue NE to 132nd Avenue NE	This project will construct a new single lane westbound arterial street connection between 130th and 132nd Avenues NE. The project will install new traffic signals at both 130th and 132nd Avenues NE that will integrate vehicle, pedestrian, bicycle movements with the East Link light rail transit crossings at these intersections.

Concurrency Analysis Findings

The V/C ratios for the two scenarios are compared to the city's concurrency standard as depicted in Table 7.

Table 7 Concurrency Analysis Results by MMA

MMA	Concurrency Standard		2014 Existing Condition				2015 Concurrency Platform			
	V/C Ratio	Congestion Allowance	V/C Ratio	Remaining Capacity (V/C Ratio)	No of Intersections Exceeding the V/C Ratio	Remaining Congestion Allowance	V/C Ratio	Remaining Capacity (V/C Ratio)	No of Intersections Exceeding the V/C Ratio	Remaining Congestion Allowance
1 North Bellevue	0.85	3	0.48	0.37	0	3	0.49	0.36	0	3
2 Bridle Trails	0.80	4	0.65	0.15	1	3	0.63	0.17	1	3
3 Downtown	0.95	9	0.65	0.31	1	8	0.72	0.23	1	8
4 Wilburton	0.90	3	0.68	0.22	0	3	0.73	0.17	1	2
5 Crossroads	0.90	2	0.62	0.28	0	2	0.63	0.27	0	2
6 N-E Bellevue	0.80	2	0.63	0.17	0	2	0.64	0.16	0	2
7 South Bellevue	0.85	4	0.65	0.20	0	4	0.65	0.20	0	4
8 Richards Valley	0.85	5	0.61	0.24	0	5	0.63	0.22	0	5
9 East Bellevue	0.85	5	0.74	0.11	2	3	0.77	0.08	2	3
10 Eastgate	0.90	4	0.65	0.25	0	4	0.65	0.25	0	4
11 Newcastle	0.80	3	0.74	0.06	0	3	0.66	0.14	0	3
12 Bel-Red/Northup	0.95	7	0.67	0.28	0	7	0.70	0.25	0	7
13 Factoria	0.95	5	0.80	0.15	1	4	0.81	0.14	1	4

Average V/C Ratios Analysis by MMA

Under 2014 existing condition, all MMAs meet their associated V/C ratio standards. The V/C ratios for individual MMAs ranged from 0.48 (MMA 1 - North Bellevue) to 0.80 (MMA 13 - Factoria). The remaining capacity (the difference between calculated V/C ratio and V/C ratio standard) ranges from 0.06 (MMA 11 - Newcastle) to 0.37 (MMA 1 - North Bellevue). Remaining capacity is an indicator of how close an MMA is to exceeding the V/C ratio threshold. It is the capacity available for accommodating future development before an MMA fails the concurrency standard.

Under the 2015 Concurrency Platform with the CIP completed and approved development in place, all MMAs meet their respective V/C ratio standards. The V/C ratios for individual MMAs range from 0.49 (MMA 1 - North Bellevue) to 0.81 (MMA 13 - Factoria). The remaining capacity ranges from 0.08 (MMA 12 - East Bellevue) to 0.36 (MMA 1 - North Bellevue). In the 2013 Concurrency Report, the Newcastle MMA was on the verge of failing concurrency. The signalization improvement at the 164th Avenue SE and Lakemont Boulevard intersection improves the MMA's V/C ratio significantly.

Intersection Congestion Allowance Analysis by MMA

Under 2014 existing conditions, the number of intersections failing the MMA V/C standard is six. This is lower than the 56 maximum number of failing intersections allowed (congestion allowance) for all MMAs.

- East Bellevue (MMA 12) has two intersections operating below the standard.
- Bridle Trials (MMA 2), Downtown (MMA 3), and Factoria (MMA 13) each has one intersection operating below the respective V/C ratio standard.
- All system intersections in North Bellevue (MMA 1), Wilburton (MMA 4), Crossroads (MMA 5), Northeast Bellevue (MMA 6), South Bellevue (MMA 7), Richards Valley (MMA 8), Eastgate (MMA 10), Newcastle (MMA 11), and Bel-Red/Northup (MMA 12) meet their respective V/C ratio standard.

