



October 1, 2005

CONCURRENCY UPDATE **LOS Snapshot as of June 30, 2005**

Introduction

The Washington State Growth Management Act (GMA) of 1990 requires that jurisdictions' infrastructure keep pace with development. The Act requires local jurisdictions to adopt ordinances that establish a *concurrency* measurement mechanism to determine the ability of the transportation system to support new development. The City of Bellevue's adopted Traffic Standards Code (TSC Chapter 14.10) establishes the city's transportation concurrency requirements, level of service (LOS) standards and methodologies, and compliance determination process.

This assessment of transportation concurrency is prepared annually 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 existing and concurrency transportation system LOS 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 may be explored to effectively accommodate changing conditions.

This report summarizes existing LOS analysis results as well as the future concurrency LOS forecast from the city's Concurrency Model platform (MP6-R7). This model takes into account existing mid-year 2005 development applications that had received either design review or building permit approvals from the City's Planning and Community Development Department (PCD) as of June 30, 2005. The transportation network assumed in the analysis is the 2004 existing roadway network, plus fully funded capacity improvement projects in the 2005-2011 Capital Investment Program (CIP) as adopted by the Bellevue City Council.

The concurrency snapshot reflects short-range projections about average traffic conditions within the city during the PM peak 2 hour period. The conditions described represent computed volume-to-capacity (v/c) ratios for 104 "system" intersections within fourteen Mobility Management Areas (MMAs). System intersections are arterial street intersections controlled (and to be controlled) by traffic signals, and MMAs are geographic sub-areas of the city, designated for traffic analysis purposes.

Methodology

The analysis documented in this report is based on the Highway Capacity Manual (HCM) 2009/2-Hour average method updated in 2000. This is the City's adopted LOS analysis procedure as outlined in the Traffic Standards Code (Chapter 14.10) and as implemented in UFOSNET 6.3 software. The city adopted this method in 1998.

Based on the 2000 HCM 209 document, the operational method provides a complex set of procedures to intersection-specific geometric, traffic and signal conditions to a performance rating, including:

- 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 has been assumed over the two-hour period, as represented by a peak hour factor (PHF) of 1.
- Intersection utilization is estimated and reported in v/c ratios.
- The intersection v/c ratios are averaged for the system intersections in each MMA and then compared with the adopted standards for each MMA to estimate available reserved capacity.
- Each sub-area has a “congestion allowance”, which is the maximum number of intersections allowed to exceed the standard v/c ratio for that sub-area.
- Lastly, a development is considered concurrent if its 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.

Note: This LOS snapshot was prepared at a PROGRAM level as opposed to a PROJECT level (usually referred to as development review project modeling). This distinction is important because the two approaches produce slightly different results. At the PROGRAM level, all analysis is done using the city's 6-year EMME/2 travel demand model platform (MP6), including trip generation, where broad categorical trip rates are used. In contrast, a PROJECT level concurrency analysis involves a combined ITE (Institute of Transportation Engineers) and EMME/2 approach. Trip generation applies detailed ITE based trip generation and pass-by percentage rates for the specific building size or use. The mode split for drive-alone and share-ride, traffic distribution and assignment modeling steps are done within the MP6 EMME/2 model.

Assumptions

LAND USE: The cities of Redmond and Kirkland provided their 2004 land use for validation of the 2004 existing BKR (Bellevue-Kirkland-Redmond) model platform. The land use estimates for Bellevue include all existing year 2004 land use extracted from the land use permit tracking system (AMANDA) as of December 31, 2004 and permitted developments approved by the City of Bellevue by the current update (June 30, 2005). These permitted developments represent the new increment of land use change for concurrency testing. Tables 1, 2 and 3 provide an MMA-level summary of new and permitted land use, the current estimate of the existing 2004 land use, and concurrency land use beyond mid-year 2005, respectively.

For the area outside of the Bellevue-Kirkland-Redmond modeling area, trip productions and attractions (instead of actual land use) were imported from the year 2000 and 2010 Puget Sound Regional Council (PSRC) models, and prorated for 2004.

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 from the assumed pro forma rates but the assumed rates provide reasonable averages that are consistent over time.

This concurrency update indicates that more than 2.28 million additional gross square feet (GSF) of non-residential development are being built in the city. A comparison of the land use totals by category for the 14 MMAs results in the following observations for concurrency:

1. Between the end of 2004 and June 30, 2005, the new and permitted office development is more than 853 KGSF, growing from about 31.7 million GSF to 32.6 million GSF. Of additional office space citywide, 93% is sited within Downtown Bellevue (MMA 3). Retail development increases by over 777 KGSF from about 10.4 million GSF to 11.2 million GSF. About 46% of the city's new retail land use is located on downtown sites.
2. The Other development category consists of hotels, churches, school buildings, social services, maintenance facilities and child care facilities, which total 651 KGSF citywide. Downtown Bellevue absorbs 45% of this growth. Bel-Red/Northrup, East Bellevue, Eastgate, Richards Valley and Newcastle MMAs each have more than 15 KGSF in the Other Landuse category. South Bellevue and Crossroads MMAs have smaller amounts.
3. Housing developments new since the end of 2004 or permitted by the end of June 2005 consist of 660 multi-family units and 59 single-family units. About 94% of new multi-family permitted development is in downtown Bellevue. The citywide residential development trend is 54% of single-family and 46% multifamily units.

**TABLE 1:
Summary of New & Permitted Land Use by MMA as of 6/30/05**

		COMMERCIAL DEVELOPMENT			DWELLING UNITS	
MMA	SUBAREA	OFFICE	RETAIL	OTHERS	S_Family	M_Family
1	North Bellevue	0	0	0	0	10
2	Bridle Trails	0	269,811	0	0	0
3	Downtown	795,726	355,950	294,127	0	621
4	Bel-Red/Northrup	16,199	60,131	231,356	0	0
5	Crossroads	0	0	11,278	0	0
6	Northeast Bellevue	0	0	0	0	0
7	South Bellevue	0	1,900	9,983	0	21
8	Richards Valley	26,983	0	84,356	0	0
9	East Bellevue	8,600	3,958	15,266	0	0
10	Eastgate	0	81,197	20,286	0	0
11	Newcastle	5,710	0	69,028	59	0
12	Overlake	0	4,500	0	0	0
13	Factoria	0	0	0	0	8
14	Newport Hills	0	0	0	0	0
TOTAL		853,218	777,447	651,323	59	660

Table 2: Base Year Land Use Summary as of 12/31/04

		COMMERCIAL DEVELOPMENT			DWELLING UNITS	
MMA	SUBAREA	OFFICE	RETAIL	OTHERS	S_Family	M_Family
1	North Bellevue	1,670,181	106,234	443,283	2,039	2,201
2	Bridle Trails	557,716	228,228	306,227	1,618	3,176
3	Downtown	6,817,970	3,487,883	1,161,575	13	3,785
4	Bel-Red/Northup	4,174,890	1,958,859	5,406,753	127	1,018
5	Crossroads	124,172	861,300	161,537	124	3,317
6	Northeast Bellevue	391,830	8,600	526,778	3,229	160
7	South Bellevue	1,269,735	96,595	1,238,294	2,607	2,070
8	Richards Valley	538,524	21,410	380,889	2,373	3,130
9	East Bellevue	593,380	424,361	1,720,724	7,130	2,891
10	Eastgate	2,934,533	312,114	2,988,924	293	818
11	Newcastle	140,167	65,368	583,020	8,367	1,084
12	Overlake	11,077,952	1,735,673	1,789,557	516	1,862
13	Factoria	1,427,820	930,868	389,410	322	1,112
14	Newport Hills	14,698	179,591	48,112	3,663	632
TOTAL		31,733,568	10,417,084	17,145,083	32,421	27,256

Table 3: Concurrency Land Use Summary as of 6/30/2005

(2004 Existing Land Use + Permitted Land Use by 2005 Mid-year)

		COMMERCIAL DEVELOPMENT			DWELLING UNITS	
MMA	SUBAREA	OFFICE	RETAIL	OTHERS	S_Family	M_Family
1	North Bellevue	1,670,181	106,234	443,283	2,039	2,211
2	Bridle Trails	557,716	498,039	306,227	1,618	3,176
3	Downtown	7,613,696	3,843,833	1,455,702	13	4,406
4	Bel-Red/Northup	4,191,089	2,018,990	5,638,108	127	1,018
5	Crossroads	124,172	861,300	172,815	124	3,317
6	Northeast Bellevue	391,830	8,600	526,778	3,229	160
7	South Bellevue	1,269,735	98,495	1,248,277	2,607	2,091
8	Richards Valley	565,507	21,410	380,889	2,373	3,130
9	East Bellevue	601,980	428,319	1,735,990	7,130	2,891
10	Eastgate	2,934,533	393,311	3,009,210	293	818
11	Newcastle	145,877	65,368	652,048	8,426	1,084
12	Overlake	11,077,952	1,740,173	1,789,557	516	1,870
13	Factoria	1,427,820	930,868	389,410	322	1,112
14	Newport Hills	14,698	179,591	48,112	3,663	632
TOTAL		32,586,786	11,194,531	17,796,406	32,480	27,916

