




MEMORANDUM

TO: Traffic Standards Code File

FROM: David Berg, Director of Transportation 

DATE: June 6, 2016

SUBJECT: Authorization of Concurrency Model Platform Update: MP6-R13

COPY TO: Bellevue City Councilmembers

The Growth Management Act requires that the City 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. Bellevue's Traffic Standards Code (BCC 14.10) implements this requirement by assessing the impacts of traffic volumes from proposed development upon a concurrency model platform.

The attached report regarding concurrency model platform MP6-R13 summarizes existing level of service analysis results and the concurrency forecast for 2021 at the City's system intersections. MP6-R13 refers to Model Platform 6 for a six year span of the current 2015-2021 Capital Improvement Program period, and Release 13 for the 13th version of this model. This memo identifies and authorizes the application of this updated concurrency model platform for analysis of the impacts of development applications as of this date. It supersedes the MP6- R12 model platform updated in 2015.



City of Bellevue
Transportation Department
Modeling and Analysis Group

Concurrency Update Report
Performance Snapshot
December 31st, 2015



Prepared May 2016

Executive Summary

Model analysis indicates that, citywide, the 2015-2021 Capital Improvement Program (CIP) projects are expected to accommodate the increased demand associated with new development approved through December 31, 2015. All Mobility Management Areas (MMAs) meet their congestion allowance (number of intersections allowed to exceed the volume to capacity ratio threshold per the City’s Traffic Standard Code). All MMAs are within the average volume-to-capacity (V/C) ratios allowed as well.

Concurrency Summary by MMA

MMA		Concurrency Standard		2015 Existing Condition				2016 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	0.61	Yes	0	Yes	0.62	Yes	0	Yes
2	Bridle Trails	0.80	4	0.64	Yes	1	Yes	0.64	Yes	1	Yes
3	Downtown	0.95	9	0.67	Yes	1	Yes	0.72	Yes	1	Yes
4	Wilburton	0.90	3	0.69	Yes	0	Yes	0.70	Yes	0	Yes
5	Crossroads	0.90	2	0.66	Yes	0	Yes	0.66	Yes	0	Yes
6	N-E Bellevue	0.80	2	0.67	Yes	0	Yes	0.68	Yes	0	Yes
7	South Bellevue	0.85	4	0.65	Yes	0	Yes	0.68	Yes	1	Yes
8	Richards Valley	0.85	5	0.67	Yes	1	Yes	0.69	Yes	1	Yes
9	East Bellevue	0.85	5	0.78	Yes	1	Yes	0.79	Yes	2	Yes
10	Eastgate	0.90	4	0.63	Yes	1	Yes	0.64	Yes	1	Yes
11	S-E Bellevue	0.80	3	0.57	Yes	2	Yes	0.57	Yes	1	Yes
12	Bel-Red/Northup	0.95	7	0.65	Yes	0	Yes	0.67	Yes	0	Yes
13	Factoria	0.95	5	0.77	Yes	0	Yes	0.79	Yes	0	Yes
14	Newport Hills*	-	-	-	-	-	-	-	-	-	-

* There are no system intersections in MMA 14.

Following the release of this Concurrency Update Report, the 2016 Concurrency Platform (2016 CP; model version MP6-R13) will be used as the background condition for project-level development review modeling until a new concurrency update is completed. The 2016 CP includes existing development plus the development approved through December 31, 2015 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:

2015 Existing Condition represents the observed 2015 or latest traffic counts and existing roadway and intersection geometries.

2016 Concurrency Platform includes existing land use plus approved developments with the City's six year 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, 2015;
- 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, 2015; and
- 2015 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 concurrency analysis and reporting purposes.

Concurrency Standards

The City’s concurrency 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	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 for it.*

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 background land use (existing plus approved development) is modeled

based on the regional and local travel surveys. The 2015 existing condition was analyzed using existing traffic counts and roadway geometries. Figure 1 illustrates the concurrency analysis process for the 2016 CP.

The intersection operation analysis is based on the Highway Capacity Manual (HCM) 2010. The manual provides procedures to analyze intersection operation conditions. Assumptions include:

- Per the City's Traffic Standards Code (Chapter 14.10), traffic volumes are averaged over a two-hour period from 4 PM to 6 PM, which generally represents the most congested traffic conditions.
- V/C ratios are calculated at each individual system intersection. The 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. This reflects adjustments made in the Comprehensive Plan adopted by the City Council in August 2015. Compared to the last concurrency report released in 2015, the adjustments include:

Two system intersections moved due to MMA boundary adjustment:

- Coal Creek Pkwy. SE/Forest Dr. SE, previously in MMA 11, is now in MMA 13
- 150th Ave. SE/SE 38th St., previously in MMA 10, is now in MMA 11

Two system intersections added to MMA 11:

- Lakemont Blvd. SE/SE 63rd St. (SE Cougar Mountain Way)
- Lakemont Blvd. SE/Village Park Dr. SE