Under the 2015 CP, with the CIP completed and approved development in place, all MMAs meet their respective congestion allowance standards. Although the number of intersections failing the standard increases to 6, this is still well within the 56 intersections allowed. However, there were 17 intersections with V/C ratios within 0.10 of their respective MMA's V/C thresholds. The intersections that are expected to operate below the standard or barely meeting the standard under the 2015 CP are listed in Table 8. The city will continue to closely monitor the operations of these intersections in the future.

- East Bellevue (MMA 9) has two intersections operating below the standard (five are allowed). Three other intersections barely meet the standard, the highest among all the MMAs.
- Downtown (MMA 3) and Factoria (MMA 13) each has one intersection operating below the standard (nine and five are allowed respectively). Downtown has one intersection and Factoria has two intersections barely meeting the standard.
- Bridle Trails (MMA 2) and Wilburton (MMA 4) each has one intersection below the standard (four and three are allowed respectively). All other intersections are well within the standard.
- Newcastle (MMA 11) has three intersections that barely meet the standard (three are allowed).
- Eastgate (MMA 10) and Bel-Red (MMA 12) do not have any intersections below the V/C standard, but each has two intersections that barely meet the standard.
- Northeast Bellevue (MMA 6), South Bellevue (MMA 7), and Richards Valley (MMA 8) each has one intersection that barely meets the standard (two, four, and five are allowed respectively).
- North Bellevue (MMA 1) and Crossroads (MMA 5) do not have any intersections that are either below or close to falling below their respective standard.

Table 8 Intersection V/C Standards Under 2015 Concurrency Platform

Intersection Cross Street	MMA	V/C Standard	2014 Existing Condition			2015 Concurrency Platform		
			V/C	Remaining Capacity	Standard Met?	V/C	Remaining Capacity	Stanard Met?
148th Ave NE & NE 29th Place	2	0.80	0.84	-0.03	No	0.83	-0.03	No
140th Ave NE & NE 24th Street	2	0.80	0.75	0.06	Barely	0.75	0.05	Barely
112th Ave NE & NE 8th Street	3	0.95	1.07	-0.12	No	1.12	-0.17	No
112th Ave & Main Street	3	0.95	0.85	0.10	Yes	0.95	0.00	Barely
116th Ave NE & NE 4th Street	4	0.90	0.67	0.23	Yes	0.96	-0.06	No
164th Ave NE & NE 8th Street	6	0.80	0.74	0.06	Barely	0.77	0.03	Barely
118th Ave SE & SE 8th Street	7	0.85	0.85	0.00	Barely	0.81	0.04	Barely
Lk Hills Connector & SE 8th St/7th Pl.	8	0.85	0.80	0.05	Barely	0.81	0.04	Barely
148th Ave & Main Street	9	0.85	0.90	-0.05	No	0.92	-0.07	No
148th Ave NE & NE 8th Street	9	0.85	0.86	-0.01	No	0.90	-0.05	No
148th Ave SE & SE 16th Street	9	0.85	0.77	0.08	Barely	0.78	0.07	Barely
148th Ave SE & Lake Hills Blvd	9	0.85	0.76	0.09	Barely	0.77	0.08	Barely
148th Ave SE & SE 24th Street	9	0.85	0.75	0.10	Yes	0.76	0.09	Barely
150th Ave SE & SE Eastgate Way	10	0.90	0.90	0.00	Barely	0.90	0.00	Barely
150th Ave SE & I-90 EB Off-Ramp	10	0.90	0.88	0.02	Barely	0.88	0.02	Barely
Coal Creek PKWY & Forest Drive SE	11	0.80	0.73	0.07	Barely	0.79	0.01	Barely
150th Ave SE & SE Newport Way	11	0.80	0.76	0.04	Barely	0.76	0.04	Barely
Lakemont Blvd & SE Newport Way	11	0.80	0.73	0.07	Barely	0.74	0.06	Barely
148th Ave NE & Bellevue-Redmond	12	0.95	0.90	0.05	Barely	0.91	0.04	Barely
124th Ave NE & Northup Way NE	12	0.95	0.65	0.30	Yes	0.86	0.09	Barely
124th Ave SE & Coal Creek PKWY	13	0.95	1.01	-0.06	No	1.02	-0.06	No
128th Ave SE & SE 38th Place	13	0.95	0.90	0.05	Barely	0.91	0.04	Barely
I-405 SB Ramps & Coal Creek Park	13	0.95	0.87	0.08	Barely	0.90	0.05	Barely