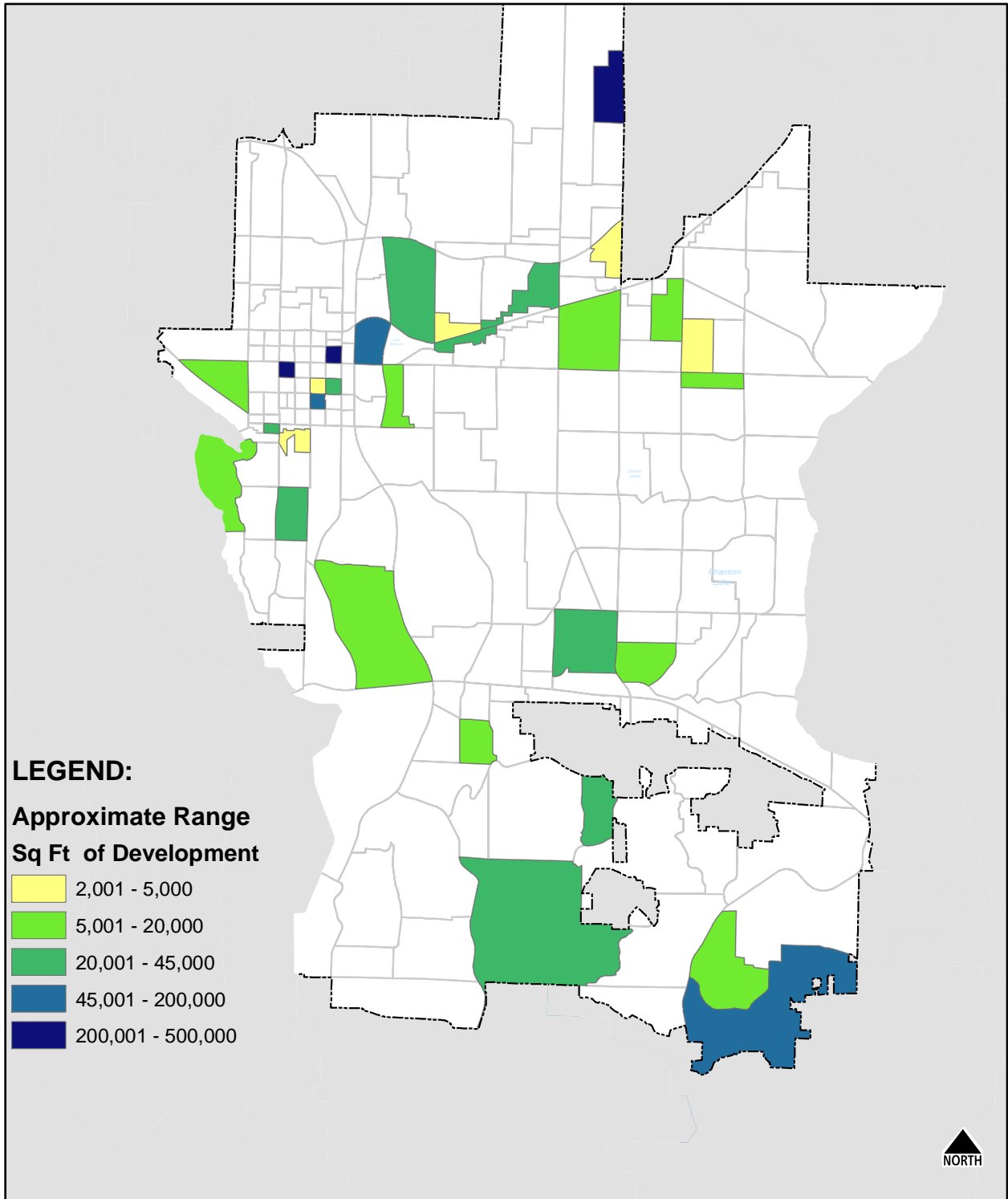
The major projects include several newly completed buildings in the areas outside the downtown including the Bridle Trails, Bel-Red/Northup, and Overlake MMAs. Several buildings are permitted or being constructed within Downtown Bellevue. Table 4 indicates the projects added, underway, or anticipated.

TABLE 4: Projects Contributing to Change (As of June 30, 2005)

Development Name	MMA	TAZ	Office	Retail	Other:	SF Units	MF Units
Fleming Townhomes	1	45	0	0	0	0	6
Four @ Fourth	1	45	0	0	0	0	4
Custom 79	1	49	0	0	0	0	0
Pro Sports Club Expansion – Ph 3-6	2	191	0	269,811	0	0	0
Ashwood Commons	3	42	16,851	17,867	0	0	448
Bellevue New City Hall	3	33	29,000	0	0	0	0
Bellevue Transit Center Rider Svs Bdg	3	32	0	2,736	0	0	0
Courtyard by Marriott	3	42	0	12,250	144,783	0	0
Lincoln Square Phase I Hotel / Condo	3	38	0	86,450	137,162	0	140
Lincoln Square Phase II Retail Podium	3	38	39,857	231,551	12,182	0	0
Lincoln Square Phase III North Tower	3	38	509,173	0	0	0	0
Main Place Mixed Use	3	17	6,337	5,096	0	0	33
The Summit -Building A-110 Bldg Exp	3	26	194,508	0	0	0	0
Barrier Audi Dealership	4	72	10,525	14,210	0	0	0
Overlake Hospital Medical Ctr – Exp	4	70	0	0	140,000	0	0
Coca Cola Check-In/Office	4	197	0	0	4,410	0	0
Coca Cola Fleet Maintenance Building	4	197	5,674	0	8,195	0	0
Coca Cola Warehouse Exp & Recycle	4	197	0	0	78,750	0	0
Jaguar/ Land Rover of Bellevue	4	75	0	27,400	0	0	0
Nissan of the Eastside at Bellevue	4	212	0	18,521	0	0	0
Crossroads Community Center	5	87	0	0	4,895	0	0
Central Park East Apt Bldg 5	5	82	0	0	6,383	0	0
Bellevue 118 Townhomes	7	126	0	0	0	0	6
Bellevue Duplexes	7	137	0	0	0	0	4
Warren Property Townhomes	7	135	0	0	0	0	11
Meydenbauer Reservoir Replacement	7	140	0	1,900	9,983	0	0
Odegard Gockel Building	8	200	26,983	0	0	0	0
Eastside Baha'i Faith Regional Center	9	210	8,600	0	3,965	0	0
First Mutual Bank	9	210	0	3,958	0	0	0
Bellevue Christian Reformed Church	9	76	0	0	11,301	0	0
BCC Bldg D 5th Floor & Skybridge	10	116	0	0	20,286	0	0
Jack in the Box / Starbucks	10	118	0	8,223	0	0	0
Michael's Toyota	10	118	0	72,974	0	0	0
Cougar Ridge West	11	163	0	0	0	59	0
Forest Ridge School	11	148	3,560	0	31,131	0	0
Lewis Creek Park	11	173	2,150	0	2,980	0	0
South Bellevue Community Center	11	147	0	0	34,917	0	0
Factoria East Villa	12	228	0	0	0	0	8
Fred Meyer Store Addition/Remodel	12	205	0	4,500	0	0	0
TOTAL			853,218	777,447	651,323	59	660

Note: Shaded cells are Downtown Bellevue sites (MMA 3).

Fig. 1: New Development Approved as of 6/30/05



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Figure 1 shows areas where these developments are located by the approximate range of square feet.

TRANSPORTATION: The funded 6-year 2005-2011 CIP is used for this analysis and report. The concurrency model network includes all funded projects that would add capacity to roadways and intersections. These capacity projects range from roadway widening, intersection signalization and channelization, and access improvements.

The current CIP roadway capacity projects are listed as follows:

- NE 29th Place Extension (R-60)
- Kamber Road Roadway Improvement (R-102)
- 150th Ave SE – Newport Way to SE 36th Street (R-105)
- Cougar Mountain Way Corridor Improvements (R-115)
- 148th Ave SE Roadway Improvement (R-117)
- SE 16th Street Improvements (R-118)
- Forest Drive Improvement (R-128)
- Northup Way – 120th to 124th Ave NE (R-133)
- 110th Avenue NE – NE 4th Street to NE 8th Street (R-139)
- NE 10th Street Extension (R-149)

The current CIP intersection capacity projects are listed as follows:

- I-405/Bellevue Downtown Access (I-46)
- 148th Avenue NE/Bel-Red Road (I-76)
- 148th Avenue NE/NE 20th Street (I-78)
- 112th Avenue SE/SE 6th Street Signal (I-88)
- Lakemont Boulevard/Village Park Drive Traffic Signal (I-89)
- 148th Avenue SE/Lake Hills Boulevard (I-90)

The 2005-2011 CIP capacity project locations are shown on the map in Figure 2.

This concurrency update includes the 2004 base year LOS analysis as a bench mark to compare concurrency LOS with or without the 2005-2011 CIP projects. The base year network reflects what is on the ground, including CIP capacity projects completed by the end of 2004.

TRAFFIC COUNTS: Figure 3 shows the change in observed Average Annual Weekday Traffic (AADT) in Bellevue between 2002 and 2004. Comparing the data indicates that in many locations citywide, average daily traffic volumes have stayed flat or increased slightly in the last two to three years. Table 4 shows the actual difference between 2003 and 2004 PM peak 2-hour average traffic volumes for all 104 system intersections in Bellevue, as well as 300 citywide intersections. As shown by Table 4, intersection PM peak hour volumes increased by an overall citywide average of 0.8% from 2003 to 2004, while system intersections show an average increase of 1.9%.

Figure 4 presents AADT trends on 10 Bellevue arterials between 1997 and 2004. The traffic trend was generally higher during 1998-2000 than in 2004. In the traffic data since 2000, a mixed trend of slightly downward or flat patterns is shown while three arterials, such as 116th Ave NE (S of Main), 148th Ave (S of SR-520) and Bel-Red Road (E of 132nd Ave), have increased in AADT.