Figure 1 Concurrency Analysis Process

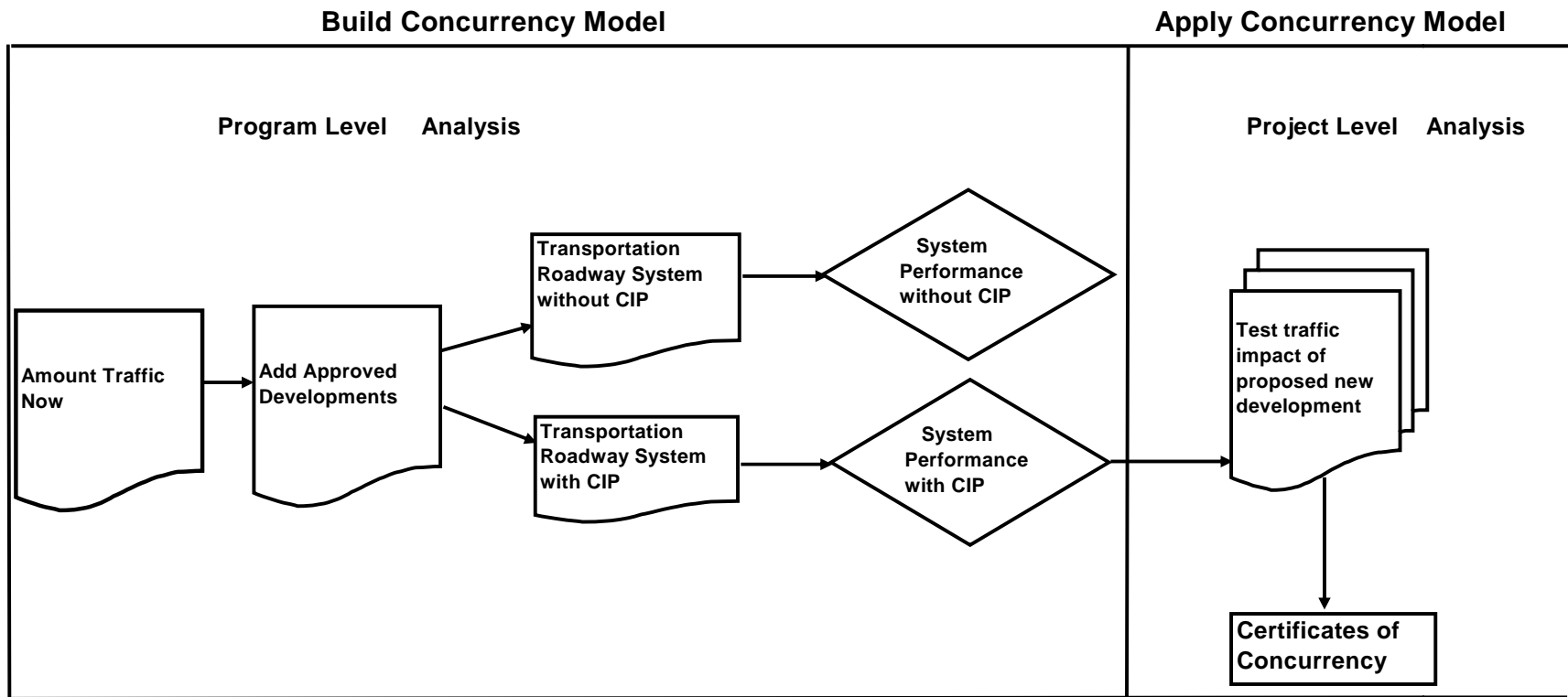
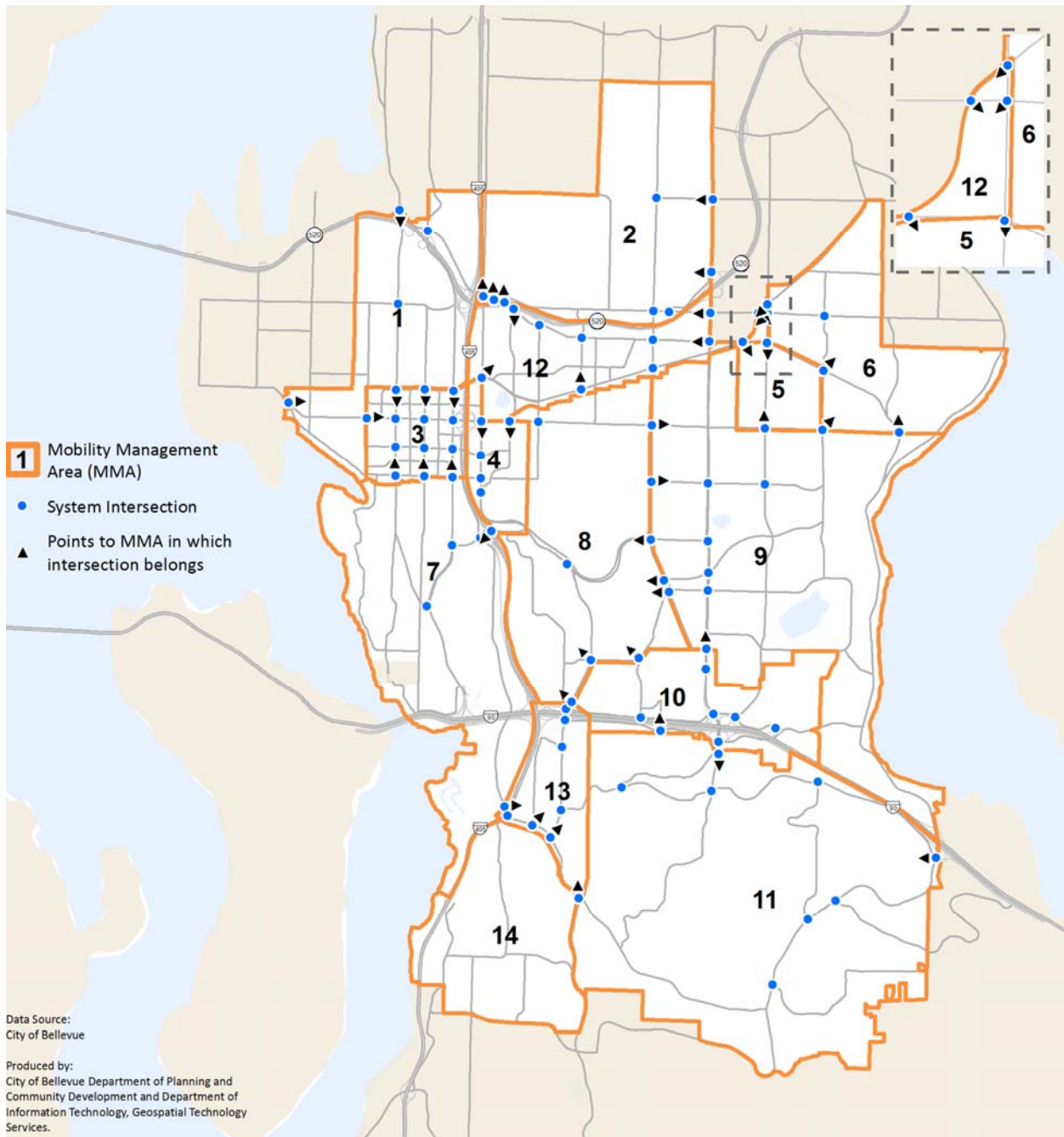


Figure 2 Mobility Management Areas (MMA) and System Intersections



Input Data

Land Use

The land use data includes existing plus new development approved by the City of Bellevue through the end of 2015. The existing land use information was extracted from the King County Tax Assessor's file as of December 31, 2015. Table 2 provides an MMA-level summary of the existing 2015 land use. The land use permit tracking system (AMANDA) is the source of new development approved by the City. The approved development data were processed by the Planning and Community Development Department. Permitted development represents the new increment of land use for concurrency testing. Table 3 lists major developments approved as of the end of 2015. 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 development by MMA. It includes more than 1.3 million gross square feet (GSF) of Office, nearly 270,000 GSF of Retail, and about 820,000 GSF of Other (institutional, industrial and hotel) spaces. In addition, 1,882 new multifamily dwelling units and 85 new single family homes with valid building permits 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 2015 Existing Land Use Summary

