



City of Bellingham

Transportation Report on Annual Concurrency (TRAC)

March 2007

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EXECUTIVE SUMMARY

The Transportation Report on Annual Concurrency (TRAC) is a monitoring and reporting system that Public Works staff uses to inform the City Council and the public of which arterial streets are experiencing traffic congestion, nearing LOS thresholds, and where development proposals may require transportation mitigation to meet Bellingham's Transportation Concurrency requirements. The goal of the TRAC is to provide an assessment of the existing and future six-year multimodal transportation system to help inform the City Council in making funding decisions for the City's annual 6-Year Transportation Improvement Program (TIP) that must be adopted by July 1 of each year. The 2007 TRAC reports the status of existing (2007) and projected (2013) transportation concurrency conditions on Bellingham's arterial street network.

The 2007 TRAC contains information on the first year performance of Bellingham's Transportation Concurrency requirements and Concurrency Evaluation Tracking Tool (CETT). The CETT tracks expected traffic impacts from development expected to generate 10 or more PM Peak vehicle trips on arterial segments, as reported in trip distribution analyses, against the most current arterial street traffic counts and link capacities on the citywide arterial street network. If the traffic impact from a development proposal does not exceed the adopted LOS threshold, as measured by the CETT, then a Certificate of Transportation Concurrency may be issued, and the project may proceed through the normal development review process. If a development proposal is expected to exceed the adopted LOS standards, then as per RCW 36.70A.70 (6) (b), the application cannot be accepted and a permit cannot be issued unless:

- Developer reduces scope of project to lower trip generation to available capacity within adopted LOS standards;
- Developer funds or constructs capacity mitigation or funds transportation demand management strategies (Commit to public transit service via bus passes, adding bicycle and pedestrian facility capacity, connecting missing links in the bicycle and pedestrian network, etc);
- City commits public funding on 6-Year TIP to transportation system improvements to provide additional capacity on affected arterial;
- City Council adopts different LOS standard, as per Transportation Element policy TP-12, through once-per-year Comprehensive Plan amendment process.

Summary of Findings

An overview of the TRAC findings for 2007 existing conditions indicates the following:

- **2007 conditions are based on the most current arterial street traffic counts available.** A 3% growth factor is applied to account for annual regional background traffic growth.
- Between June 15, 2006 and March 15, 2007, Public Works staff evaluated 22 development proposals for transportation concurrency. To date, no single development proposal has tripped the adopted LOS standard E (v/c .901 – 1.00) and thus been denied a Transportation Concurrency Certificate;

- In 2007, two arterial segments have exceeded LOS standard E (v/c .901 – 1.00) adopted in the Bellingham Comprehensive Plan (See Table 1.)
- In 2007, three locations are approaching the LOS standard E (v/c .901 – 1.00) threshold adopted in the Bellingham Comprehensive Plan (See Table 1.). Additional development in these areas could trigger the transportation concurrency thresholds.
- In 2007, four locations designated Highway of Statewide Significance (HSS) exceed Bellingham's adopted LOS standard E (v/c.901 – 1.00). As per RCW 36.70A.070 (6)(a)(iii)(C), HSS facilities are not subject to transportation concurrency requirements (See Table 1.).
- Not surprisingly, most of the locations approaching or exceeding Bellingham's adopted LOS standards are major entry/exit points to the City or major activity centers. This is consistent with the Bellingham Comprehensive Plan Transportation Element.

An overview of the TRAC findings for 2013 projected conditions indicates the following:

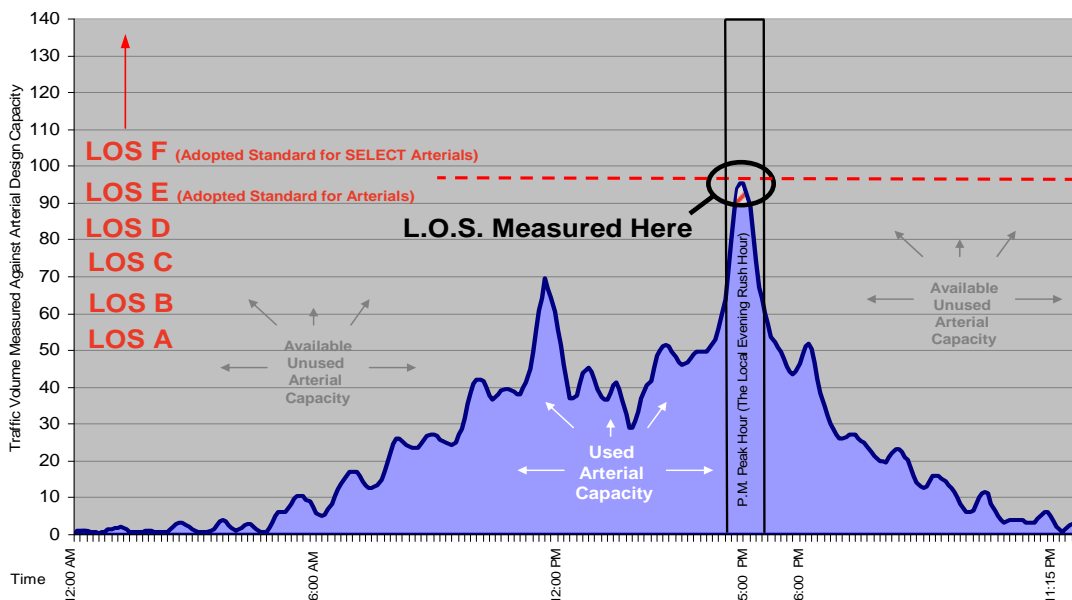
- ***The 2013 projections should be viewed primarily as areas or locations that City staff should pay special attention to and monitor for transportation impacts.*** The travel demand forecasting model is a comprehensive planning tool that is based on land use and employment assumptions and associated trip generation projections. ***Since growth does not occur evenly through out an area or at a given rate, interpolated interim forecasts should only be used as information within a transportation planning context.***
- In 2013, nine arterial street segments are projected to meet or exceed the adopted LOS standard E (v/c .901 – 1.00) threshold adopted in the Bellingham Comprehensive Plan (See Table 2.).
- In 2013, six arterial street segments are projected to approach the adopted LOS standard E (v/c .901 – 1.00) threshold adopted in the Bellingham Comprehensive Plan (See Table 2.).
- In 2013, four locations designated Highway of Statewide Significance (HSS) are projected to approach or exceed Bellingham's adopted LOS standard E (v/c.901 – 1.00). As per RCW 36.70A.070 (6)(a)(iii)(C), HSS facilities are not subject to transportation concurrency requirements (See Table 2.).
- Not surprisingly, most of the locations projected to approach or exceed Bellingham's adopted LOS standards are major entry/exit points to the City or major activity centers. This is consistent with the Bellingham Comprehensive Plan Transportation Element.

Introduction to Transportation Concurrency

The Washington State Growth Management Act (GMA) requires “A transportation element that implements, and is consistent with, the land use element” (RCW 36.70A.70 (6)). GMA Transportation Element requirements include adoption of “level of service standards for all locally owned arterials and transit routes to serve as a gauge to judge performance of the system” (RCW 36.70A.070 (6)(a)(iii)(B)).

In June 2006, Bellingham adopted a newly updated Comprehensive Plan. The Transportation Element adopts level of service (LOS) standard “E” (v/c .901 – 1.00) for all arterial streets during the weekday evening rush hour, as well as the exception of 11 specific arterial street segments allowed to function at LOS standard “F” (v/c 1.01 – 1.25) due to difficult mitigation. These LOS standards, illustrated in Figure 1, are intended to provide measurable criteria to assess the adequacy of the transportation system capacity as new development is proposed.

Figure 1. Illustration of Typical Weekday Arterial Traffic Volumes with Peak Hour



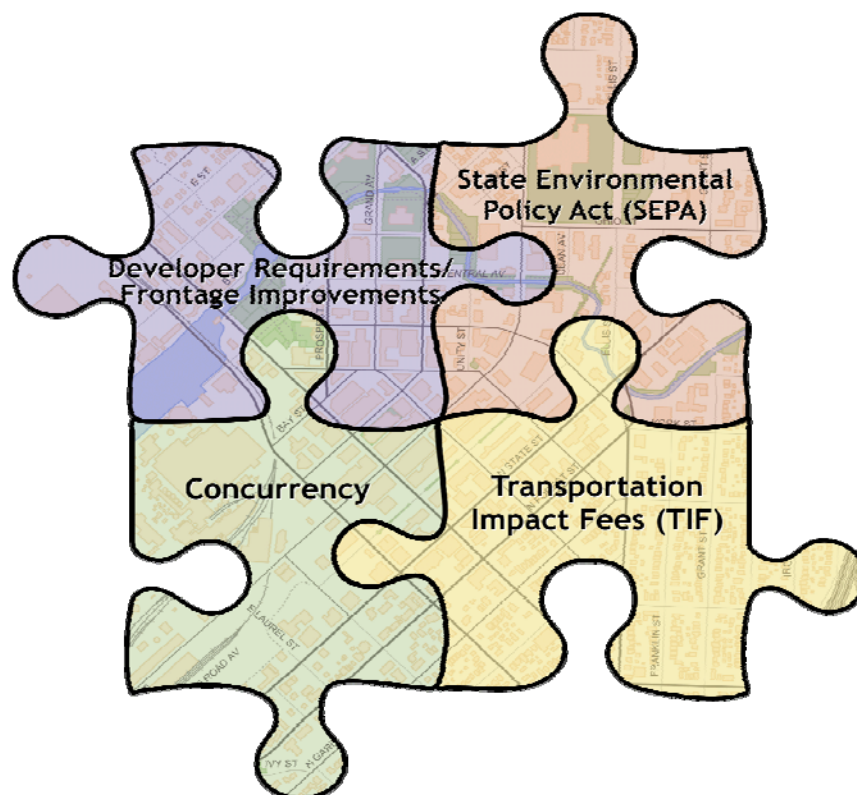
The City’s adopted arterial LOS standard “E” uses a PM peak hour percent of capacity. Directional PM peak hour arterial roadway volumes are divided by the directional arterial roadway capacity to calculate the volume-to-capacity (v/c) ratio. The capacity values are based on the roadway capacity values assigned in the City’s travel demand forecasting model, which have been adjusted to reflect general planning capacities based on Bellingham’s adopted LOS standard “E” (v/c .901 – 1.00).