Fig. 2: 2005-2011 CIP Capacity Projects

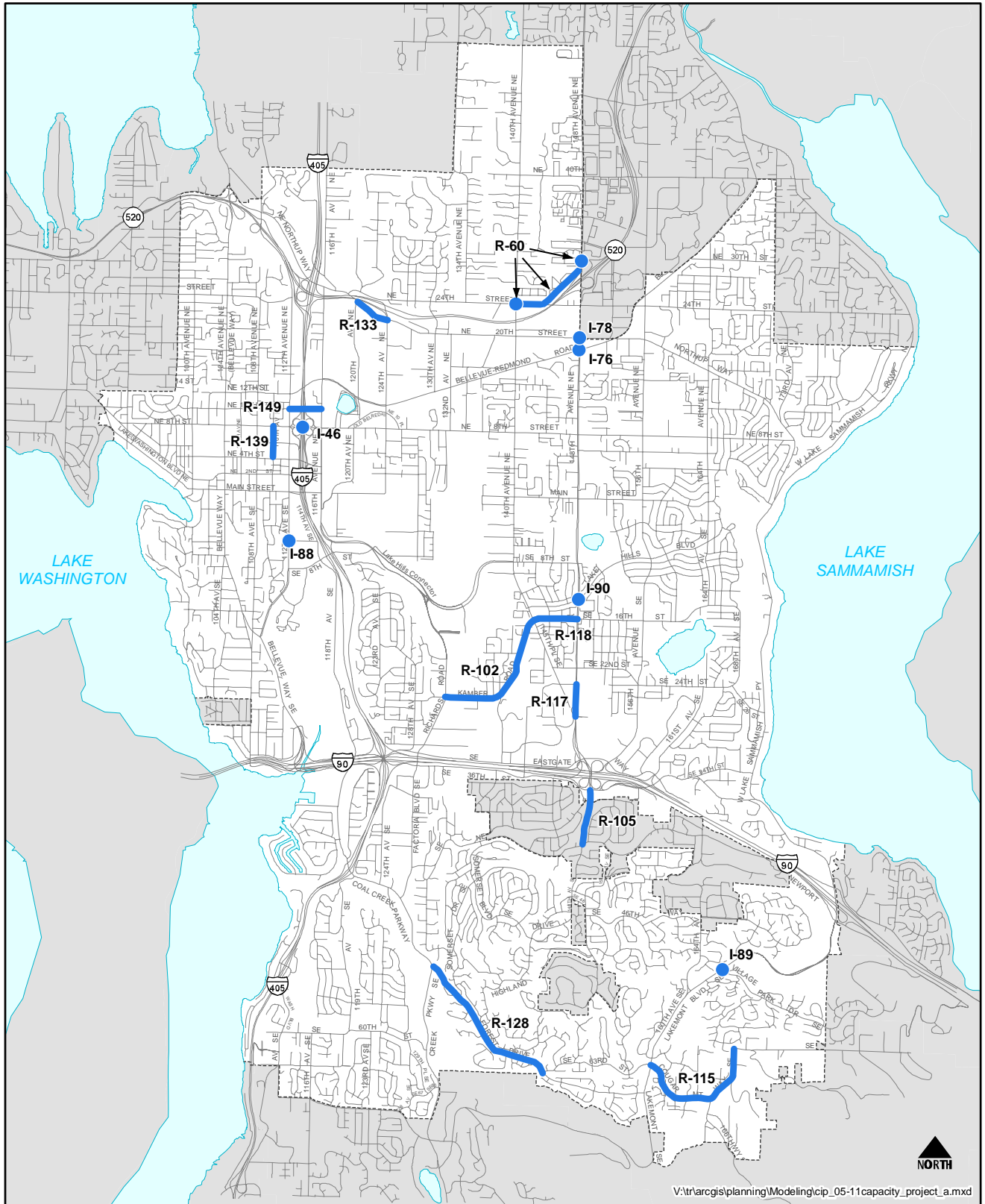
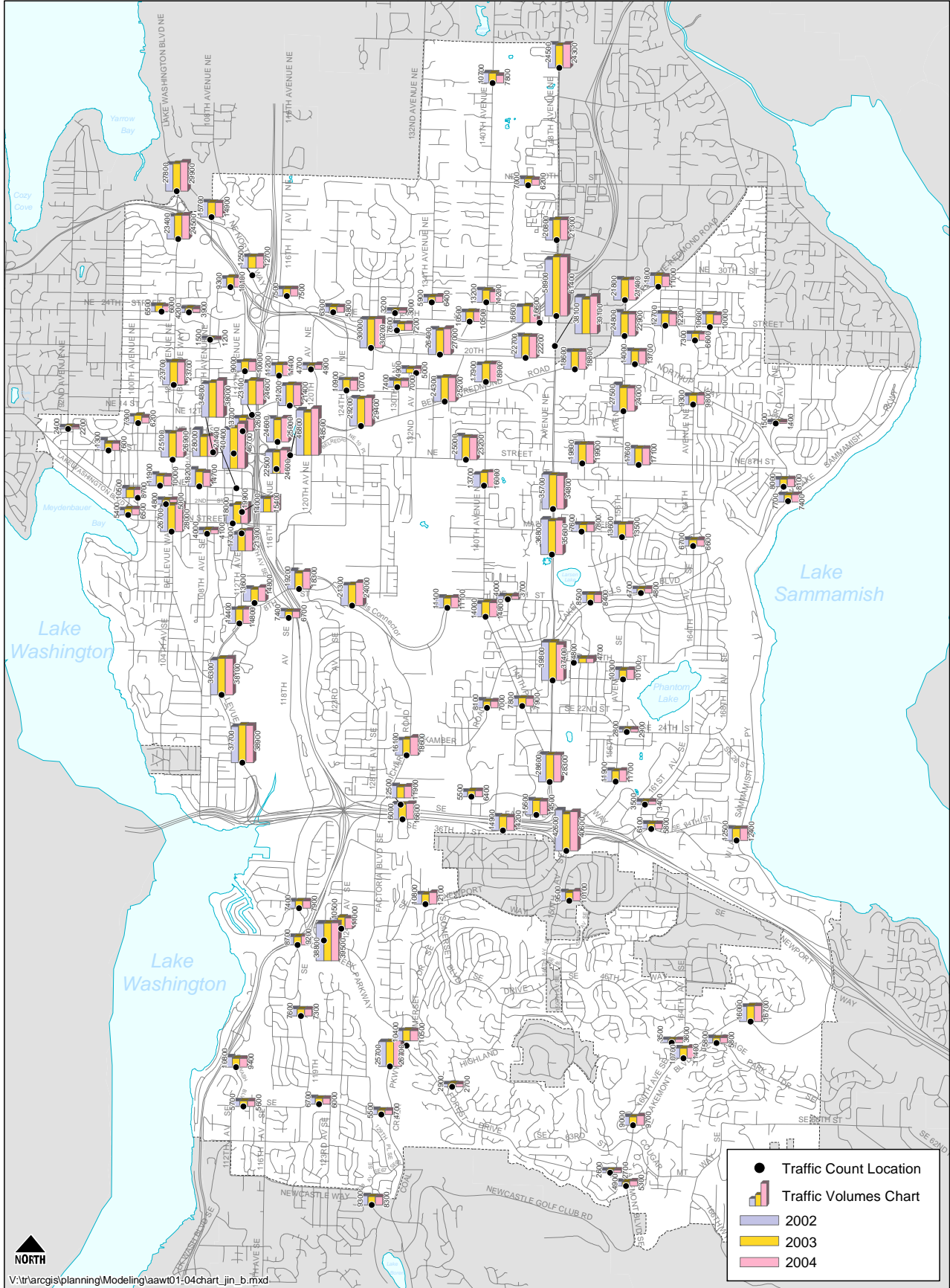


Fig. 3: 2002 - 2004 Average Annual Weekday Traffic



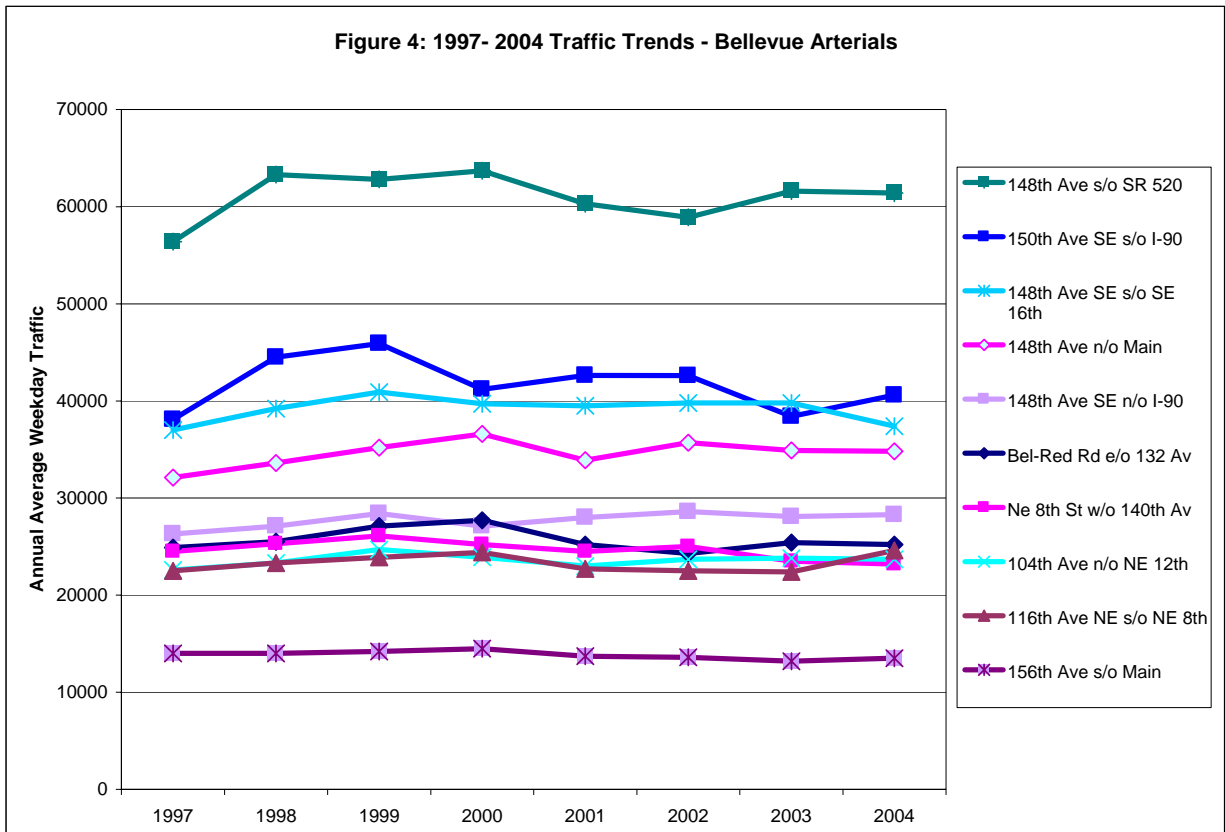


Table 4: Changes From 2003 to 2004 in PM Peak 2-Hour Average Intersection Volumes