MMA	Subarea	Commercial (sqft)			Dwelling Units	
		Office	Retail	Others	MF	SF
1	North Bellevue	1,442,167	199,693	399,442	2,167	2,168
2	Bridle Trails	697,636	405,611	526,794	3,242	1,701
3	Downtown	9,636,954	3,730,021	2,209,671	8,958	-
4	Wilburton	1,274,729	623,634	1,004,945	605	76
5	Crossroads	153,921	679,423	214,738	3,495	51
6	Northeast Bellevue	426,995	15,933	469,632	255	3,276
7	South Bellevue	1,175,609	258,791	1,226,700	1,998	2,598
8	Richards Valley	209,352	76,782	281,129	3,517	2,487
9	East Bellevue	543,548	435,631	1,154,069	2,514	6,785
10	Eastgate	4,012,693	468,465	1,925,901	654	241
11	Southeast Bellevue	140,261	129,776	938,060	1,017	8,309
12	BelRed/Northup	2,636,862	2,394,229	4,034,856	524	1
13	Factoria	1,471,917	856,864	392,991	1,147	335
14	Newport Hills	10,439	96,830	208,815	472	2,664
Total		23,833,083	10,371,683	14,987,743	30,565	30,692

Source: King County Tax Assessor's Office as of December, 2015

Table 3 Approved Major Development as of December 31, 2015

Development Name	MMA	Office (sqft)	Retail (sqft)	Others (sqft)	MF (units)
Bellevue Boys and Girls Club	1	7,180	-	21,026	-
103rd Ave Apts	3	-	-	-	175
888 Bellevue Tower	3	-	-	-	162
Centre 425 - Tower (415 Bellevue Office)	3	307,414	1,812	7,581	-
Evergreen Plaza Apartments - Residential	3	-	-	-	154
Lincoln Square Expansion	3	708,472	229,840	231,749	231
Marriott AC Hotel - Tower	3	6,660	7,848	91,977	-
Metro 112 Phase II	3	-	-	-	57
Pacific Regent of Bellevue, Phase II	3	-	-	-	303
Soma Towers Phase 2	3	8,749	8,181	4,291	127
Washington Sq Hilton Garden Inn	3	12,018	10,967	132,459	-
Bellevue North	4	-	76,528	-	-
Westridge Apartments	4	-	-	-	31
Crossroads Senior Living	5	-	(43,932)	-	185
Eastside Corps Community Center	5	6,435	982	7,932	-
Enatai Elementary School CO8375	7	-	-	94,706	-
Holiday Inn Express/Staybridge Suite Hotel	7	(2,077)	-	140,343	-
King County Courthouse - COBP	7	-	-	(32,810)	-
Metric Townhomes (formally Townvue Townhomes)	7	-	-	-	23
Seattle Boat Newport	7	6,521	-	6,512	-
Odle Middle School - C07952	9	-	-	41,726	-
Sammamish High School PO C07635	9	-	-	62,416	-
Factoria Recycling and Transfer Station	10	(474)	-	54,880	-
Aegis at Overlake	12	-	-	-	72
Bellevue Childrens Academy Phase I Expansion	12	-	-	17,668	-
Porsche Bld.Demolition - COBT	12	-	(14,115)	-	-
The Spring District	12	265,082	11,499	(201,664)	309
Vida Townhomes - Bldg A-I	12	-	-	-	41
Wintz Co - Self Storage Solutions	12	827	-	138,882	-
Midas Plaza	13	7,489	(20,478)	-	-
Total		1,334,296	269,132	819,674	1,870

Source: City of Bellevue Planning & Community Development Department and Development Services Department

Table 4 Approved Development Aggregated by MMA (As of December 31, 2015)

MMA	Subarea	Office (sqft)	Retail (sqft)	Others (sqft)	MF (units)	SF (units)
1	North Bellevue	8,052.0	-	21,026	-	3
2	Birdle Trails	-	-	-	-	1
3	Downtown Bellevue	1,050,331	258,648	468,057	1,209	-
4	Wilburton	-	76,528	-	31	-
5	Crossroads	6,435	(41,335)	7,932	194	-
6	Northeast Bellevue	-	795	2,152	-	-
7	South Bellevue	4,444.0	-	208,751	23	8
8	Richards Valley	-	-	-	-	5
9	East Bellevue	6,712	300	104,142	-	5
10	Eastgate	(474)	228	63,080	-	(1)
11	Southeast Bellevue	-	(2,816)	(3,612)	-	39
12	BelRed/Northup	265,909	(53,303)	(39,195)	422	-
13	Factoria	7,489.0	(20,478)	362	3	24
14	Newport Hills	-	-	-	-	1
Total		1,348,898	218,567	832,695	1,882	85

Source: City of Bellevue Planning & Community Development Department and Development Services Department

Table 5 Existing Plus Approved Development for 2016 Concurrency Platform

MMA	Subarea	Office (sqft)	Retail (sqft)	Others (sqft)	MF (units)	SF (units)
1	North Bellevue	1,450,219	199,693	420,468	2,167	2,171
2	Bridle Trails	697,636.0	405,611	526,794	3,242	1,702
3	Downtown Bellevue	10,687,285	3,988,669	2,677,728	10,167	-
4	Wilburton	1,274,729.0	700,162	1,004,945	636	76
5	Crossroads	160,356	638,088	222,670	3,689	51
6	Northeast Bellevue	426,995.0	16,728	471,784	255	3,276
7	South Bellevue	1,180,053.0	258,791	1,435,451	2,021	2,606
8	Richards Valley	209,352.0	76,782	281,129	3,517	2,492
9	East Bellevue	550,260	435,931	1,258,211	2,514	6,790
10	Eastgate	4,012,219	468,693	1,988,981	654	240
11	Southeast Bellevue	140,261.0	126,960	934,448	1,017	8,348
12	BelRed/Northup	2,902,771	2,340,926	3,995,661	946	1
13	Factoria	1,479,406.0	836,386	393,353	1,150	359
14	Newport Hills	10,439.0	96,830	208,815	472	2,665
Total		25,181,981	10,590,250	15,820,438	32,447	30,777

Source: King County Tax Assessor's Office, City of Bellevue Planning & Community Development Department and 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 (mostly collected in spring, 2016) were used along with the 2015 existing intersection geometry and signal timing plans to calculate intersection V/C ratios for the existing condition. These counts were also used to adjust the outputs from the 2016 Base Model Platform (MP6-R13) to account for model validation differences.