Figures 4 and 5 depict the system intersection analysis results for the 2014 existing condition and the 2015 Currency Platform. Intersections operating below the currency standard (with V/C ratios exceeding the respective MMA V/C threshold) are shown in red. Intersections that barely meeting the currency standard (with calculated V/C ratios lower than but within 0.10 of the V/C standard) are shown in orange. The remaining System Intersections are shown in green, indicating they are well within their respective MMA's concurrency standard.

Figure 4 2014 Existing Condition (PM Peak) System Intersection Assessment

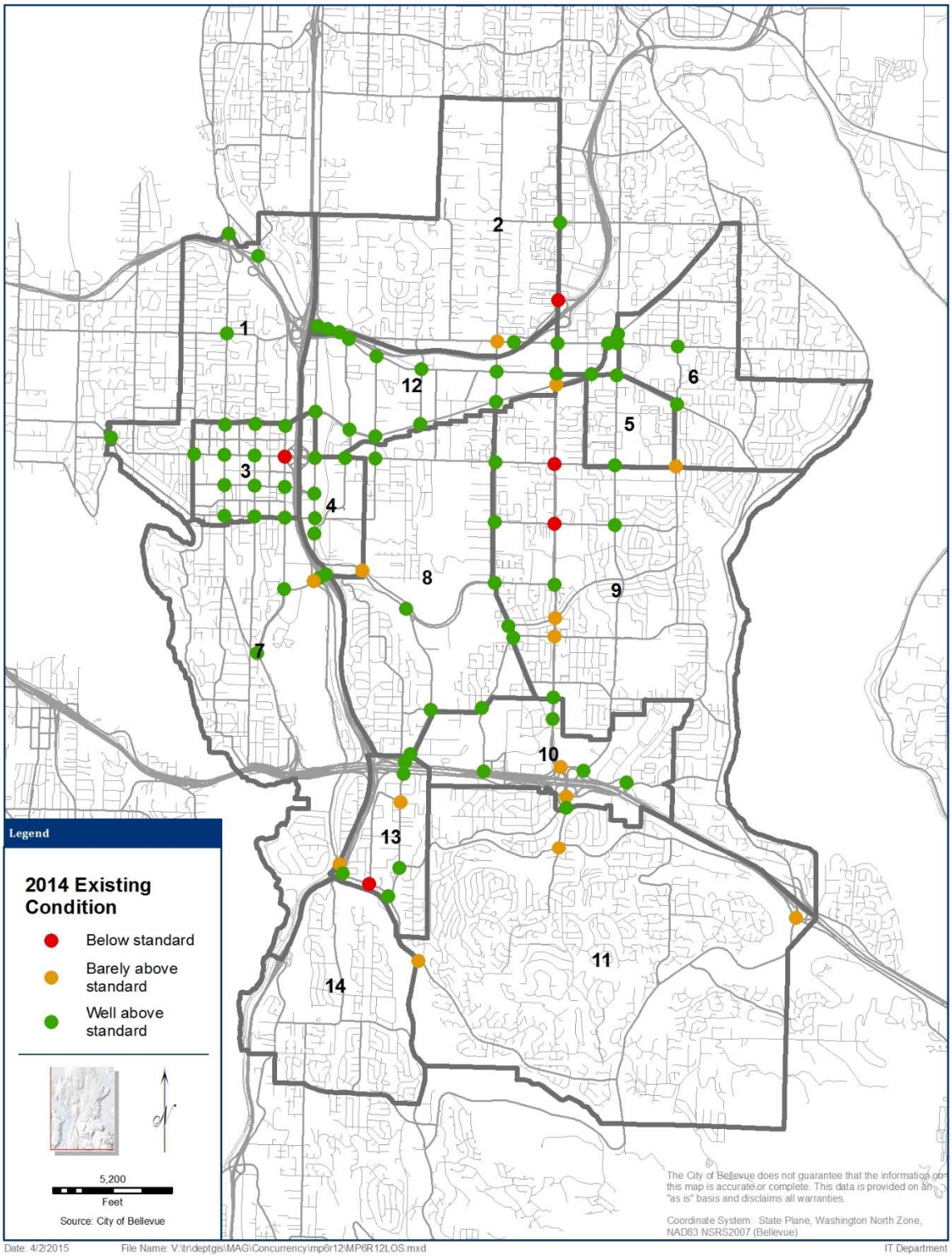
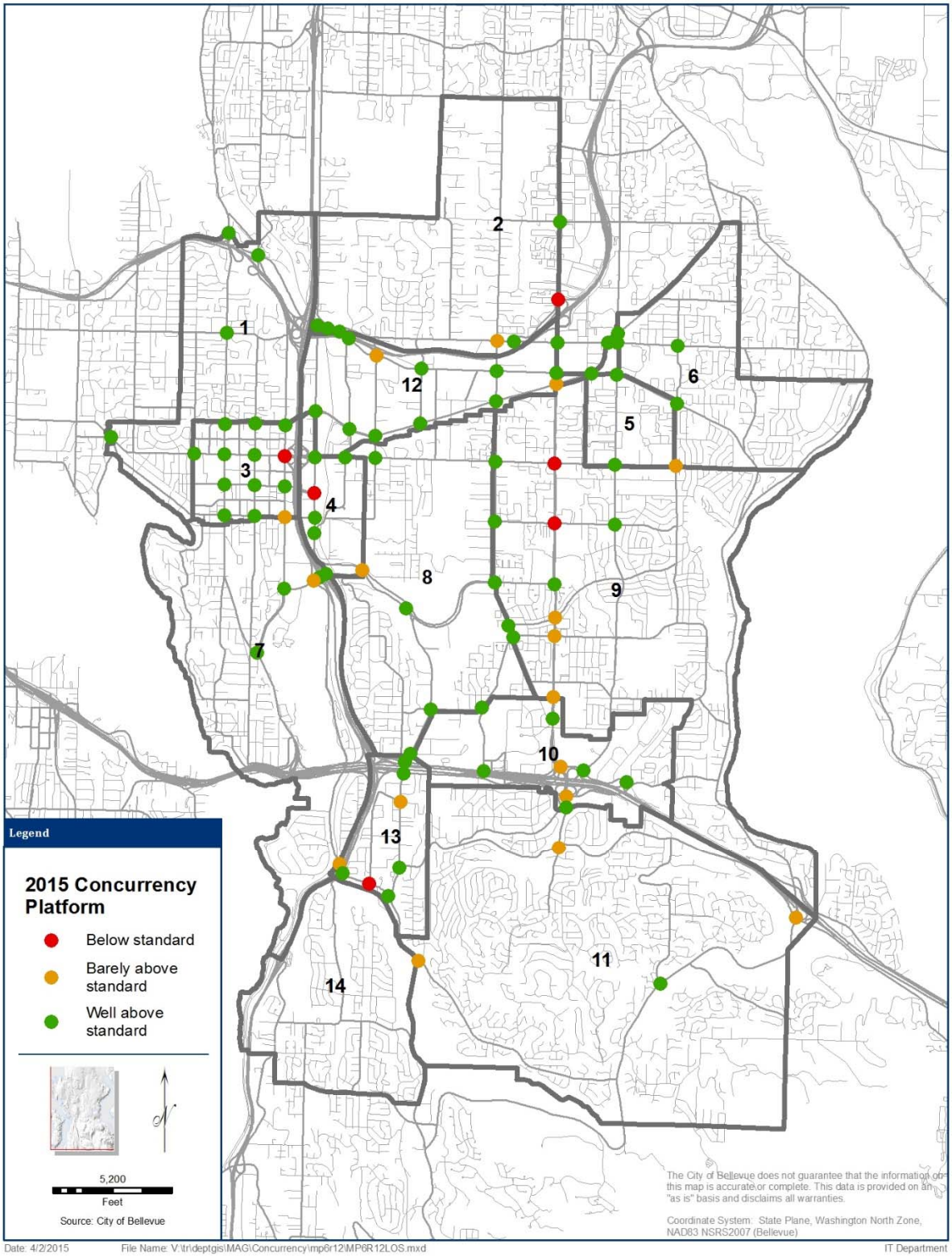