MMA	#	Total Turning Movement Volumes for all MMA System Intersections											MMA Delta	% Change	
		NB_L	NB_T	NB_R	SB_L	SB_T	SB_R	EB_L	EB_T	EB_R	WB_L	WB_T			WB_R
North Bellevue	1	162	492	-166	38	211	196	173	20	-50	138	235	91	983	11.1%
Bridle Trails	2	-3	-48	-10	13	-11	1	-1	2	-1	57	3	-72	-70	-2.2%
Downtown	3	100	358	-119	-11	543	69	10	-881	65	68	-971	-66	-835	-2.1%
Bel-Red/Northup	4	77	124	40	-21	477	-147	-50	-268	122	166	48	-145	423	1.0%
Crossroads	5	4	-55	-17	11	109	20	0	-9	8	-7	23	10	83	0.9%
N-E Bellevue	6	-4	-32	0	-2	94	-1	-30	-1	56	-5	-26	11	61	1.1%
South Bellevue	7	-81	-43	-13	286	-124	-188	18	271	-38	109	113	116	426	3.6%
Richards Valley	8	144	130	-60	-43	163	47	-33	20	424	71	19	-35	847	5.6%
East Bellevue	9	35	116	11	31	61	60	-43	-63	57	70	25	64	424	1.5%
Eastgate	10	-79	-105	-68	13	-358	-89	-98	-221	64	-69	-24	-267	-1301	-6.3%
Newcastle	11	21	-50	-73	-4	331	20	-7	-36	9	11	8	-2	227	2.4%
Overlake	12	137	652	-109	163	654	34	-31	-8	-43	-2	136	83	2228	4.2%
Factoria	13	32	107	67	448	356	71	127	124	49	122	101	32	1639	6.7%
Newport Hills	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
Other Non-System	0	-20	-818	-200	139	1536	-182	-258	-216	-461	147	-700	-218	-1099	-0.4%
Total All Intersections:		525	828	-717	1061	4042	-89	-223	-1266	261	876	-1010	-398	4036	0.8%
Total System Intersecs:		545	1646	-517	922	2506	93	35	-1050	722	729	-310	-180	5135	1.9%

NOTES:

NB_L Northbound Left	SB_L Southbound Left	EB_L Eastbound Left	WB_L Westbound Left
NB_T Northbound Thru	SB_T Southbound Thru	EB_T Eastbound Thru	WB_T Westbound Thru
NB_R Northbound Right	SB_R Southbound Right	EB_R Eastbound Right	WB_R Westbound Right

The 2004 base year PM peak 2 hour average counts were used along with the 2004 existing intersection geometry and signal timing plan to calculate system intersection volume to capacity v/c ratios for LOS analysis based on the 2000 HCM/209 method. The results are summarized at the MMA level, compared with City's LOS standards (Table 5), and shown in Table 6.

The concurrency model outputs from MP6-R7 were adjusted using a post processor to account for model validation differences. The base year 2004 2-hour average counts were used by the post processor to adjust the model output for the predicted concurrency intersection traffic volumes. Based on the forecast volume, intersection v/c ratio or LOS were analyzed for future 6-year conditions with and without the 2005-2011 CIP capacity projects (as shown in Table 7).

TABLE 5
Average Intersection
Levels Of Service (LOS) Definitions
[Range of Volume-to-Capacity Ratios with User Impressions]

LOS Categories	Average Volume-to-Capacity Ratios		Description <i>(Subjective Impression of User)</i>
LOS A	Less than or equal to 0.600		Highest drive comfort. Little delay. Free flow.
LOS B	0.601 - 0.70		High degree of drive comfort. Little delay.
LOS C	0.701 - 0.80		Some delays. Acceptable level of driver comfort. Efficient traffic operation.
LOS D	LOS D+ <i>(High D)</i>	0.801 - 0.85	Some driver frustration. Efficient traffic operation.
	LOS D- <i>(Low D)</i>	0.851 - 0.90	Increased driver frustration. Long cycle length.
LOS E	LOS E+ <i>(High E)</i>	0.901 - 0.95	Near capacity. Notable delays. Low driver comfort. Difficulty of signal progression.
	LOS E- <i>(Low E)</i>	0.951 - 1.00	At capacity. High level of congestion. High level of driver frustration.
LOS F	Greater than or equal to 1.001		Breakdown flow. Excessive delays.

Note: The information reported in Table 5 represents the City's adopted Traffic Standard Code (Chapter 14.10) for satisfying concurrency requirements under the Washington Growth Management Act. It is also used in the City of Bellevue Vital Signs as a transportation performance indicator.

LOS Snapshots

Table 6 compares average intersection Level of Service for existing conditions to the MMA standard. The LOS snapshots portray traffic conditions on an average scale for a two-hour PM peak period on a typical weekday, ignoring specific spikes in the demand pattern. Overall the two-hour v/c ratios do not fully reflect delays and backups that might occur due to unpredictable conditions such as weather or accidents, or special events of a temporary nature such as construction.

This section presents four LOS snapshots for comparison over time. One was previously reported and three are new (Appendix A provides a complete list of system intersections with PM peak 2-hour average v/c ratios and LOS for last year's and this year's concurrency update, including 2003, 2004 existing conditions, as well as 2010 and 2011 with or without the CIP capacity projects). They are:

1. 2003 Old Existing LOS Snapshot reporting observed year 2003 PM Peak 2-hour average traffic counts (See Table 6 for summary by MMA).
2. 2004 New Existing LOS Snapshot reporting observed year 2004 PM Peak 2-hour average traffic counts (See Table 6 for summary by MMA and Figure 5 for intersection specific details).

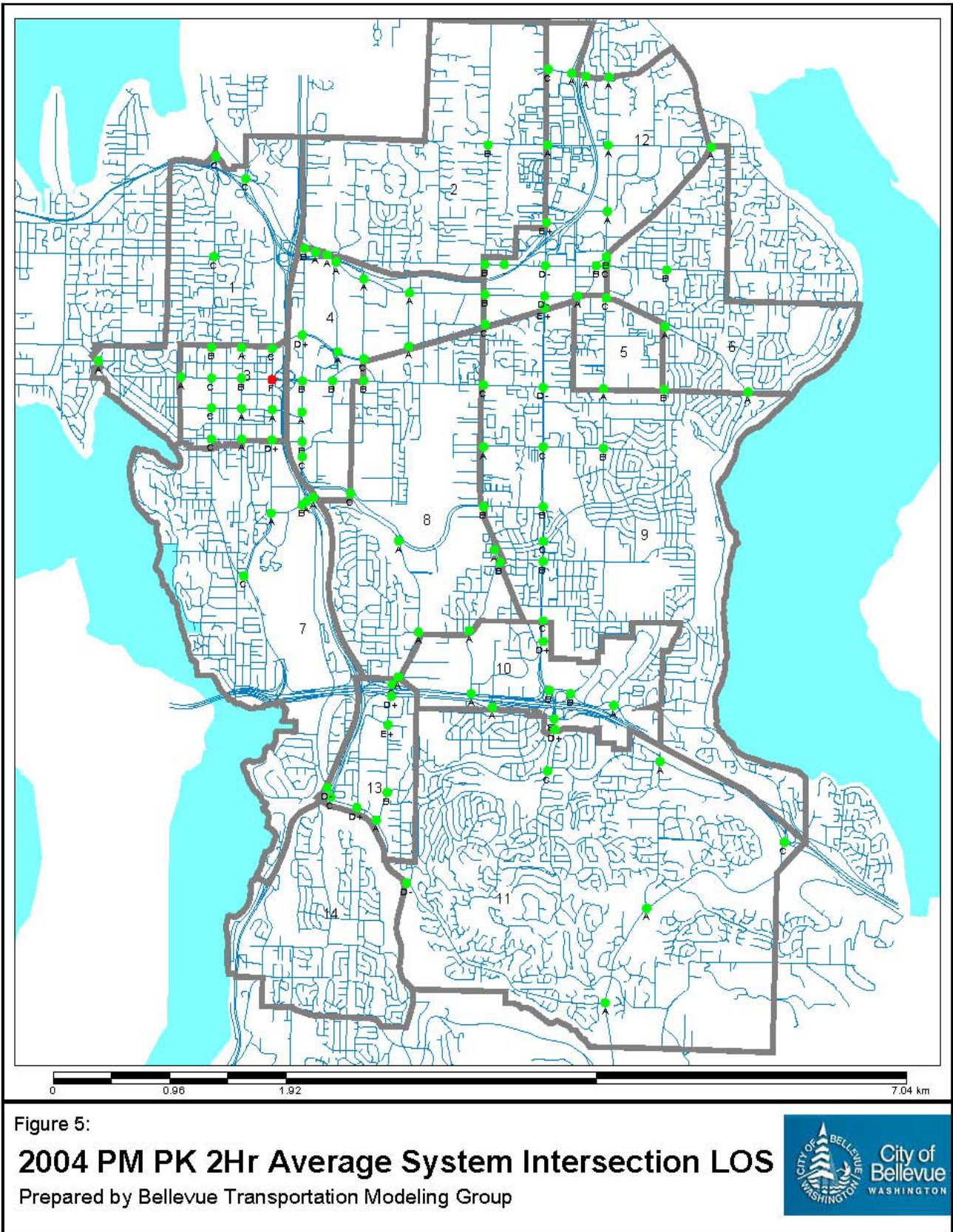
Table 6: Comparison of 2-Hour Average LOS in Annual Concurrency as of 6/30/05