Figure 1, above, is an illustration of typical daily traffic volumes on an urban arterial street during various time periods of an average weekday. The illustration shows traffic building throughout the day, a minor peak period during the lunch hour, and a major peak period during the evening rush hour. The PM peak hour measures the heaviest 60 minutes of traffic between 4:00pm – 6:00pm and represents the greatest demand placed on the transportation system. The Figure 1 illustration also demonstrates that there is plenty of unused arterial capacity during off-peak hours. Bellingham’s adopted LOS “E” (v/c .901 – 1.00) means that the City allows and expects 100% of the available arterial street capacity to be used during the evening rush hour.

GMA implementation requirements for transportation concurrency state that “local jurisdictions must adopt and enforce ordinances which prohibit development approval if the development causes the level of service on a locally owned transportation facility to decline below the standards adopted in the transportation element of the comprehensive plan, unless transportation improvements or strategies to accommodate the impacts of development are made concurrent with the development. These strategies may include increased public transportation service, ride sharing programs, demand management, and other transportation systems management strategies. For the purposes of this subsection (6) “concurrent with the development” shall mean that improvements or strategies are in place at the time of development, or that a financial commitment is in place to complete the improvements or strategies within six years” (RCW 36.70A.70 (6) (b)).

In February 2006, the City Council adopted the **Transportation Concurrency Management Ordinance (BMC 13.70)**, which specifically establishes a program to monitor and maintain arterial street capacity in support of the City’s land use strategy. Transportation Concurrency evaluation does not relieve development projects from requirements for SEPA review, street frontage improvements, or transportation impact fees. Figure 2, below, illustrates how the four different transportation development review “tools” fit together to provide a comprehensive transportation review and mitigation program.

Figure 2. Components of Development Review for Transportation



Bellingham Arterial Streets Subject to BMC 13.70 Transportation Concurrency

Bellingham Municipal Code (BMC) 11.63.110 E. lists all designated arterial streets in Bellingham and 11.63.110 F. lists all planned arterial streets in Bellingham and the Urban Growth Area (UGA) that will be needed to accommodate urban levels of development, as adopted in the Bellingham Comprehensive Plan (See Figure 3., below).

All designated arterial streets within the Bellingham city limits are subject to BMC 13.70, which contains the Transportation Concurrency Management requirements for all new development proposed after June 15, 2006.

Highways of Statewide Significance (HSS)

The Washington State Department of Transportation (WSDOT) is responsible for setting LOS standards for Highways of Statewide Significance (HSS) and has established LOS D in urban growth areas. As per RCW 36.70A.070 (6)(a)(iii)(C) "Highways of Statewide Significance" (HSS), such as Interstate 5 and Guide Meridian (SR 539) within Bellingham, are not subject to transportation concurrency requirements.

Highways of Regional Significance (non-HSS)

LOS standards for state "Highways of Regional Significance" (HRS) are based on the standards adopted by the Regional Transportation Planning Organization (RTPO) in conjunction with WSDOT. WSDOT and Whatcom Council of Governments (WCOG) have established LOS standard D (v/c .801 - .901) for state "Highways of Regional Significance" (HRS) in urban growth areas of Whatcom County and LOS standard C (v/c .701 - .801) for rural areas of the County. Bellingham has adopted LOS standard E (v/c .901 – 1.01) for the portions of HRS facilities within the City limits. HRS facilities in Bellingham include SR 542 – Mt Baker Highway and SR 11 – Chuckanut Drive/Old Fairhaven Parkway.

Figure 3. Existing and Planned Arterial Street Network for Bellingham



Summary of 2007 TRAC Findings

The 2007 TRAC identifies arterial streets where the LOS is approaching the LOS standard “E” (v/c .901 – 1.01) threshold as well as arterial street corridors likely to reach or exceed the LOS standard “E” (v/c .901 – 1.01) threshold within the next six years (2008-2013).