Figure 5 2015 CP (PM Peak) System Intersection Assessment



Conclusion

The 2015-2021 CIP network is able to accommodate the increased demand associated with new development permitted through December 31, 2014. All MMAs meet their congestion allowance and all MMAs are within the average V/C ratios allowed by the concurrency standard for each MMA.

With the CIP completed and approved development in place, four MMAs are expected to experience improved traffic operation: Newcastle (MMA 11), Bridle Trails (MMA 2), South Bellevue (MMA 7), and Northeast Bellevue (MMA 6).

Following the release of this Concurrency Update Report, the 2015 Concurrency Platform (2015 CP; model version MP6-R12) will be used as the background condition for project-level development review modeling until a new concurrency update is completed.

Appendix A: Glossary of Terms

Approved development is a new proposed development that has either received building permit or design approval from the city.

Capital Improvement Program (CIP) is the list of fully funded six year capacity improvement projects as adopted every two years by the Bellevue City Council.

Concurrency is a requirement of the Washington State's Growth Management Act (RCW 36.70A.070(6), now or as hereafter amended) that the city must enforce an ordinance precluding approval of a proposed development if that development would cause the level of service of a transportation facility to fall below the city's adopted standard, unless a financial commitment is in place to complete mitigating transportation improvements or strategies within six years.

Concurrency standard is a standard adopted in the city of Bellevue's Traffic Standards Code (BCC Chapter 14.10) to meet GMA requirements. It establishes the City's transportation concurrency requirements, methodologies, and compliance determination process. It consists of two indicators: Congestion Allowance and maximum average system intersection V/C ratio by individual Mobility Management Area.

Congestion allowance means the number of signalized system intersections in a particular Mobility Management Area allowed to exceed the V/C ratio adopted for that area as defined in the city's Traffic Standards Code.

Highway Capacity Manual is a traffic operation analysis procedural manual published by the Transportation Research Board. It is used by engineers and planners to assess the traffic and environmental effects of highway and arterial projects.

Mobility Management Area (MMA) is a geographic area, as defined in the city's Traffic Standards Code, for performing concurrency analysis and reporting purposes. There are 14 MMAs in the city. The MMA boundaries have evolved slightly over time to include newly annexed lands and to better align with existing land use characteristics and anticipated future development patterns.

Model Platform MP6-R12 is the given model platform name and version where 6 represents 6 year forecasting period and R12 indicates release number 12. It is the city's adopted model platform for concurrency review until the next version is available.

Remaining capacity refers to the capacity available in an MMA for additional vehicles before the V/C ratio threshold is exceeded. It is calculated by subtracting the modeled V/C ratio from the V/C ratio associated with a particular MMA concurrency standard.

System intersections means an intersection which contributes to the system function within each mobility management area. System intersections within the mobility management areas are listed and mapped in BCC 14.10.060.