--- 2000 Highway Capacity Manual (HCM) 209/Two-Hour Method

Based on existing 2-hour PM peak average counts.				2003 Existing <i>Based on 2003 Counts</i>			2004 Existing <i>Based on 2004 Counts</i>			Change in V/C Ratio* From 2003 to 2004		
MMA#	MMA Name	LOS Standard (Volume/ Capacity Ratios)	No of Intersections Allowed Over the Standard	Average V/C Ratio	% Capacity Available	No of Intersections Over the Standard	Average V/C Ratio	% Capacity Available	No of Intersections Over the Standard			
1	North Bellevue	0.85	3	0.658	23%	0	0.634	25%	0	-0.024		
2	Bridle Trails	0.80	2	0.542	32%	0	0.504	37%	0	-0.038		
3	Downtown	0.95	9	0.667	30%	1	0.644	32%	1	-0.023		
4	Bel-Red/Northup	0.90	10	0.601	33%	0	0.617	31%	0	0.016		
5	Crossroads	0.90	2	0.619	31%	0	0.629	30%	0	0.010		
6	North-East Bellevue	0.80	2	0.612	24%	0	0.624	22%	0	0.012		
7	South Bellevue	0.85	4	0.573	33%	0	0.590	31%	0	0.017		
8	Richards Valley	0.85	5	0.524	38%	0	0.554	35%	0	0.030		
9	East Bellevue	0.85	5	0.697	18%	0	0.705	17%	1	0.008		
10	Eastgate	0.90	4	0.678	25%	1	0.645	28%	1	-0.033		
11	Newcastle	0.80	3	0.817	-2%	1	0.795	1%	1	-0.022		
12	Overlake	0.95	9	0.640	33%	0	0.656	31%	0	0.016		
13	Factoria	0.95	5	0.733	23%	1	0.772	19%	0	0.039		
TOTAL			63				4				4	0.008

NOTES:

- MMA 14 Newport Hills has no signalized intersections, and is therefore not considered here.
- Only critical intersection movements and signal phasing/timing plans affect LOS results.
- Intersection volume reduction may contribute to v/c ratio decline, as may the 2004 completed CIP capacity projects.
- Positive v/c ratio changes indicate intersection degradation while negative means intersection improvements.
- In both 2003 and 2004, four intersections failed the LOS standards
- Five MMAs show v/c ratio declines (improvements) in the range of -0.022 to -0.038.
- Eight MMAs show v/c ratio increases (degradation) in the range of 0.008 to 0.039.



- 3 **Future Concurrency LOS Forecast without CIP Projects (No Action)** including land use permits as of June 30, 2005. However, the LOS calculation was based on existing intersection geometry and signal timing plans. For the purpose of comparison with the concurrency LOS, none of the 2005-2011 CIP projects were included (See Table 7 for summary by MMA).
- 4 **Future Concurrency LOS Forecast (CIP Scenario)** including land use permits as of June 30, 2005 and the Council adopted 2005-2011 CIP capacity projects. (See Table 7 for summary by MMA and Figure 5 for intersection specific details).

Table 7: Comparison of Concurrency System Intersection LOS Snapshots

--- 2000 Highway Capacity Manual (HCM) 209/Two-Hour Method

2011 MP6-R7 Concurrency Model Platform				2011 w/o 05-11 CIP 2004 Geometry			2011 w/ 05-11 CIP 05-11 CIP Geometry			Change in V/C Ratio* From without to with the 05- 11 CIP		
MMA#	MMA Name	LOS Standard (Volume/ Capacity Ratios)	No of Intersections Allowed Over the Standard	Average V/C Ratio	% Capacity Available	No of Intersections Over the Standard	Average V/C Ratio	% Capacity Available	No of Intersections Over the Standard			
1	North Bellevue	0.85	3	0.644	24%	0	0.637	25%	0	-0.007		
2	Bridle Trails	0.80	2	0.490	39%	0	0.492	39%	0	0.002		
3	Downtown	0.95	9	0.673	29%	1	0.654	31%	1	-0.019		
4	Bel-Red/Northup	0.90	10	0.621	31%	0	0.622	31%	0	0.001		
5	Crossroads	0.90	2	0.632	30%	0	0.642	29%	0	0.010		
6	North-East Bellevue	0.80	2	0.625	22%	0	0.619	23%	0	-0.006		
7	South Bellevue	0.85	4	0.584	31%	0	0.579	32%	0	-0.005		
8	Richards Valley	0.85	5	0.554	35%	0	0.542	36%	0	-0.012		
9	East Bellevue	0.85	5	0.698	18%	1	0.714	16%	1	0.016		
10	Eastgate	0.90	4	0.643	29%	1	0.555	38%	0	-0.088		
11	Newcastle	0.80	3	0.802	0%	1	0.740	8%	0	-0.062		
12	Overlake	0.95	9	0.667	30%	0	0.677	29%	1	0.010		
13	Factoria	0.95	5	0.773	19%	0	0.768	19%	0	-0.005		
TOTAL			63				4				3	-0.165

NOTES:

- MMA 14 Newport Hills has no signalized intersections, and is therefore not considered here.
- Change in v/c ratio is due to the 2005-2011 CIP capacity projects or/and traffic redistribution..
- The number of system intersections that would fail the LOS standards drops from four to three, and the overall v/c ratio shows a decline (or improvement), with the CIP projects completed.
- With the CIP projects completed, eight MMAs show a decline in v/c ratio from -0.005 to -0.088,
- With the CIP projects completed, five MMAs show an increase in v/c ratio of 0.001 to 0.016.

Findings

An overview of the above LOS Snapshots indicates the following:

Existing LOS Snapshot (traffic related to existing land use compared for 2003 and 2004 as shown in Table 6):

- The number of intersections failing the LOS MMA standards remained at four in 2003 and 2004. These quantities of failing intersections do not approach the maximum number of failing intersections allowed (congestion allowance) in any MMA.

- In eight of 13 MMAs, the average v/c ratio increased (degradation), resulting in less available capacity in the Bel-Red/Northup, Crossroads, North-East Bellevue, South Bellevue, Richards Valley, East Bellevue, Overlake and Factoria MMAs. MMA v/c ratios increased in the range of 0.008 (East Bellevue MMA) to 0.039 (Factoria MMA).
- In five of the 13 MMAs, the average v/c ratio declined (improvement), resulting in capacity gains in the North Bellevue, Bridle Trails, Downtown, Eastgate and Newcastle MMAs. MMA v/c ratios decline in the range of -0.022 (Newcastle MMA) to -0.038 (Bridle Trails MMA).
- All 14 MMAs were within their maximum number of intersections allowed over standard and were under the average v/c ratios (or LOS standard) allowed. However, the Newcastle MMA has only 1% reserve capacity before reaching its LOS standard of 0.800.

2011 No Action LOS (permitted land use without the 2005-2011 CIP projects) as shown Table 7 compared with Existing LOS Snapshot in Table 6:

- The 2011 LOS Snapshot without the CIP assumes that the City does not provide the programmed capacity improvement projects to offset the permitted land use. It is forecast that Newcastle MMA would fail its LOS standard as its average v/c ratio (0.802) would exceed its LOS standard (0.800) by 0.002.
- There would be four system intersections failing the LOS standards in 2011 without the 2005-2011 CIP capacity projects built, one each in the Downtown, East Bellevue, Eastgate and Newcastle MMAs, affecting the same MMAs as the 2004 existing condition.

Concurrency 2011 LOS Snapshot (permitted land use with the 2005-2011 CIP projects) compared with 2011 LOS Snapshot without CIP as shown in Table 7

- The 2011 LOS Snapshot with the 2005-2011 CIP assumes that the City completes the 2005-2011 programmed capacity improvement projects to offset the permitted land use. It is forecast that only three system intersections would fail the LOS standards.
- With the CIP completed by 2011, the Newcastle MMA would no longer fail its LOS standard but gain 8% available capacity.
- In comparison with the “No Action” scenario, the “2005-2011 CIP” scenario forecasts that in eight of the 13 MMAs, v/c ratios would decline, indicating a gain in reserved capacity in the range of 0.005 (South Bellevue and Factoria MMAs) to 0.088 (Eastgate MMA), including North Bellevue, Downtown, North-East Bellevue, Richards Valley, and Newcastle MMAs.
- With the “2005-2011 CIP” scenario, the Bridle Trails, Bel-Red/Northup, Crossroads, East Bellevue and Overlake MMAs were projected to increase their v/c ratios in the range of 0.001-0.016, resulting in a slight loss of reserve capacity when compared with the “No Action” scenario.