The existing (2007) and projected (2013) six-year LOS performance for City arterials were each evaluated using different methods; the Concurrency Evaluation Tracking Tool (CETT) was used for current (2007) conditions through mid-March 2007 and the Travel Demand Forecast Model (TDFM) was used to project conditions through 2013.

Concurrency Evaluation Tracking Tool (CETT) – 2007 LOS

The Concurrency Evaluation Tracking Tool (CETT) is a spreadsheet-based tool which is used to evaluate traffic impact from proposed development, compare it to current traffic volumes and the established capacity of arterial streets, and determine whether adequate transportation facilities are available concurrent with the proposed development. The CETT provides a snapshot in time of the LOS available on the City's arterial street network.

Methods and Limitations

The CETT relies on the following input variables to develop short range traffic forecasts:

- **Traffic Counts** – The CETT uses the most current arterial street traffic count data available. The age of the traffic count data ranges from 2004 to the present. A growth factor of 3% is applied to older count data to be more indicative of current conditions.
- **Roadway Capacities** – Roadway capacities are based on the capacities assigned to arterial streets within the City's travel demand forecast model, which was developed for long-range planning evaluations. Capacity is based on the particular characteristics found on the arterial, such as number of lanes, speed limit, turns lanes, and the number of vehicles that the arterial is designed to carry per hour. The capacities have been adjusted to reflect the general roadway planning capacity based on Bellingham's LOS standard “E” (v/c .901 – 1.00) on Bellingham's arterial streets.
- **Pipeline development traffic estimates** – Vehicle trips generated from the 14 development proposals evaluated for transportation concurrency in 2006 have been assigned to affected arterial street links, tracked, and added to the traffic counts on the respective arterial links.

Transportation Concurrency – Existing Conditions (Through mid-March 2007)

2007 conditions measured on arterial streets are based on the most current arterial street traffic counts available. A 3% growth factor is applied to account for annual regional background traffic growth. This is a very important distinction from the projected (2013) conditions because it is based on data collected to measure traffic impact.

Table 1. 2007 Arterial Streets Within or Exceeding LOS Standard E (v/c .901 – 1.00)

ID	Arterial Street Link	X/Of	Street Name	X/Of	Street Name	Dir	2007 V/C	V/C Std.	Met	TIP
1	Ellis St (St Joseph's Hospital)	S/O	Squillum Pkwy	N/O	Sunset Dr	SB	0.95	1.00	Yes	No
2	Hannegan Rd	N/O	Division St	S/O	Bakerview Rd	NB	0.91	1.00	Yes	No
3	Lakeway Dr **	E/Of	Electric Ave	W/Of	City limit / UGA	EB	1.01	1.00	No	No
4	Lincoln St (I-5 On Ramp)	S/O	I-5 NB On Ramp	N/O	Elwood Ave	NB	1.59	HSS	N/A	No
5	Northwest Ave	NW/Of	Birchwood Ave	SE/Of	Maplewood Ave	NWB	1.02	1.25	Yes	No
6	Northwest Ave	NW/Of	Maplewood Ave	SE/Of	Mcleod Rd	NWB	1.04	1.25	Yes	Yes
7	Northwest Ave	S/O	I-5 SB Off Ramp	N/O	Mcleod Rd	SB	1.22	1.25	Yes	Yes
8	Northwest Ave (Underpass)	S/O	I-5 NB Off Ramp	N/O	I-5 SB Off Ramp	NB	0.93	HSS	N/A	Yes
9	Northwest Ave (Underpass)	S/O	I-5 NB Off Ramp	N/O	I-5 SB Off Ramp	SB	1.02	HSS	N/A	Yes
10	Northwest Ave **	N/O	I-5 NB Off Ramp	S/O	Bakerview Rd	NB	1.02	1.00	No	Yes
11	Old Fairhaven Pkwy	E/O	30th St	W/O	I-5 SB Off Ramp	EB	0.98	1.00	Yes	No
12	Old Fairhaven Pkwy	E/O	30th St	W/O	I-5 SB On Ramp	WB	0.98	1.00	Yes	No
13	SR 539 Guide Meridian	S/O	Kelly Rd	N/O	Kline Rd	NB	0.95	HSS	N/A	DOT
14	SR 539 Guide Meridian	N/O	Smith Rd	@	UGA	NB	1.13	HSS	N/A	DOT
15	SR 539 Guide Meridian	N/O	Smith Rd	@	UGA	SB	0.90	HSS	N/A	DOT
16	E. Sunset Dr	W/O	Hannegan Rd	E/O	Orleans St	EB	0.90	1.00	Yes	No
17	W. Bakerview Rd (Overpass)	SW/O	I-5 NB Off Ramp	NE/O	I-5 SB On Ramp	SW	1.30	HSS	N/A	No
**Exceeds adopted LOS standard E (v/c .901 - 1.01)										