Travel demand model refers to computerized program designed to perform travel demand forecast. It takes transportation networks and land use information as inputs. The city of Bellevue uses EMME software developed by Inro in Montreal, Canada.

Traffic Standards Code is the Chapter 14 of the Bellevue City Code. It sets forth specific standards providing for city compliance with the concurrency requirements of the state Growth Management Act (GMA) and for consistency between city and countywide planning policies under the GMA. The GMA requires that transportation improvements or strategies to accommodate the traffic impacts of development be provided concurrently with development to handle the increased traffic projected to result from growth and development in the city and region.

V/C ratio is an indication of congestion and the ability of the facility to support transportation demand. Intersection V/C ratio is the sum of the approaching “critical” lane volumes divided by the available corresponding capacity for those lanes. Critical lane volume is the number of vehicles that want to occupy the same travel space to get to their destination.

Appendix B: Intersection Level of Service Results by Mobility Management Area

MMA 1: North Bellevue V/C Threshold 0.85

Intersection Streets		2014 Existing Condition		2015 C.P.	
		V/C	Standard Met?	V/C	Standard Met?
Bellevue Way NE	NE 24th Street	0.51	Yes	0.54	Yes
Bellevue Way NE	Northup Way NE	0.61	Yes	0.60	Yes
108th Ave NE	Northup Way NE	0.53	Yes	0.57	Yes
Lk Washington B	NE 1st/NE 10 St.	0.27	Yes	0.28	Yes
Areawide V/C		0.48	0.00	0.49	

MMA 2: Bridle Trail V/C Threshold 0.80

Intersection Streets		2014 Existing Condition		2015 C.P.	
		V/C	Standard Met?	V/C	Standard Met?
140th Ave NE	NE 24th Street	0.75	Barely	0.75	Barely
148th Ave NE	NE 40th Street	0.60	Yes	0.59	Yes
116th Ave NE	Northup Way NE	0.66	Yes	0.49	Yes
115th Place NE	Northup Way	0.69	Yes	0.49	Yes
Northup Way	NE 24th Street	0.49	Yes	0.58	Yes
140th Ave NE	NE 40th Street	-----	----	-----	-----
148th Ave NE	NE 29th Place	0.84	No	0.83	No
NE 29th Place	NE 24th Street	0.51	Yes	0.51	Yes
Areawide		0.65	0.00	0.63	

MMA 3: Downtown V/C Threshold 0.95

Intersection Streets		2014 Existing Condition		2015 C.P.	
		V/C	Standard Met?	V/C	Standard Met?
100th Ave NE	NE 8th Street	0.47	Yes	0.49	Yes
Bellevue Way NE	NE 12th Street	0.63	Yes	0.66	Yes
Bellevue Way NE	NE 8th Street	0.61	Yes	0.62	Yes
Bellevue Way NE	NE 4th Street	0.65	Yes	0.75	Yes
Bellevue Way	Main Street	0.74	Yes	0.84	Yes
108th Ave NE	NE 12th Street	0.32	Yes	0.38	Yes
108th Ave NE	NE 8th Street	0.59	Yes	0.63	Yes
108th Ave NE	NE 4th Street	0.61	Yes	0.78	Yes
108th Ave	Main Street	0.44	Yes	0.55	Yes
112th Ave NE	NE 12th Street	0.62	Yes	0.65	Yes
112th Ave NE	NE 8th Street	1.07	No	1.12	No
112th Ave	Main Street	0.85	Barely	0.95	Barely
112th Ave NE	NE 4th Street	0.66	Yes	0.79	Yes
Areawide		0.65	0.00	0.72	

Note: Dashed marks indicate unsignalized intersections, which are excluded from the concurrency calculations.