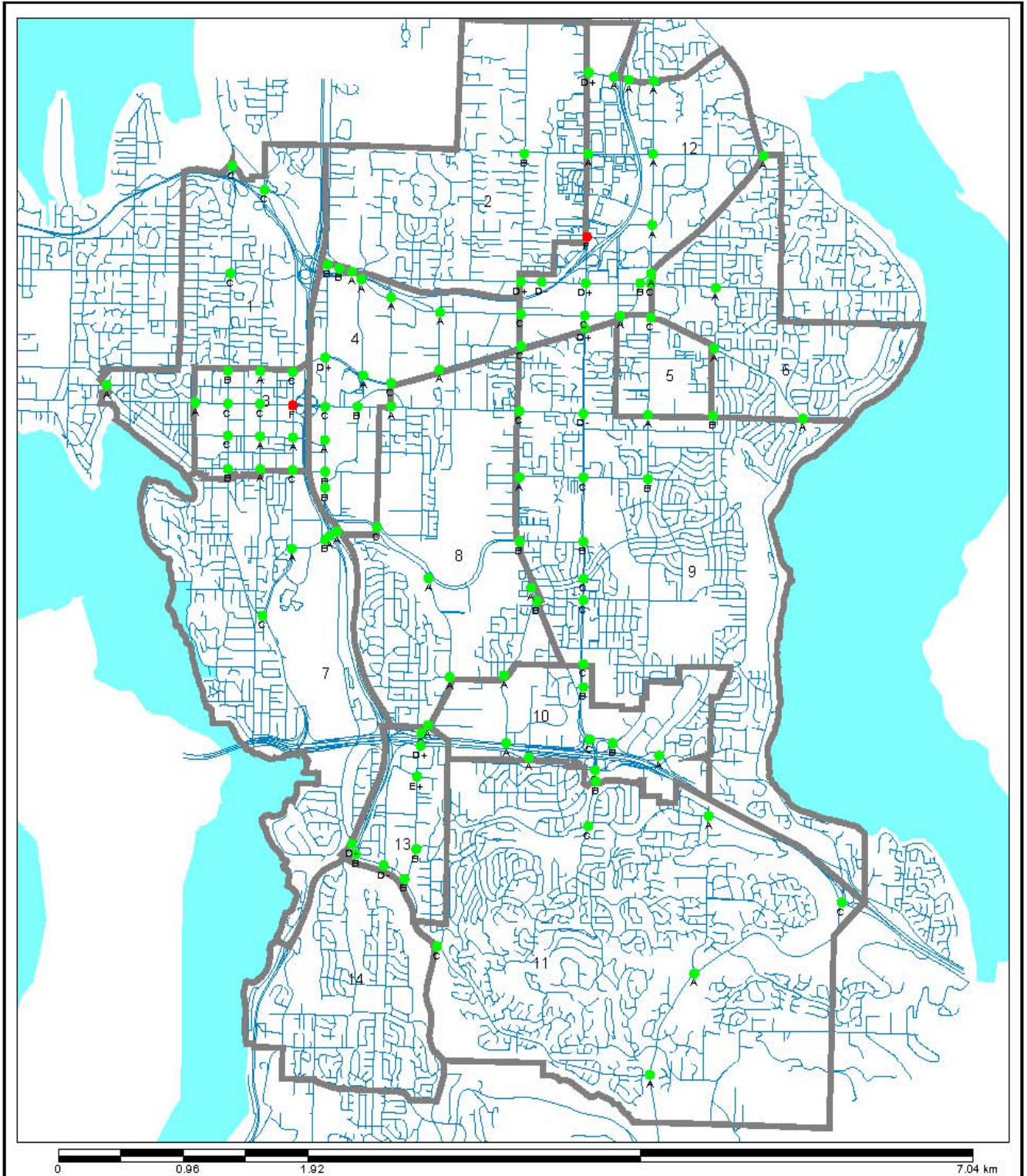


Figure 6:

2011 PM PK 2Hr Average System Intersection LOS w/2005-2011 CIP

Prepared by Bellevue Transportation Modeling Group



Discussion About Findings

The changes in the average LOS conditions are primarily attributable to the following reasons:

- ◆ Average 2 hour PM peak traffic volumes increased in Bellevue overall by about 2% in 2004 compared to 2003. The loss in reserve capacity can be attributed to the volume increase in the system intersections.
- ◆ In 2004, the completion of “Access Downtown” capacity projects helped the downtown MMA gain 2% additional reserve capacity. And also, the completed CIP projects in Eastgate MMA helped it to gain 3% in additional reserve capacity.
- ◆ By 2011, completed CIP capacity projects will contribute significantly to the transportation system improvements, reducing overall failed intersections from four to three, bringing Newcastle MMA within the LOS standard with 8% reserved capacity, and improving eight MMAs when compared with the “No CIP” scenario.

Concurrency analysis works as an effective tool to help planners proactively and systematically prioritize capacity improvement projects to facilitate land developments while maintaining the transportation system at acceptable standards. Implementation of 2005-2011 CIP capacity projects is necessary to prevent more system intersections and/or MMAs from exceeding LOS standards. In addition, the concurrency model platform (MP6-R7) will be used as a background condition for project-level development review modeling for one year until a new concurrency update is completed in 2006.

In conclusion, this concurrency update indicates the following:

- ◆ Despite increasing traffic volumes from 2003 to 2004, the completed CIP capacity projects such as “Access Downtown” helped relieve congestion by providing additional reserve capacity for the existing city-wide transportation system.
- ◆ The 2005-2011 CIP will mitigate the adverse traffic impact in eight MMAs while serving permitted land developments in the six-year short-term.
- ◆ The 2005-2011 CIP capacity projects, such as 148th SE improvement (R-117), 150th Ave SE (R-105) and Forest Drive (R-128), will significantly improve system intersections in the Eastgate and Newcastle MMAs, respectively. Particularly, the Newcastle MMA will be prevented from failing its LOS standard.
- ◆ Improved signal design, intersection channelization and markings, and continuous effort to improve signal system operations have added to arterial system operational efficiency.
- ◆ Bellevue improved the Bellevue-Kirkland-Redmond (BKR) region-wide model with increased transit focus and park and ride detail in the BKR area for the 2004 base year. The model will help determine what role transit system improvements may play in future concurrency determinations.

APPENDIX A:

**PM PEAK 2-HOUR AVERAGE LOS FOR 2003, 2004, AND 2010 AND 2011 WITH OR WITHOUT CIP
(BY Bellevue Modeling and Forecasting Group on 9/30/05)**