Implications of Table 1. for New Development in Bellingham

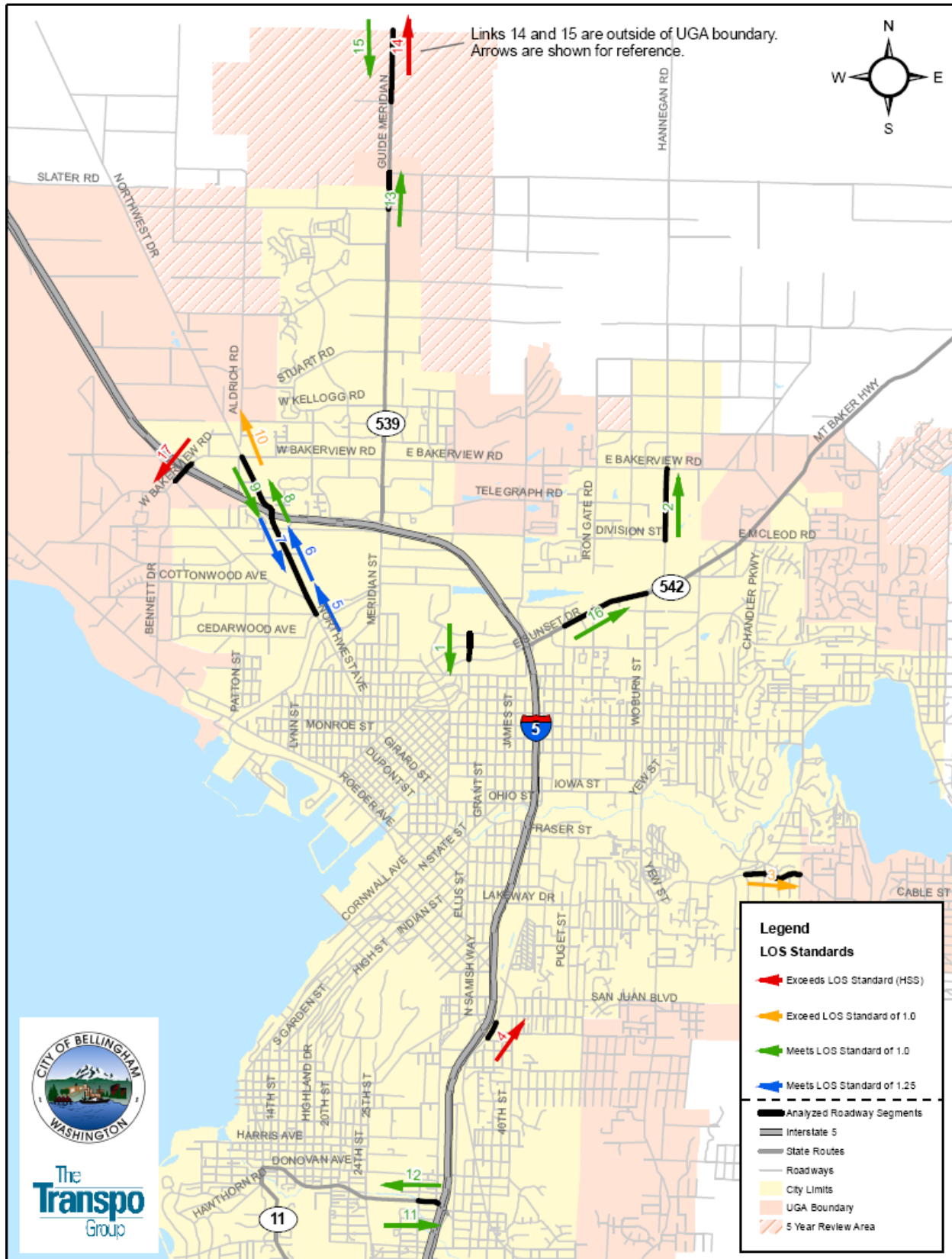
If a new development generates vehicle trips that would impact non-HSS arterial segments already exceeding adopted LOS standards (ID #'s 3 and 10, above), then a Certificate of Transportation Concurrency cannot be issued and the development proposal will be denied until one of the following occurs:

- Scale of development reduced to lower trip generation within adopted LOS standards;
- Developer provides mitigation to add arterial capacity and/or to reduce trip generation of project (Commit to public transit service via bus passes, adding bicycle and pedestrian facility capacity, connecting missing links in the bicycle and pedestrian network, etc);
- City commits public funding on 6-Year TIP to transportation system improvements to provide additional capacity on affected arterial;
- City Council adopts different LOS standard, as per Transportation Element policy:

TP-12 To further support the Urban Village and infill strategy of the Land Use Element, the Bellingham City Council has adopted Peak Hour LOS standard E at p.m. peak hour, and where specific circumstances warrant, Alternative Peak Hour LOS standard F (v/c 1.01 – 1.25) for transportation arterials where mitigation is difficult. The Council may, on a case-by-case basis, consider adopting Peak Hour LOS standard F (v/c 1.01 – 1.25), for other arterials as follows:

- 1.) On local arterials within designated Urban Villages;
- 2.) On local arterials that enter/exit the City; and
- 3.) On local arterials where mitigation is not feasible.