Figure 3 CIP Projects (2015 - 2021)

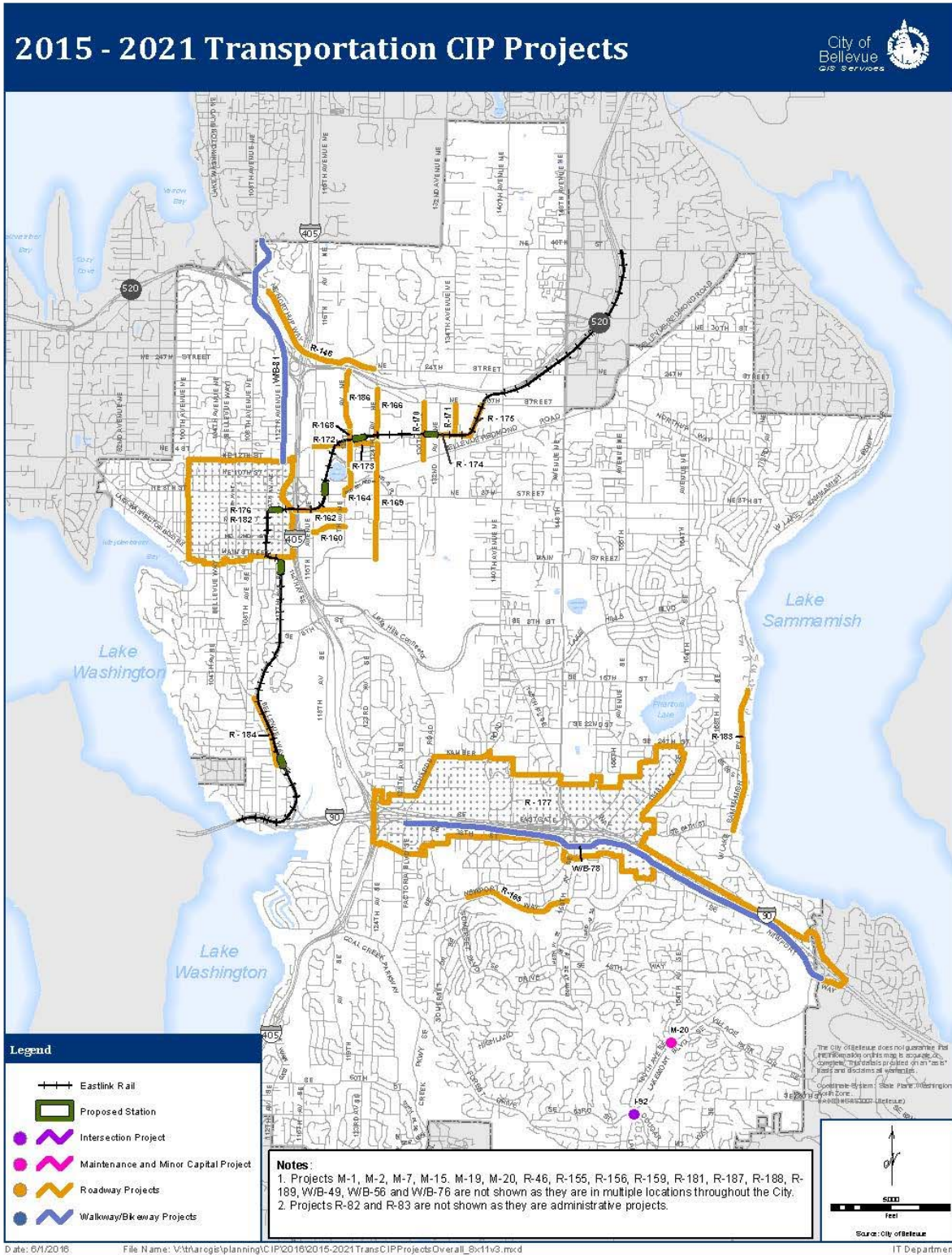


Table 6 CIP Capacity Projects (2015 - 2021)

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/164 th Avenue SE	A new traffic signal was installed at this intersection in 2015.
PW-R-160	NE 4th Street Extension	This project was completed in 2015. It constructed 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 included a new signalized intersection at NE 4th Street/120th Avenue NE and modified 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 18 th Street	This project will widen 124th Avenue NE from NE Spring Boulevard to NE 18 th 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 16 th Street.
PW-R-168	120th Avenue NE Improvements (Stage 3) - NE 12th Street to NE 16 th Street	This project will extend the 120th Avenue NE widening from NE 12th Street to NE 16 th 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 12 th Street.
PW-R-172	NE Spring Boulevard – 116 th Avenue NE to 120 th Avenue NE	This project will construct a new multi-modal arterial street connection between NE 12 th Street/116 th Avenue NE and 120 th Avenue NE. NE 12 th Street will be widened between 116 th Avenue NE and a new intersection with Spring Boulevard, to west of the Eastside Rail Corridor. The Spring Boulevard cross-section, between NE 12 th Street and 120 th Avenue NE, will include two travel lanes in each direction with turn pockets. The project will include modifications to the NE 12 th Street/116 th Avenue NE intersection and new signalized intersections at NE 12 th Street/NE Spring Boulevard and Spring Boulevard/120 th Avenue NE.
PW-R-174	NE Spring Boulevard – 130 th Avenue NE to 132 nd Avenue NE	This project will construct a new single lane westbound arterial street connection between 130 th and 132 nd Avenues NE. The project will install new traffic signals at both 130 th and 132 nd 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		2015 Existing Condition				2016 Concurrency Platform			
		V/C Ratio	Congestion Allowance	V/C Ratio	Remaining Capacity (V/C Ratio)	Congestion Allowance Consumed	Remaining Congestion Allowance	V/C Ratio	Remaining Capacity (V/C Ratio)	Congestion Allowance Consumed	Remaining Congestion Allowance
1	North Bellevue	0.85	3	0.61	0.24	0	3	0.62	0.23	0	3
2	Bridle Trails	0.80	4	0.64	0.16	1	3	0.64	0.16	1	3
3	Downtown	0.95	9	0.67	0.28	1	8	0.72	0.23	1	8
4	Wilburton	0.90	3	0.69	0.21	0	3	0.70	0.20	0	3
5	Crossroads	0.90	2	0.66	0.24	0	2	0.66	0.24	0	2
6	Northeast Bellevue	0.80	2	0.67	0.13	0	2	0.68	0.12	0	2
7	South Bellevue	0.85	4	0.65	0.20	0	4	0.68	0.17	1	3
8	Richards Valley	0.85	5	0.67	0.18	1	4	0.69	0.16	1	4
9	East Bellevue	0.85	5	0.78	0.07	1	4	0.79	0.06	2	3
10	Eastgate	0.90	4	0.63	0.27	1	3	0.64	0.26	1	3
11	Southeast Bellevue	0.80	3	0.57	0.23	2	1	0.57	0.23	1	2
12	BelRed/Northup	0.95	7	0.65	0.30	0	7	0.67	0.28	0	7
13	Factoria	0.95	5	0.77	0.18	0	5	0.79	0.16	0	5
14	Newport Hills	-	-	-	-	-	-	-	-	-	-