Area 1: North Bellevue											
INT	ADDRESS	2003PM2H	2004PM2H	10NO2CIP	11NO2CIP	2010CIP2	2011CIP2				
69	Bellevue Way NE NE 24th Street	0.606 B 0	0.715 C 0	0.626 B 0	0.728 C 0	0.626 B 0	0.720 C 0				
74	Bellevue Way NE Northup Way NE	0.643 B 0	0.791 C 0	0.648 B 0	0.801 D+0	0.648 B 0	0.798 C 0				
78	108th Ave NE Northup Way NE	0.708 C 0	0.755 C 0	0.702 C 0	0.762 C 0	0.702 C 0	0.754 C 0				
93	Lk Washington B NE 1st/NE 10 St.	0.315 A 0	0.276 A 0	0.316 A 0	0.283 A 0	0.316 A 0	0.277 A 0				
	Area wide average ->	0.568 A 0	0.634 B 0	0.573 A 0	0.644 B 0	0.573 A 0	0.637 B 0				
	LOS Threshold	0.850									
	Allowance	3	0	0	0	0	0				
Area 2: Bridle Trail											
INT	ADDRESS	2003PM2H	2004PM2H	10NO2CIP	11NO2CIP	2010CIP2	2011CIP2				
118	Northup Way NE 24th Street	0.542 A 0	0.504 A 0	0.532 A 0	0.490 A 0	0.532 A 0	0.492 A 0				
123	140th Ave NE NE 40th Street	----- -- 0	----- --- 0	----- --- 0	----- --- 0	----- --- 0	----- --- 0				
	Area wide average ->	0.542 A 0	0.504 A 0	0.532 A 0	0.490 A 0	0.532 A 0	0.492 A 0				
	LOS Threshold	0.800									
	Allowance	2	0	0	0	0	0				
Area 3: Downtown											
INT	ADDRESS	2003PM2H	2004PM2H	10NO2CIP	11NO2CIP	2010CIP2	2011CIP2				
3	100th Ave NE NE 8th Street	0.547 A 0	0.443 A 0	0.550 A 0	0.440 A 0	0.550 A 0	0.453 A 0				
5	Bellevue Way NE NE 12th Street	0.731 C 0	0.698 B 0	0.742 C 0	0.693 B 0	0.742 C 0	0.694 B 0				
7	Bellevue Way NE NE 8th Street	0.731 C 0	0.708 C 0	0.727 C 0	0.770 C 0	0.727 C 0	0.764 C 0				
8	Bellevue Way NE NE 4th Street	0.591 A 0	0.717 C 0	0.592 A 0	0.756 C 0	0.592 A 0	0.745 C 0				
9	Bellevue Way Main Street	0.761 C 0	0.722 C 0	0.771 C 0	0.709 C 0	0.771 C 0	0.693 B 0				
20	108th Ave NE NE 12th Street	0.391 A 0	0.398 A 0	0.410 A 0	0.431 A 0	0.410 A 0	0.455 A 0				
21	108th Ave NE NE 8th Street	0.603 B 0	0.661 B 0	0.588 A 0	0.738 C 0	0.588 A 0	0.713 C 0				
22	108th Ave NE NE 4th Street	0.522 A 0	0.447 A 0	0.535 A 0	0.464 A 0	0.535 A 0	0.451 A 0				
24	108th Ave Main Street	0.490 A 0	0.450 A 0	0.528 A 0	0.479 A 0	0.528 A 0	0.463 A 0				
25	112th Ave NE NE 12th Street	0.643 B 0	0.762 C 0	0.681 B 0	0.782 C 0	0.681 B 0	0.711 C 0				
26	112th Ave NE NE 8th Street	1.363 F 1	1.068 F 1	1.325 F 1	1.126 F 1	1.223 F 1	1.086 F 1				
36	112th Ave Main Street	0.759 C 0	0.815 D+0	0.790 C 0	0.851 D+0	0.790 C 0	0.766 C 0				
72	112th Ave NE NE 4th Street	0.532 A 0	0.477 A 0	0.616 B 0	0.513 A 0	0.616 B 0	0.508 A 0				
	Area wide average ->	0.667 B 0	0.644 B 0	0.681 B 0	0.673 B 0	0.673 B 0	0.654 B 0				
	LOS Threshold	0.950									
	Allowance	9	1	1	1	1	1				
Area 4: Bel-Red/Northup											
INT	ADDRESS	2003PM2H	2004PM2H	10NO2CIP	11NO2CIP	2010CIP2	2011CIP2				
29	116th Ave NE NE 12th Street	0.609 B 0	0.807 D+0	0.636 B 0	0.844 D+0	0.636 B 0	0.845 D+0				
30	116th Ave NE NE 8th Street	0.735 C 0	0.607 B 0	0.724 C 0	0.600 A 0	0.724 C 0	0.757 C 0				
32	120th Ave NE NE 12th Street	0.488 A 0	0.529 A 0	0.484 A 0	0.545 A 0	0.484 A 0	0.549 A 0				
34	124th Ave NE Bellevue-Redmond	0.728 C 0	0.780 C 0	0.743 C 0	0.786 C 0	0.596 A 0	0.779 C 0				
35	124th Ave NE NE 8th Street	0.645 B 0	0.616 B 0	0.634 B 0	0.598 A 0	0.634 B 0	0.586 A 0				
37	130th Ave NE Bellevue-Redmond	0.545 A 0	0.446 A 0	0.605 B 0	0.451 A 0	0.605 B 0	0.465 A 0				
68	130th Ave NE NE 20th Street	0.538 A 0	0.552 A 0	0.564 A 0	0.562 A 0	0.564 A 0	0.569 A 0				
73	116th Ave Main Street	0.601 B 0	0.694 B 0	0.622 B 0	0.709 C 0	0.622 B 0	0.687 B 0				
88	124th Ave NE Northup Way NE	0.663 B 0	0.572 A 0	0.690 B 0	0.581 A 0	0.605 B 0	0.524 A 0				
114	116th Ave NE Northup Way NE	0.665 B 0	0.667 B 0	0.673 B 0	0.691 B 0	0.673 B 0	0.680 B 0				
116	115th Place NE Northup Way	0.574 A 0	0.585 A 0	0.584 A 0	0.612 B 0	0.584 A 0	0.608 B 0				
117	120th Ave NE NE 20th Street	0.368 A 0	0.484 A 0	0.405 A 0	0.476 A 0	0.405 A 0	0.476 A 0				
131	116th Ave SE SE 1st Street	0.681 B 0	0.705 C 0	0.666 B 0	0.661 B 0	0.666 B 0	0.651 B 0				
139	116th Ave NE NE 4th Street	0.539 A 0	0.539 A 0	0.504 A 0	0.537 A 0	0.504 A 0	0.462 A 0				
233	120th Ave NE NE 8th Street	0.636 B 0	0.674 B 0	0.643 B 0	0.668 B 0	0.643 B 0	0.685 B 0				
	Area wide average ->	0.601 B 0	0.617 B 0	0.612 B 0	0.621 B 0	0.596 A 0	0.622 B 0				
	LOS Threshold	0.900									
	Allowance	10	0	0	0	0	0				

Area 5: Crossroads													
INT	ADDRESS		2003-PM	2004-PM	10NO-CIP	11NO-CIP	2010-CIP	2011-CIP					
58	Bellevue-Redmond NE 20th Street		0.549 A 0	0.516 A 0	0.573 A 0	0.518 A 0	0.573 A 0	0.534 A 0					
62	156th Ave NE Northup Way		0.712 C 0	0.786 C 0	0.725 C 0	0.785 C 0	0.725 C 0	0.796 C 0					
63	156th Ave NE NE 8th Street		0.594 A 0	0.584 A 0	0.597 A 0	0.592 A 0	0.597 A 0	0.596 A 0					
	Area wide average ->		0.619 B 0	0.629 B 0	0.632 B 0	0.632 B 0	0.632 B 0	0.642 B 0					
	LOS Threshold	0.900											
	Allowance	2	0	0	0	0	0	0					
Area 6: North-East Bellevue													
INT	ADDRESS		2003-PM	2004-PM	10NO-CIP	11NO-CIP	2010-CIP	2011-CIP					
75	164th Ave NE NE 24th Street		0.583 A 0	0.604 B 0	0.583 A 0	0.605 B 0	0.583 A 0	0.595 A 0					
76	164th Ave NE Northup Way		0.550 A 0	0.582 A 0	0.547 A 0	0.583 A 0	0.547 A 0	0.577 A 0					
87	164th Ave NE NE 8th Street		0.703 C 0	0.686 B 0	0.707 C 0	0.686 B 0	0.707 C 0	0.684 B 0					
111	Northup Way NE 8th Street		----- -- 0	----- --- 0	----- --- 0	----- --- 0	----- --- 0	----- --- 0					
	Area wide average ->		0.612 B 0	0.624 B 0	0.613 B 0	0.625 B 0	0.613 B 0	0.619 B 0					
	LOS Threshold	0.800											
	Allowance	2	0	0	0	0	0	0					
Area 7: South Bellevue													
INT	ADDRESS		2003-PM	2004-PM	10NO-CIP	11NO-CIP	2010-CIP	2011-CIP					
14	112th Ave SE Bellevue Way SE		0.653 B 0	0.724 C 0	0.653 B 0	0.732 C 0	0.653 B 0	0.726 C 0					
89	112th Ave SE SE 8th Street		0.608 B 0	0.588 A 0	0.615 B 0	0.578 A 0	0.615 B 0	0.574 A 0					
102	118th Ave SE SE 8th Street		0.624 B 0	0.671 B 0	0.706 C 0	0.641 B 0	0.706 C 0	0.631 B 0					
219	I-405 NB Ramps SE 8th Street		0.529 A 0	0.538 A 0	0.547 A 0	0.541 A 0	0.547 A 0	0.534 A 0					
226	I-405 SB Ramps SE 8th Street		0.450 A 0	0.429 A 0	0.453 A 0	0.431 A 0	0.453 A 0	0.429 A 0					
	Area wide average ->		0.573 A 0	0.590 A 0	0.595 A 0	0.584 A 0	0.595 A 0	0.579 A 0					
	LOS Threshold	0.850											
	Allowance	4	0	0	0	0	0	0					
Area 8: Richards Valley													
INT	ADDRESS		2003-PM	2004-PM	10NO-CIP	11NO-CIP	2010-CIP	2011-CIP					
43	140th Ave SE SE 8th Street		0.602 B 0	0.689 B 0	0.578 A 0	0.687 B 0	0.578 A 0	0.687 B 0					
44	145th Place SE Lake Hills Blvd		0.566 A 0	0.504 A 0	0.570 A 0	0.497 A 0	0.570 A 0	0.513 A 0					
45	145th Place SE SE 16th Street		0.665 B 0	0.687 B 0	0.662 B 0	0.685 B 0	0.620 B 0	0.637 B 0					
71	Lk Hills Connec SE 8th St/7t		0.717 C 0	0.779 C 0	0.704 C 0	0.775 C 0	0.704 C 0	0.781 C 0					
82	Richards Rd Kamber Rd		0.514 A 0	0.501 A 0	0.480 A 0	0.507 A 0	0.480 A 0	0.504 A 0					
85	Richards Rd SE 32nd Street		0.460 A 0	0.487 A 0	0.449 A 0	0.491 A 0	0.449 A 0	0.507 A 0					
134	Richards Rd Lk Hills Connec		0.326 A 0	0.444 A 0	0.325 A 0	0.445 A 0	0.325 A 0	0.368 A 0					
280	139th Ave SE Kamber Road		0.340 A 0	0.339 A 0	0.317 A 0	0.347 A 0	0.317 A 0	0.337 A 0					
	Area wide average ->		0.524 A 0	0.554 A 0	0.511 A 0	0.554 A 0	0.505 A 0	0.542 A 0					
	LOS Threshold	0.850											
	Allowance	5	0	0	0	0	0	0					
Area 9: East Bellevue													
INT	ADDRESS		2003-PM	2004-PM	10NO-CIP	11NO-CIP	2010-CIP	2011-CIP					
41	140th Ave NE NE 8th Street		0.792 C 0	0.737 C 0	0.786 C 0	0.739 C 0	0.786 C 0	0.746 C 0					
42	140th Ave Main Street		0.480 A 0	0.528 A 0	0.487 A 0	0.525 A 0	0.487 A 0	0.528 A 0					
49	148th Ave NE NE 8th Street		0.821 D+ 0	0.883 D- 1	0.835 D+ 0	0.884 D- 1	0.835 D+ 0	0.896 D- 1					
50	148th Ave Main Street		0.817 D+ 0	0.762 C 0	0.828 D+ 0	0.756 C 0	0.828 D+ 0	0.754 C 0					
51	148th Ave SE Lake Hills Blvd		0.743 C 0	0.739 C 0	0.773 C 0	0.730 C 0	0.773 C 0	0.745 C 0					
52	148th Ave SE SE 16th Street		0.717 C 0	0.698 B 0	0.729 C 0	0.691 B 0	0.729 C 0	0.718 C 0					
55	148th Ave SE SE 24th Street		0.668 B 0	0.722 C 0	0.687 B 0	0.697 B 0	0.687 B 0	0.761 C 0					
65	148th Ave SE NE 8th Street		0.615 B 0	0.626 B 0	0.630 B 0	0.621 B 0	0.630 B 0	0.625 B 0					
83	156th Ave Main Street		0.621 B 0	0.648 B 0	0.619 B 0	0.642 B 0	0.619 B 0	0.651 B 0					
	Area wide average ->		0.697 B 0	0.705 C 0	0.708 C 0	0.698 B 0	0.708 C 0	0.714 C 0					
	LOS Threshold	0.850											
	Allowance	5	0	1	0	1	0	1					