Figure 4. Existing Arterial Street LOS Conditions (2007)



Arterials Exceeding LOS Standard E (v/c .901 – 1.00) in 2007

ID 3. Eastbound traffic on Lakeway Drive east of Electric Avenue.

- 2007 v/c = 1.01 (LOS standard F)
- Lakeway Drive is the only east-west arterial entrance to east Bellingham.
- Major entry/exit point for rush hour commuter traffic from Bellingham to the Geneva UGA and Sudden Valley.
- Birch Street traffic signal creates a long eastbound queue.
- As residential development continues east of the City limits, commuter traffic is expected to increase on this arterial as working people drive into Bellingham each morning and back to areas east of the City each evening.
- Future residential development inside Bellingham city limits is unlikely to result in eastbound pm peak vehicle trips on this arterial segment.
- Capacity mitigation would be expensive and difficult with impact to homes.
- Transportation Demand Management strategies, such as increased public transit service, car-pooling, and flex-scheduling could be moderately effective.

Outlook: LOS standard E threshold (v/c .901 – 1.00) has already been exceeded. New development subject to BMC 13.70 Transportation Concurrency (10 pm peak trips or more) cannot be permitted without transportation mitigation or change to LOS standard.

ID 10. Northbound traffic on Northwest Avenue between Interstate 5 and West Bakerview.

- 2007 v/c = 1.02 (LOS standard F)
- Major entry/exit point for rush hour commuter traffic from Bellingham to Ferndale and Whatcom County.
- As residential development continues in northwest Bellingham, Ferndale, Birch Bay, Blaine, and Whatcom County, traffic is expected to increase on this arterial as working people drive into Bellingham each morning and back to these areas each evening.
- Northwest Avenue between Elm and Interstate 5 is already allowed to function at LOS F (v/c 1.01 – 1.25), due to difficult mitigation, which would require removal of on-street parking to add lane capacity.
- Traffic signal at West Bakerview Road creates a long northwest-bound queue.
- Current 6-Year TIP project on Northwest will not benefit northbound commuter traffic north of Interstate 5 due to the long queue created by the traffic signal at West Bakerview Road.
- Northwest/Bakerview area has more build-out potential, but will require mitigation.
- Capacity-adding mitigation extremely difficult in this location.
- WTA high-frequency GO Line already exists along this corridor.
- Transportation Demand Management strategies, such as car-pooling, and flex-scheduling could be moderately effective.

Outlook: LOS standard E threshold (v/c .901 – 1.00) has already been exceeded. New development subject to BMC 13.70 Transportation Concurrency (10 pm peak trips or more) cannot be permitted without transportation mitigation or change to LOS standard.

Arterials Approaching LOS Standard E (v/c .901 – 1.00) in 2007

ID 1. Southbound traffic on Ellis Street between Squalicum Parkway and Sunset Drive.

- 2007 v/c = .95 (LOS standard E)
- Primary entry/exit point to St. Joseph's Hospital, which is the largest medical care facility in the region and the second largest employer in Whatcom County (1,800 employees).
- Primary entry/exit point to dozens of other medical service providers employing hundreds of staff and generating significant peak hour traffic volumes each day.
- St. Joseph's Hospital 2006 Institutional Master Plan (IMP) for Cornwall Park Neighborhood Area 7 calls for significant infill development and expansion of hospital space, parking, and medical service facilities by 2025. Traffic will get worse.
- Transportation study for 2006 St Joseph's IMP identified:
 - 1.) Numerous intersections surrounding St Joseph's Hospital as reaching LOS "F" by 2025 (p 43, Cornwall Park Area 7 Institutional Master Plan Traffic/Transportation Analysis Report, April 2006), and
 - 2.) Potential mitigating measures, including new arterial connections and intersection improvements (pp 45-61, Cornwall Park Area 7 Institutional Master Plan Traffic/Transportation Analysis Report, April 2006);
- Transportation mitigation measures will be required for the St Joseph's Hospital area.
- Transportation Demand Management strategies, such as increased public transit service, car-pooling, and flex-scheduling could be moderately effective.

Outlook: One or more medical office developments could trip the LOS standard E threshold (v/c .901 – 1.00), which would require mitigation or denial of the project.