Average V/C Ratios Analysis by MMA

Under 2015 existing conditions, all MMAs meet their associated V/C ratio standards. The V/C ratios for individual MMAs ranged from 0.60 (MMA 11 - Southeast Bellevue) to 0.78 (MMA 9 – East Bellevue). The average remaining capacity (the difference between calculated V/C ratio and V/C ratio standard) ranges from 0.07 (MMA 9 – East Bellevue) to 0.30 (MMA 12 – BelRed/Northup). Remaining capacity is an indicator of how close an MMA is to exceeding the V/C ratio threshold and is the capacity available for accommodating future development before an MMA fails the concurrency standard.

Under the 2016 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 0.60 (MMA 11 - Southeast Bellevue) to 0.79 (MMA 9 - East Bellevue and MMA 13 - Factoria). The remaining capacity ranges from 0.06 (MMA 9 - East Bellevue) to 0.28 (MMA 12 - BelRed/Northup).

Intersection Congestion Allowance Analysis by MMA

Under 2015 existing conditions, the total number of intersections failing the MMA V/C standard is seven. This is well within the 56 maximum number of failing intersections allowed (congestion allowance) for all MMAs.

- Southeast Bellevue (MMA 11) has two intersections operating below the standard (three are allowed), the highest among all the MMAs. One other intersection barely meets the standard. This MMA should be closely monitored for concurrency compliance.
- Bridle Trails (MMA 2), Downtown (MMA 3), Richards Valley (MMA 8), East Bellevue (MMA 9), and Eastgate (MMA 10) each has one intersection operating below the respective standard.
- Wilburton (MMA 4), Crossroads (MMA 5), Northeast Bellevue (MMA 6), South Bellevue (MMA7), Bel-Red/Northup (MMA 12, and Factoria (MMA 13) do not have any intersections that are below their respective standard. However, each of these MMAs has at least one intersection that barely meets the standard, or is close to breaking the V/C threshold.
- North Bellevue (MMA 1) and Wilburton (MMA 4) do not have any intersections that operate either below or close to their respective standards.

Under the 2016 CP, with the CIP completed and approved developments in place, all MMAs meet their respective congestion allowance standards. Although the number of intersections failing the standard is expected to increase from seven to eight, this is still well within the 56 intersections allowed. Eighteen intersections are expected to approach their respective MMA's V/C thresholds. These intersections are listed in Table 8. The City will continue to closely monitor the operation of these intersections in the future.

- East Bellevue (MMA 9): the number of intersections below the standard is expected to increase from existing one to two, the highest among all the MMAs. Although it is within the five intersections allowed, four other intersections are approaching the standard threshold. This MMA should be closely monitored for concurrency compliance.
- Southeast Bellevue (MMA 11): the number of intersections below the standard is expected to decrease from existing two to one, this would be achieved through reconfiguring the signal phasing and timing plan at the Lakemont Blvd./SE Newport Way Intersection. However, two additional intersections are within a narrow range of the V/C threshold. Since the congestion allowance for this MMA is three, this MMA should also be closely monitored for concurrency.
- For the rest of MMAs, the analysis revealed no significant changes compare to the 2015 existing conditions, although slight increases in volume to capacity ratios are expected.

Table 8 Intersection V/C Standards Under 2016 Concurrency Platform

Intersection Cross Street	MMA	V/C Standard	2015 Existing Condition			2016 Concurrency Platform		
			V/C	Remaining Capacity	Standard Met?	V/C	Remaining Capacity	Standard Met?
148th Ave NE & NE 29th Place	2	0.80	0.93	-0.13	No	0.94	-0.14	No
140th Ave NE & NE 24th Street	2	0.80	0.74	0.06	Barely	0.76	0.04	Barely
112th Ave NE & NE 8th Street	3	0.95	1.06	-0.11	No	1.15	-0.20	No
112th Ave NE & NE 12th Street	3	0.95	0.83	0.12	Yes	0.91	0.04	Barely
156th Ave NE & Northup Way	5	0.90	0.81	0.09	Barely	0.81	0.09	Barely
164th Ave NE & NE 8th Street	6	0.80	0.76	0.04	Barely	0.78	0.02	Barely
118th Ave SE & SE 8th Street	7	0.85	0.85	0.00	Barely	0.86	-0.01	No
Lk Hills Connec & SE 8th St/7t	8	0.85	0.89	-0.04	No	0.89	-0.04	No
Richards Rd & Kamber Rd	8	0.85	0.83	0.02	Barely	0.82	0.03	Barely
148th Ave & Main Street	9	0.85	0.87	-0.02	No	0.89	-0.04	No
148th Ave SE & SE 16th Street	9	0.85	0.84	0.01	Barely	0.86	-0.01	No
148th Ave SE & Lake Hills Blvd	9	0.85	0.84	0.01	Barely	0.85	0.00	Barely
148th Ave NE & NE 8th Street	9	0.85	0.83	0.02	Barely	0.85	0.00	Barely
148th Ave SE & SE 24th Street	9	0.85	0.76	0.09	Barely	0.78	0.07	Barely
156th Ave & Main Street	9	0.85	0.76	0.09	Barely	0.77	0.08	Barely
150th Ave SE & I-90 EB Off-Ram	10	0.90	0.91	-0.01	No	0.91	-0.01	No
150th Ave SE & SE Eastgate Way	10	0.90	0.83	0.07	Barely	0.84	0.06	Barely
150th Ave SE & SE Newport Way	11	0.80	0.97	-0.17	No	0.97	-0.17	No
150th Ave SE & SE 38th Street	11	0.80	0.77	0.03	Barely	0.78	0.02	Barely
Lakemont Blvd & SE Newport Way	11	0.80	0.83	-0.03	No	0.77	0.03	Barely
148th Ave NE & Bel-Red Rd	12	0.95	0.86	0.09	Barely	0.87	0.08	Barely
116th Ave NE & NE 12th Street	12	0.95	0.69	0.26	Yes	0.87	0.08	Barely
128th Ave SE & SE 38th Place	13	0.95	0.93	0.02	Barely	0.94	0.01	Barely
I-405 SB Ramps & Coal Creek Park	13	0.95	0.85	0.10	Yes	0.88	0.07	Barely
128th Ave SE & SE 36th Street	13	0.95	0.85	0.10	Yes	0.86	0.09	Barely