MMA 4: Wilburton V/C Threshold 0.90

Intersection Streets		2014 Existing Condition		2015 C.P.	
		V/C	Standard Met?	V/C	Standard Met?
116th Ave NE	NE 8th Street	0.71	Yes	0.59	Yes
116th Ave	Main Street	0.62	Yes	0.64	Yes
116th Ave SE	SE 1st Street	0.70	Yes	0.67	Yes
116th Ave NE	NE 4th Street	0.67	Yes	0.96	No
120th Ave NE	NE 8th Street	0.69	Yes	0.78	Yes
Areawide		0.68	0.00	0.73	

MMA 5: Crossroads V/C Threshold 0.90

Intersection Streets		2014 Existing Condition		2015 C.P.	
		V/C	Standard Met?	V/C	Standard Met?
Bellevue-Redmond	NE 20th Street	0.51	Yes	0.53	Yes
156th Ave NE	Northup Way	0.74	Yes	0.74	Yes
156th Ave NE	NE 8th Street	0.65	Yes	0.66	Yes
Areawide		0.62	0.00	0.63	

MMA 6: North-East Bellevue V/C Threshold 0.80

Intersection Streets		2014 Existing Condition		2015 C.P.	
		V/C	Standard Met?	V/C	Standard Met?
164th Ave NE	NE 24th Street	0.60	Yes	0.61	Yes
164th Ave NE	Northup Way	0.54	Yes	0.55	Yes
164th Ave NE	NE 8th Street	0.74	Barely	0.77	Barely
Northup Way	NE 8th Street	-----	-----	-----	-----
Areawide		0.63	0.00	0.64	

MMA 7: South Bellevue V/C Threshold 0.85

Intersection Streets		2014 Existing Condition		2015 C.P.	
		V/C	Standard Met?	V/C	Standard Met?
112th Ave SE	Bellevue Way SE	0.70	Yes	0.73	Yes
112th Ave SE	SE 8th Street	0.62	Yes	0.58	Yes
118th Ave SE	SE 8th Street	0.85	Barely	0.81	Barely
I-405 NB Ramps	SE 8th Street	0.64	Yes	0.62	Yes
I-405 SB Ramps	SE 8th Street	0.47	Yes	0.47	Yes
Areawide		0.65	0.00	0.65	

MMA 8: Richards Valley V/C Threshold 0.85

Intersection Streets		2014 Existing Condition		2015 C.P.	
		V/C	Standard Met?	V/C	Standard Met?
124th Ave NE	NE 8th Street	0.67	Yes	0.66	Yes
140th Ave SE	SE 8th Street	0.65	Yes	0.66	Yes
145th Place SE	Lake Hills Blvd	0.53	Yes	0.55	Yes
145th Place SE	SE 16th Street	0.49	Yes	0.51	Yes
Lk Hills Connec	SE 8th St/7t	0.80	Barely	0.81	Barely
Richards Rd	Kamber Rd	0.69	Yes	0.70	Yes
Richards Rd	SE 32nd Street	0.63	Yes	0.71	Yes
Richards Rd	Lk Hills Connec	0.52	Yes	0.53	Yes
139th Ave SE	Kamber Road	0.43	Yes	0.43	Yes
Areawide		0.61	0.00	0.63	

MMA 9: East Bellevue V/C Threshold 0.85

Intersection Streets		2014 Existing Condition		2015 C.P.	
		V/C	Standard Met?	V/C	Standard Met?
140th Ave NE	NE 8th Street	0.70	Yes	0.73	Yes
140th Ave	Main Street	0.51	Yes	0.54	Yes
148th Ave NE	NE 8th Street	0.86	No	0.90	No
148th Ave	Main Street	0.90	No	0.92	No
148th Ave SE	Lake Hills Blvd	0.76	Barely	0.77	Barely
148th Ave SE	SE 16th Street	0.77	Barely	0.78	Barely
148th Ave SE	SE 24th Street	0.75	Barely	0.76	Barely
148th Ave SE	SE 8th Street	0.66	Yes	0.67	Yes
156th Ave	Main Street	0.67	Yes	0.69	Yes
Areawide		0.74	0.00	0.77	