ID's 11 & 12 Westbound and Eastbound traffic on Old Fairhaven Parkway between 30th Street and Interstate 5

- 2007 v/c = .98 (LOS standard E)
- I-5 exit 250 is the first major entry/exit point to Bellingham from all points south.
- Major freeway exit point for rush hour commuter traffic from Bellingham, Whatcom County, and Skagit County to residential areas of southwest Bellingham.
- No other arterials crossing Interstate 5 south of Samish Way overpass.
- High trip generation commercial development (Grocery, liquor, two gas stations, convenience store, coffee stand on both sides of Old Fairhaven Parkway between 30th and freeway interchange.
- WSDOT closure of 32nd Street and installation of new traffic signal has resulted in safer traffic operations, but also slows east-west traffic flow.
- As development continues in Bellingham (Samish, South, Fairhaven Neighborhoods) and Whatcom County, traffic is expected to increase on Old Fairhaven Parkway.
- Capacity mitigation would be expensive and difficult and would impact businesses.
- Transportation Demand Management strategies, such as a park-n-ride facilities and public transit service are already in place.

Outlook: One or more new development proposals could trip the LOS standard E threshold (v/c .901 – 1.00), which would require mitigation or denial of the project.

Transportation Concurrency – Projected Conditions (Through 2013)

Travel Demand Forecasting Model – 2013 LOS

The travel demand forecast model provides a snapshot in time to view forecasted future traffic congestion conditions. The City's TransCAD model was used to forecast citywide LOS deficiencies based on a future six-year concurrency time frame (year 2013). It must be emphasized that the travel demand forecasting model is a planning tool that is based on land use and employment assumptions and associated trip generation projections. These projections will change with each annual concurrency report as traffic counts and specific land uses are identified through development applications. Table 2 summarizes the 2013 LOS forecast results, based on available information.

Methods and Limitations

The travel demand forecast model is calibrated based on 2002 base year traffic volumes and is used to develop 2022 future year traffic forecasts for the Bellingham Comprehensive Plan. Before the model is used to estimate future traffic volumes and travel patterns, the trip distribution results are validated and trip assignments are calibrated based on existing data. The validation process involves comparing the trip distribution results of the study area to what is generally known in the area, including land uses and physical characteristics of the arterial street network. Calibration involves examination of the relative distribution of trips between transportation analysis zones to verify that the model is distributing trips appropriately and that the overall lengths of trips are reasonable. The calibration process consists of comparing model travel assignments for the base year to actual traffic volumes and data on travel patterns. The calibration process consists of two primary parts: screen line analyses and link volume analyses.

As typical in travel demand forecasting models, traffic counts were not available at all key roadways and intersections in the City. In locations where no counts are currently available, direct use of the model's performance can result in the forecasts being higher and lower than actual conditions. Where traffic counts are available, the model forecasts are post-processed to account for model calibration. The model is comprised of two primary components, a trip table and a network. The trip table is a matrix of travel interchanges between various parts of the City and region. The network is a representation of the arterial and freeway system to which the trip table is assigned to connect origins with destinations and develop the forecasts.

Trip Table

A six-year (2013 concurrency horizon year) forecast was developed by interpolating between the two trip tables. Interpolating between the existing and future trip tables provides a method for developing an interim forecast. ***Since growth does not occur evenly through out an area or at a given rate, interpolated interim forecasts should only be used as information within a transportation planning context.***

Arterial Street Network

The six-year model network includes all funded Transportation Improvement Plan (TIP) projects that would add capacity to roadways and intersections. The model provides an assessment of the added capacity of these planned improvements relative to six-years of land use growth.

Table 2. Projected 2013 Arterial Streets Within or Exceeding LOS Standard E (v/c .901 – 1.00)