Area 10: Eastgate									
INT	ADDRESS		2003-PM	2004-PM	10NO-CIP	11NO-CIP	2010-CIP	2011-CIP	
56	148th Ave SE	SE 27th Street	0.841 D+ 0	0.836 D+ 0	0.698 B 0	0.850 D+0	0.554 A 0	0.601 B 0	0
86	156th Ave SE	SE Eastgate Way	0.745 C 0	0.666 B 0	0.757 C 0	0.659 B 0	0.757 C 0	0.620 B 0	0
92	161st Ave SE	SE Eastgate Way	0.351 A 0	0.376 A 0	0.362 A 0	0.378 A 0	0.362 A 0	0.408 A 0	0
101	150th Ave SE	SE Eastgate Way	0.836 D+ 0	0.672 B 0	0.931 E+ 1	0.680 B 0	0.937 E+ 1	0.714 C 0	0
171	142nd Ave SE	SE 36th Street	0.534 A 0	0.503 A 0	0.518 A 0	0.500 A 0	0.518 A 0	0.451 A 0	0
174	150th Ave SE	SE 38th Street	0.854 D- 0	0.844 D+ 0	0.846 D+ 0	0.829 D+0	0.586 A 0	0.625 B 0	0
227	150th Ave SE	I-90 EB Off-Ram	0.958 E- 1	0.954 E- 1	0.941 E+ 1	0.941 E+ 1	0.666 B 0	0.733 C 0	0
272	139th Ave SE	SE Eastgate Way	0.305 A 0	0.313 A 0	0.306 A 0	0.310 A 0	0.306 A 0	0.291 A 0	0
	Area wide average ->		0.678 B 0	0.645 B 0	0.670 B 0	0.643 B 0	0.586 A 0	0.555 A 0	0
	LOS Threshold	0.900							
	Allowance	4	1	1	2	1	1	0	0
Area 11: Newcastle									
INT	ADDRESS		2003-PM	2004-PM	10NO-CIP	11NO-CIP	2010-CIP	2011-CIP	
98	Coal Creek Park	Forest Drive	0.887 D- 1	0.859 D- 1	0.872 D- 1	0.895 D- 1	0.712 C 0	0.754 C 0	0
133	150th Ave SE	SE Newport Way	0.773 C 0	0.794 C 0	0.760 C 0	0.783 C 0	0.563 A 0	0.762 C 0	0
228	Lakemont Blvd (SE Newport Way	0.790 C 0	0.733 C 0	0.781 C 0	0.728 C	0.781 C 0	0.704 C 0	0
229	Lakemont Blvd	Forest Drive	----- -- 0	----- -- 0	----- -- 0	----- -- 0	----- -- 0	----- -- 0	0
242	164th Ave SE	Lakemont Blvd	----- -- 0	----- -- 0	----- -- 0	----- -- 0	----- -- 0	----- -- 0	0
257	164th Ave SE	SE Newport Way	----- -- 0	----- -- 0	----- -- 0	----- -- 0	----- -- 0	----- -- 0	0
	Area wide average ->		0.817 D+ 1	0.795 C 0	0.804 D+ 1	0.802 D+1	0.685 B 0	0.740 C 0	0
	LOS Threshold	0.800							
	Allowance	3	1	1	1	1	0	0	0
Area 12: Overlake									
INT	ADDRESS		2003-PM	2004-PM	10NO-CIP	11NO-CIP	2010-CIP	2011-CIP	
39	140th Ave NE	NE 20th Street	0.720 C 0	0.695 B 0	0.774 C 0	0.709 C 0	0.774 C 0	0.722 C 0	0
40	140th Ave NE	Bellevue-Redmond	0.741 C 0	0.703 C 0	0.785 C 0	0.703 C 0	0.785 C 0	0.747 C 0	0
47	148th Ave NE	NE 20th Street	0.903 E+ 0	0.864 D- 0	0.899 D- 0	0.864 D- 0	0.899 D- 0	0.746 C 0	0
48	148th Ave NE	Bellevue-Redmond	0.929 E+ 0	0.937 E+ 0	0.954 E- 1	0.936 E+0	0.954 E- 1	0.803 D+0	0
59	Bellevue-Redmond	NE 24th Street	0.613 B 0	0.643 B 0	0.598 A 0	0.637 B 0	0.598 A 0	0.639 B 0	0
60	156th Ave NE	Bellevue-Redmond	0.576 A 0	0.606 B 0	0.556 A 0	0.605 B 0	0.556 A 0	0.599 A 0	0
61	156th Ave NE	NE 24th Street	0.694 B 0	0.725 C 0	0.666 B 0	0.728 C 0	0.666 B 0	0.703 C 0	0
64	140th Ave NE	NE 24th Street	0.642 B 0	0.630 B 0	0.941 E+ 0	0.631 B 0	0.760 C 0	0.807 D+0	0
79	148th Ave NE	NE 40th Street	0.447 A 0	0.527 A 0	0.488 A 0	0.540 A 0	0.488 A 0	0.551 A 0	0
81	148th Ave NE	NE 24th Street	0.833 D+ 0	0.881 D- 0	0.757 C 0	0.903 E+0	0.757 C 0	0.851 D+0	0
138	Bellevue-Redmond	NE 40th Street	0.624 B 0	0.593 A 0	0.613 B 0	0.593 A 0	0.613 B 0	0.569 A 0	0
188	148th Ave NE	NE 29th Place	0.798 C 0	0.913 E+ 0	1.292 F 1	0.944 E+0	0.907 E+0	1.167 F 1	0
189	NE 29th Place	NE 24th Street	----- -- 0	----- -- 0	----- -- 0	----- -- 0	0.803 D+0	0.858 D- 0	0
239	156th Ave NE	NE 40th Street	0.563 A 0	0.599 A 0	0.573 A 0	0.616 B 0	0.573 A 0	0.595 A 0	0
249	148th Ave NE	NE 51st Street	0.795 C 0	0.783 C 0	0.792 C 0	0.818 D+0	0.792 C 0	0.816 D+0	0
250	SR-520 SB Ramps	NE 51st Street	0.248 A 0	0.268 A 0	0.229 A 0	0.285 A 0	0.229 A 0	0.273 A 0	0
251	SR-520 NB Ramps	NE 51st Street	0.388 A 0	0.399 A 0	0.309 A 0	0.436 A 0	0.309 A 0	0.444 A 0	0
255	156th Ave NE	NE 51st Street	0.546 A 0	0.527 A 0	0.540 A 0	0.541 A 0	0.540 A 0	0.488 A 0	0
264	156th Ave NE	NE 31st Street	0.464 A 0	0.508 A 0	0.429 A 0	0.515 A 0	0.429 A 0	0.476 A 0	0
	Area wide average ->		0.640 B 0	0.656 B 0	0.677 B 0	0.667 B 0	0.654 B 0	0.677 B 0	0
	LOS Threshold	0.950							
	Allowance	9	0	0	2	0	1	1	1
Area 13: Factoria									
INT	ADDRESS		2003-PM	2004-PM	10NO-CIP	11NO-CIP	2010-CIP	2011-CIP	
105	Richards Rd	SE Eastgate Way	0.705 C 0	0.764 C 0	0.690 B 0	0.771 C 0	0.690 B 0	0.736 C 0	0
202	128th Ave SE/Ne	SE Newport Way	0.630 B 0	0.628 B 0	0.621 B 0	0.629 B 0	0.621 B 0	0.628 B 0	0
203	SE Newport Way	Coal Creek Pkwy	0.470 A 0	0.588 A 0	0.466 A 0	0.586 A 0	0.466 A 0	0.608 B 0	0
204	128th Ave SE	SE 36th Street	0.727 C 0	0.827 D+ 0	0.703 C 0	0.818 D+0	0.703 C 0	0.810 D+0	0
220	I-405 NB Ramps	Coal Creek Park	0.655 B 0	0.702 C 0	0.634 B 0	0.704 C 0	0.634 B 0	0.685 B 0	0
221	I-405 SB Ramps	Coal Creek Park	0.838 D+ 0	0.894 D- 0	0.840 D+0	0.896 D- 0	0.840 D+0	0.886 D- 0	0
222	128th Ave SE	SE 38th Place	0.971 E- 1	0.937 E+ 0	0.955 E- 1	0.933 E+0	0.833 D+0	0.934 E+0	0
284	124th Ave SE	Coal Creek Park	0.870 D- 0	0.836 D+ 0	0.843 D+0	0.848 D+0	0.843 D+0	0.855 D- 0	0
	Area wide average ->		0.733 C 0	0.772 C 0	0.719 C 0	0.773 C 0	0.704 C 0	0.768 C 0	0
	LOS Threshold	0.950							
	Allowance	5	1	0	1	0	0	0	0
Total Intersection Exceedance			4	4	7	4	3	3	3

APPENDIX B: List of Contributors

Concurrency Modeling

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