Figures 4 and 5 depict the system intersection analysis results for the 2015 existing condition and the 2016 Concurrency Platform. Intersections operating below the concurrency standard (with V/C ratios exceeding the respective MMA V/C threshold) are shown in red. Intersections that barely meeting the concurrency 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 2015 Existing Condition (PM Peak) System Intersection Assessment

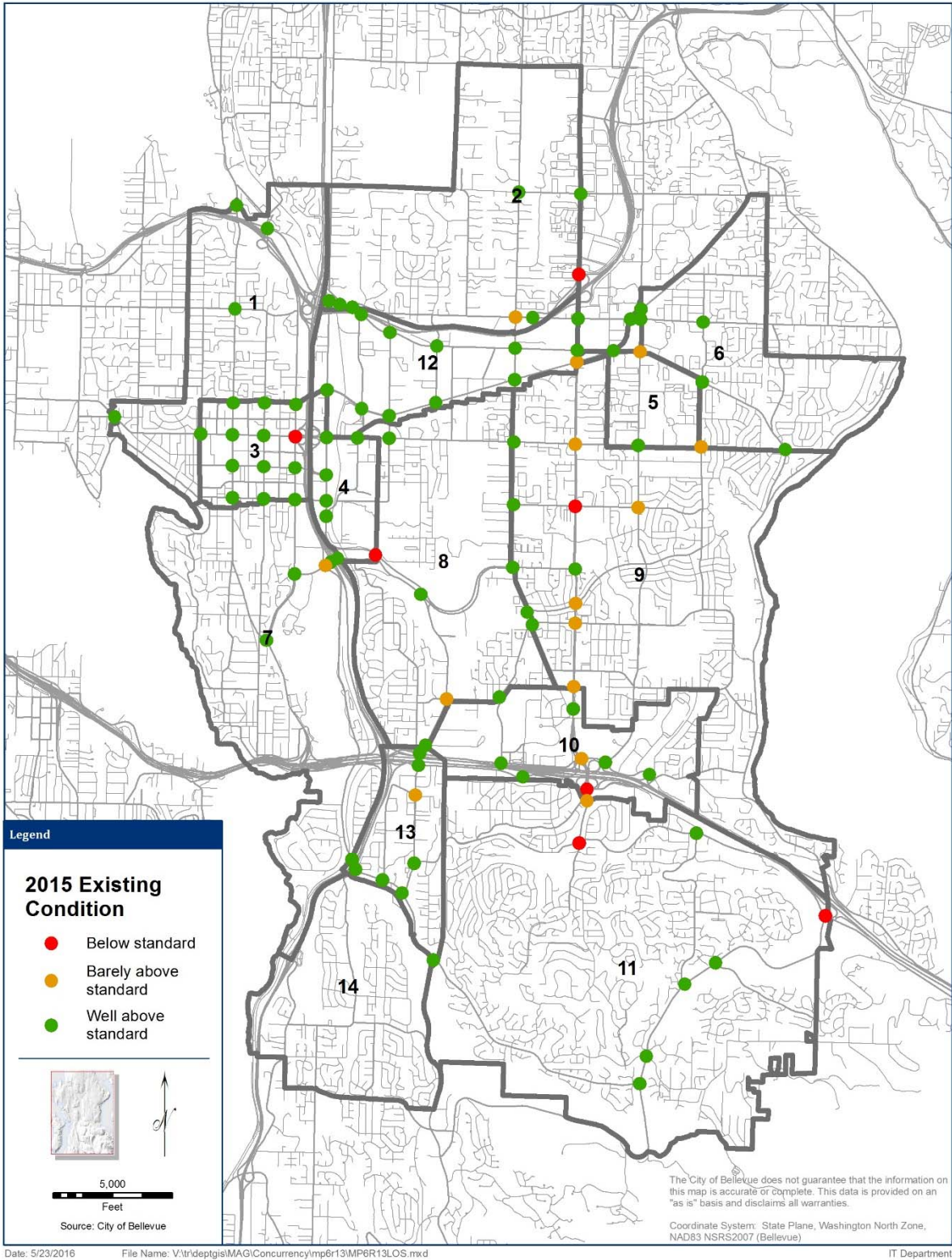
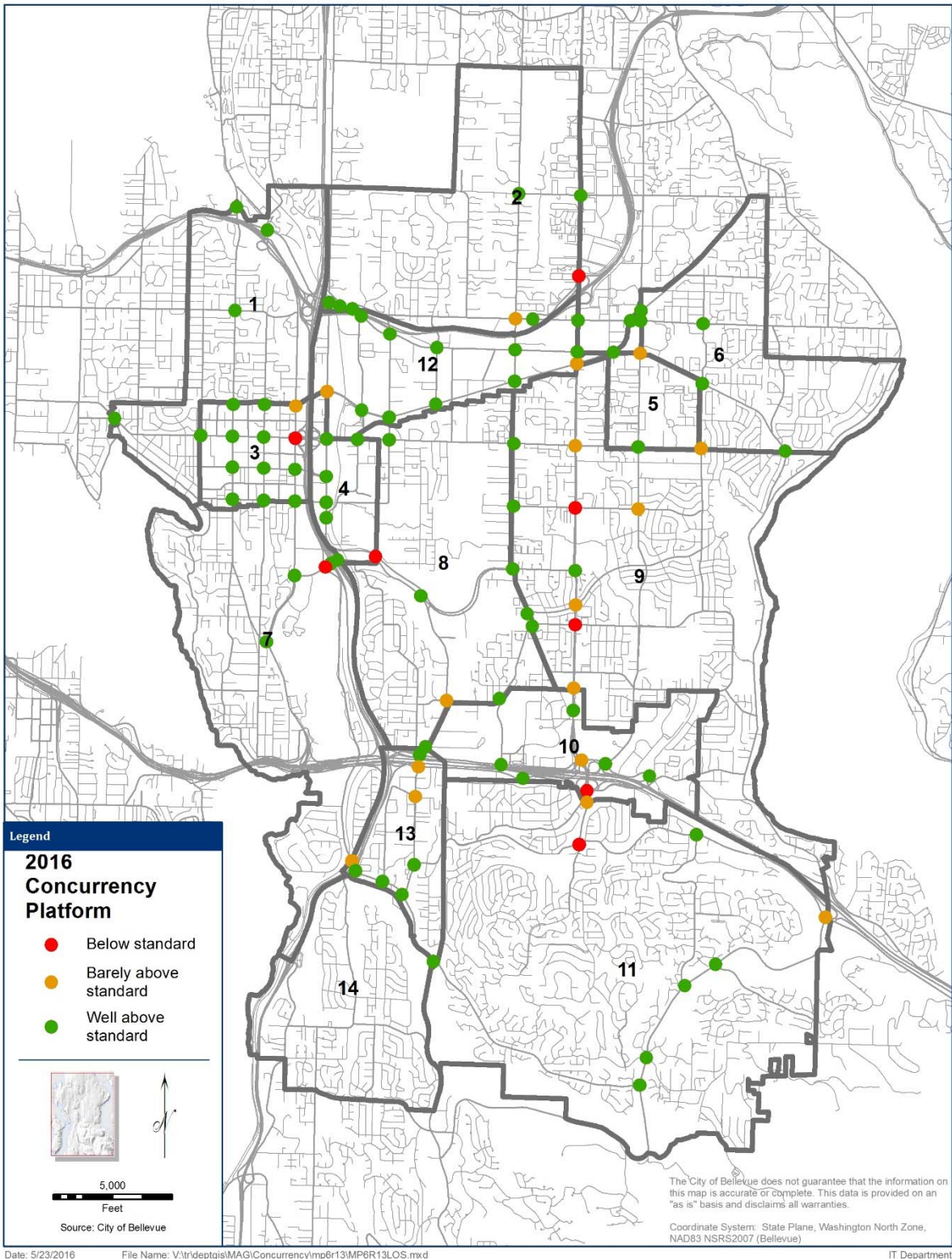