MMA 10: Eastgate V/C Threshold 0.90

Intersection Streets		2014 Existing Condition		2015 C.P.	
		V/C	Standard Met?	V/C	Standard Met?
148th Ave SE	SE 27th Street	0.56	Yes	0.56	Yes
156th Ave SE	SE Eastgate Way	0.58	Yes	0.58	Yes
161st Ave SE	SE Eastgate Way	0.40	Yes	0.40	Yes
150th Ave SE	SE Eastgate Way	0.90	No	0.90	No
142nd Ave SE	SE 36th Street	-----	----	-----	----
150th Ave SE	SE 38th Street	0.70	Yes	0.70	Yes
150th Ave SE	I-90 EB Off-Ram	0.88	Barely	0.88	Barely
139th Ave SE	SE Eastgate Way	0.31	Yes	0.34	Yes
Areawide		0.65	0.00	0.65	

MMA 11: Newcastle V/C Threshold 0.80

Intersection Streets		2014 Existing Condition		2015 C.P.	
		V/C	Standard Met?	V/C	Standard Met?
Coal Creek Park	Forest Drive	0.73	Barely	0.79	Barely
150th Ave SE	SE Newport Way	0.76	Barely	0.76	Barely
Lakemont Blvd (	SE Newport Way	0.73	Barely	0.74	Barely
Lakemont Blvd	Forest Drive	-----	-----	-----	-----
164th Ave SE	Lakemont Blvd	-----	-----	0.42	Yes
164th Ave SE	SE Newport Way	-----	-----	-----	-----
Areawide		0.74	0.00	0.66	

MMA 12: Bel-Red/Northup V/C Threshold 0.95

Intersection Streets		2014 Existing Condition		2015 C.P.	
		V/C	Standard Met?	V/C	Standard Met?
116th Ave NE	NE 12th Street	0.67	Yes	0.76	Yes
120th Ave NE	NE 12th Street	0.53	Yes	0.63	Yes
124th Ave NE	Bellevue-Redmond	0.79	Yes	0.82	Yes
130th Ave NE	Bellevue-Redmond	0.56	Yes	0.59	Yes
140th Ave NE	NE 20th Street	0.69	Yes	0.70	Yes
140th Ave NE	Bellevue-Redmond	0.69	Yes	0.71	Yes
148th Ave NE	NE 20th Street	0.81	Yes	0.82	Yes
148th Ave NE	Bellevue-Redmond	0.90	Barely	0.91	Barely
Bellevue-Redmond	NE 24th Street	0.62	Yes	0.64	Yes
156th Ave NE	Bellevue-Redmond	0.62	Yes	0.64	Yes
156th Ave NE	NE 24th Street	0.71	Yes	0.78	Yes
130th Ave NE	NE 20th Street	0.52	Yes	0.67	Yes
148th Ave NE	NE 24th Street	0.71	Yes	0.73	Yes
124th Ave NE	Northup Way NE	0.65	Yes	0.86	Barely
120th Ave NE	NE 20th Street	0.36	Yes	0.36	Yes
Areawide		0.67	0.00	0.70	

MMA 13: Factoria V/C Threshold 0.95

Intersection Streets		2014 Existing Condition		2015 C.P.	
		V/C	Standard Met?	V/C	Standard Met?
Richards Rd	SE Eastgate Way	0.79	Yes	0.81	Yes
128th Ave SE/Ne	SE Newport Way	0.73	Yes	0.74	Yes
SE Newport Way	Coal Creek Pkwy	0.70	Yes	0.70	Yes
128th Ave SE	SE 36th Street	0.80	Yes	0.81	Yes
I-405 NB Ramps	Coal Creek Park	0.53	Yes	0.56	Yes
I-405 SB Ramps	Coal Creek Park	0.87	Barely	0.90	Barely
128th Ave SE	SE 38th Place	0.90	Barely	0.91	Barely
124th Ave SE	Coal Creek Park	1.01	No	1.02	No
Areawide		0.80	0.00	0.81	

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