Figure 5 2016 CP (PM Peak) System Intersection Assessment



Conclusion

The funded transportation projects (2015-2021 CIP) are able to accommodate the increased demand associated with new development permitted through December 31, 2015. All MMAs meet their congestion allowance and all MMAs are within the average V/C ratios allowed by the concurrency standard.

Following the release of this Concurrency Update Report, the 2015 Concurrency Platform (2015 CP; model version MP6-R13) 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-R13 is the given model platform name and version where 6 represents 6 year forecasting period and R13 indicates release number 13. 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 Inc. 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: Analysis Results for All System Intersections

MMA 1: North Bellevue V/C Threshold 0.85

Intersection Streets		2015 Existing Condition		2016 C.P.	
		V/C	Standard Met?	V/C	Standard Met?
Bellevue Way NE	NE 24th Street	0.65	Yes	0.66	Yes
Bellevue Way NE	Northup Way NE	0.60	Yes	0.60	Yes
108th Ave NE	Northup Way NE	0.61	Yes	0.62	Yes
Lk Washington B	NE 1st/NE 10 St.	0.58	Yes	0.60	Yes
Areawide V/C		0.61		0.62	

MMA 2: Bridle Trail V/C Threshold 0.80

Intersection Streets		2015 Existing Condition		2016 C.P.	
		V/C	Standard Met?	V/C	Standard Met?
140th Ave NE	NE 24th Street	0.74	Barely	0.76	Barely
148th Ave NE	NE 40th Street	0.64	Yes	0.64	Yes
116th Ave NE	Northup Way NE	0.68	Yes	0.67	Yes
115th Place NE	Northup Way	0.58	Yes	0.54	Yes
Northup Way	NE 24th Street	0.49	Yes	0.48	Yes
140th Ave NE	NE 40th Street	-	N/A	-	N/A
148th Ave NE	NE 29th Place	0.93	No	0.94	No
NE 29th Place	NE 24th Street	0.43	Yes	0.44	Yes
Areawide		0.64		0.64	

MMA 3: Downtown V/C Threshold 0.95

Intersection Streets		2015 Existing Condition		2016 C.P.	
		V/C	Standard Met?	V/C	Standard Met?
100th Ave NE	NE 8th Street	0.67	Yes	0.69	Yes
Bellevue Way NE	NE 12th Street	0.68	Yes	0.69	Yes
Bellevue Way NE	NE 8th Street	0.57	Yes	0.60	Yes
Bellevue Way NE	NE 4th Street	0.51	Yes	0.59	Yes
Bellevue Way	Main Street	0.74	Yes	0.77	Yes
108th Ave NE	NE 12th Street	0.44	Yes	0.48	Yes
108th Ave NE	NE 8th Street	0.58	Yes	0.62	Yes
108th Ave NE	NE 4th Street	0.61	Yes	0.71	Yes
108th Ave	Main Street	0.58	Yes	0.67	Yes
112th Ave NE	NE 12th Street	0.83	Yes	0.91	Barely
112th Ave NE	NE 8th Street	1.06	No	1.15	No
112th Ave	Main Street	0.73	Yes	0.75	Yes
112th Ave NE	NE 4th Street	0.66	Yes	0.73	Yes
Areawide		0.67		0.72	

MMA 4: Wilburton

V/C Threshold 0.90

Intersection Streets		2015 Existing Condition		2016 C.P.	
		V/C	Standard Met?	V/C	Standard Met?
116th Ave NE	NE 8th Street	0.60	Yes	0.58	Yes
116th Ave	Main Street	0.62	Yes	0.67	Yes
116th Ave SE	SE 1st Street	0.69	Yes	0.72	Yes
116th Ave NE	NE 4th Street	0.78	Yes	0.77	Yes
120th Ave NE	NE 8th Street	0.75	Yes	0.77	Yes
Areawide		0.69		0.70	

MMA 5: Crossroads

V/C Threshold 0.90

Intersection Streets		2015 Existing Condition		2016 C.P.	
		V/C	Standard Met?	V/C	Standard Met?
Bellevue-Redmond	NE 20th Street	0.51	Yes	0.49	Yes
156th Ave NE	Northup Way	0.81	Barely	0.81	Barely
156th Ave NE	NE 8th Street	0.67	Yes	0.69	Yes
Areawide		0.66		0.66	

MMA 6: North-East Bellevue

V/C Threshold 0.80

Intersection Streets		2015 Existing Condition		2016 C.P.	
		V/C	Standard Met?	V/C	Standard Met?
164th Ave NE	NE 24th Street	0.61	Yes	0.62	Yes
164th Ave NE	Northup Way	0.64	Yes	0.64	Yes
164th Ave NE	NE 8th Street	0.76	Barely	0.78	Barely
Northup Way	NE 8th Street	-	N/A	-	N/A
Areawide		0.67		0.68	

MMA 7: South Bellevue

V/C Threshold 0.85

Intersection Streets		2015 Existing Condition		2016 C.P.	
		V/C	Standard Met?	V/C	Standard Met?
112th Ave SE	Bellevue Way SE	0.67	Yes	0.69	Yes
112th Ave SE	SE 8th Street	0.55	Yes	0.51	Yes
118th Ave SE	SE 8th Street	0.85	Barely	0.86	No
I-405 NB Ramps	SE 8th Street	0.64	Yes	0.70	Yes
I-405 SB Ramps	SE 8th Street	0.57	Yes	0.66	Yes
Areawide		0.65		0.68	

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

MMA 8: Richards Valley V/C Threshold 0.85

Intersection Streets		2015 Existing Condition		2016 C.P.	
		V/C	Standard Met?	V/C	Standard Met?
124th Ave NE	NE 8th Street	0.70	Yes	0.70	Yes
140th Ave SE	SE 8th Street	0.70	Yes	0.71	Yes
145th Place SE	Lake Hills Blvd	0.58	Yes	0.59	Yes
145th Place SE	SE 16th Street	0.67	Yes	0.69	Yes
Lk Hills Connec	SE 8th St/7t	0.89	No	0.89	No
Richards Rd	Kamber Rd	0.83	Barely	0.82	Barely
Richards Rd	SE 32nd Street	0.55	Yes	0.64	Yes
Richards Rd	Lk Hills Connec	0.56	Yes	0.57	Yes
139th Ave SE	Kamber Road	0.56	Yes	0.56	Yes
Areawide		0.67		0.69	

MMA 9: East Bellevue V/C Threshold 0.85

Intersection Streets		2015 Existing Condition		2016 C.P.	
		V/C	Standard Met?	V/C	Standard Met?
140th Ave NE	NE 8th Street	0.73	Yes	0.74	Yes
140th Ave	Main Street	0.70	Yes	0.72	Yes
148th Ave NE	NE 8th Street	0.83	Barely	0.85	Barely
148th Ave	Main Street	0.87	No	0.89	No
148th Ave SE	Lake Hills Blvd	0.84	Barely	0.85	Barely
148th Ave SE	SE 16th Street	0.84	Barely	0.86	No
148th Ave SE	SE 24th Street	0.76	Barely	0.78	Barely
148th Ave SE	SE 8th Street	0.68	Yes	0.69	Yes
156th Ave	Main Street	0.76	Barely	0.77	Barely
Areawide		0.78		0.79	

MMA 10: Eastgate V/C Threshold 0.90

Intersection Streets		2015 Existing Condition		2016 C.P.	
		V/C	Standard Met?	V/C	Standard Met?
148th Ave SE	SE 27th Street	0.67	Yes	0.67	Yes
156th Ave SE	SE Eastgate Way	0.54	Yes	0.54	Yes
161st Ave SE	SE Eastgate Way	0.43	Yes	0.43	Yes
150th Ave SE	SE Eastgate Way	0.83	Barely	0.84	Barely
142nd Ave SE	SE 36th Street	0.66	Yes	0.72	Yes
150th Ave SE	I-90 EB Off-Ram	0.91	No	0.91	No
139th Ave SE	SE Eastgate Way	0.36	Yes	0.37	Yes
Areawide		0.63		0.64	

MMA 11: Southeast Bellevue V/C Threshold 0.80

Intersection Streets		2015 Existing Condition		2016 C.P.	
		V/C	Standard Met?	V/C	Standard Met?
150th Ave SE	SE Newport Way	0.97	No	0.97	No
150th Ave SE	SE 38th Street	0.77	Barely	0.78	Barely
Lakemont Blvd	SE 63rd St	0.38	Yes	0.40	Yes
Lakemont Blvd	SE Newport Way	0.83	No	0.77	Barely
Lakemont Blvd	Forest Drive	-	N/A	-	N/A
164th Ave SE	Lakemont Blvd	0.42	Yes	0.41	Yes
Village Park Dr	Lakemont Blvd	0.33	Yes	0.33	Yes
164th Ave SE	SE Newport Way	0.32	Yes	0.33	Yes
Areawide		0.57		0.57	

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

Intersection Streets		2015 Existing Condition		2016 C.P.	
		V/C	Standard Met?	V/C	Standard Met?
116th Ave NE	NE 12th Street	0.69	Yes	0.87	Barely
120th Ave NE	NE 12th Street	0.49	Yes	0.55	Yes
124th Ave NE	Bel-Red Rd	0.76	Yes	0.74	Yes
130th Ave NE	Bel-Red Rd	0.57	Yes	0.56	Yes
140th Ave NE	NE 20th Street	0.69	Yes	0.70	Yes
140th Ave NE	Bel-Red Rd	0.64	Yes	0.62	Yes
148th Ave NE	NE 20th Street	0.80	Yes	0.83	Yes
148th Ave NE	Bel-Red Rd	0.86	Barely	0.87	Barely
Bel-Red Rd	NE 24th Street	0.63	Yes	0.63	Yes
156th Ave NE	Bel-Red Rd	0.67	Yes	0.70	Yes
156th Ave NE	NE 24th Street	0.75	Yes	0.75	Yes
130th Ave NE	NE 20th Street	0.56	Yes	0.60	Yes
148th Ave NE	NE 24th Street	0.81	Yes	0.80	Yes
124th Ave NE	Northup Way NE	0.47	Yes	0.56	Yes
120th Ave NE	NE 20th Street	0.29	Yes	0.31	Yes
Areawide		0.65		0.67	

MMA 13: Factoria V/C Threshold 0.95

Intersection Streets		2015 Existing Condition		2016 C.P.	
		V/C	Standard Met?	V/C	Standard Met?
Coal Creek Park	Forest Drive	0.76	Yes	0.77	Yes
Richards Rd	SE Eastgate Way	0.76	Yes	0.80	Yes
128th Ave SE/Ne	SE Newport Way	0.82	Yes	0.82	Yes
SE Newport Way	Coal Creek Pkwy	0.69	Yes	0.70	Yes
128th Ave SE	SE 36th Street	0.85	Barely	0.86	Barely
I-405 NB Ramps	Coal Creek Park	0.53	Yes	0.53	Yes
I-405 SB Ramps	Coal Creek Park	0.85	Yes	0.88	Barely
128th Ave SE	SE 38th Place	0.93	Barely	0.94	Barely
124th Ave SE	Coal Creek Park	0.78	Yes	0.78	Yes
Areawide		0.77		0.79	

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