ID	Arterial Street Link	X/Of	Street Name	X/Of	Street Name	Dir	2013 V/C	V/C Std.	Met	TIP
1	BELLIS FAIR PKWY (Mall)	W/Of	Meridian St	NE/Of	I-5 NB Off Ramp	EB	1.62	1.00	No	No
2	BILL MCDONALD PKWY	NE/Of	32nd St	W/Of	Samish Way	NE	0.90	1.00	Yes	No
3	BILL MCDONALD PKWY	NE/Of	32nd St	W/Of	Samish Way	SW	0.93	1.00	Yes	No
4	BOULEVARD ST	S/Of	Forest	N/Of	S. State St	SW	1.04	1.25	Yes	No
5	SUNSET DR	W/Of	I-5 SB Off Ramp	E/Of	Ellis St	EB	0.99	1.00	Yes	No
6	E SUNSET DR	E/Of	I-5 NB Off Ramp	W/Of	Barkley Blvd	EB	0.94	1.00	Yes	No
7	E SUNSET DR (Overpass)	W/Of	I-5 NB Off Ramp	E/Of	I-5 SB On Ramp	SW	0.98	HSS	N/A	No
8	ELLIS ST	S/Of	Squilicum Pkwy	N/Of	Sunset Dr	SB	1.01	1.00	No	No
9	GIRARD ST	NW/Of	Grand Ave	SE/Of	F St	NW	0.99	1.00	Yes	No
10	GIRARD ST	NW/Of	Grand Ave	SE/Of	F St	SE	0.95	1.00	Yes	No
11	GIRARD ST	SE/Of	Broadway St	NW/Of	F St	NW	0.93	1.00	Yes	No
12	GIRARD ST	SE/Of	Broadway St	NW/Of	F St	SE	0.90	1.00	Yes	No
13	HANNEGAN RD	N/Of	Division St	S/Of	Bakerview Rd	NB	0.94	1.00	Yes	No
14	HANNEGAN RD	N/Of	Division St	S/Of	Bakerview Rd	SB	1.03	1.00	No	No
15	JAMES STREET RD	N/Of	Woodstock Wy	S/Of	Telegraph Rd	SW	0.93	1.00	Yes	Yes
16	LAKEWAY DR	E/Of	Electric Ave	W/Of	City limit	EB	1.19	1.00	No	No
17	LINCOLN ST (I-5 On-Ramp)	S/Of	I-5 NB On Ramp	N/Of	Elwood Ave	NB	1.13	HSS	N/A	No
18	MERIDIAN ST	S/Of	Illinois St	N/Of	Monroe St	NB	0.94	1.25	Yes	No
19	MERIDIAN ST	S/Of	Illinois St	N/Of	Monroe St	SB	0.92	1.25	Yes	No
20	MERIDIAN ST	N/Of	Broadway St	S/Of	Monroe St	NB	1.06	1.25	Yes	No
21	MERIDIAN ST	N/Of	Broadway St	S/Of	Monroe St	SB	1.07	1.25	Yes	No
22	MERIDIAN ST	N/Of	Birchwood Ave	S/Of	Mcleod Rd	NB	1.09	1.00	No	No
23	MERIDIAN ST	N/Of	Birchwood Ave	S/Of	Mcleod Rd	SB	0.96	1.00	Yes	No
24	MERIDIAN ST	N/Of	Illinois St	S/Of	Squalicum Pkwy	NB	1.15	1.25	Yes	No
25	MERIDIAN ST	N/Of	Illinois St	S/Of	Squalicum Pkwy	SB	1.15	1.25	Yes	No
26	MERIDIAN ST	N/Of	Squilicum Pkwy	S/Of	Birchwood Ave	NB	1.52	1.00	No	No
27	MERIDIAN ST	N/Of	Squilicum Pkwy	S/Of	Birchwood Ave	SB	1.50	1.00	No	No
28	MERIDIAN ST (Underpass)	S/Of	I-5 NB Off Ramp	N/Of	I-5 SB Off Ramp	NB	1.09	HSS	N/A	No
29	MERIDIAN ST (Underpass)	S/Of	I-5 NB Off Ramp	N/Of	I-5 SB Off Ramp	SB	1.58	HSS	N/A	No
30	NORTHWEST AV	NW/Of	Lynn St	SE/Of	Birchwood Ave	SE	1.09	1.25	Yes	No
31	NORTHWEST AV	NW/Of	Bakerview Rd	SE/Of	Aldrich Rd	NW	1.07	1.00	No	No
32	NORTHWEST AV	SE/Of	Lynn St	NW/Of	Illinois St	NW	0.91	1.25	Yes	No
33	NORTHWEST AV	SE/Of	Lynn St	NW/Of	Illinois St	SE	0.91	1.25	Yes	No
34	NORTHWEST AV	NW/Of	Birchwood Ave	SE/Of	Maplewood Ave	NW	1.15	1.25	Yes	No
35	NORTHWEST AV	NW/Of	Birchwood Ave	SE/Of	Maplewood Ave	SE	1.19	1.25	Yes	No
36	NORTHWEST AV	NW/Of	Maplewood Ave	SE/Of	Mcleod Rd	SE	0.94	1.25	Yes	No
37	NORTHWEST AV	NW/Of	Lynn St	SE/Of	Birchwood Ave	NW	1.07	1.25	Yes	No
38	NORTHWEST AV	N/Of	Mcleod Rd	S/Of	I-5 SB Off Ramp	SB	1.12	1.25	Yes	Yes
39	OLD FAIRHAVEN PKWY	E/Of	30th St	W/Of	I-5 SB Off Ramp	EB	0.96	1.00	Yes	No
40	OLD FAIRHAVEN PKWY	E/Of	30th St	W/Of	I-5 SB On Ramp	WB	1.10	1.00	No	No
41	ROEDER AV	NW/Of	Bay St	SE/Of	F St	SE	0.94	1.00	Yes	No
42	ROEDER AV	NW/Of	F St	SE/Of	Squalicum Pkwy	SE	0.90	1.00	Yes	No
43	SQUALICUM PKWY	W/Of	Ellis St	E/Of	Birchwood Ave	EB	0.98	1.00	Yes	No

Figure 5. Projected Arterial Street LOS Conditions (2013)



Arterials Projected to Exceed LOS Standard E (v/c .901 – 1.00) in 2013

ID 1. Eastbound traffic on Bellis Fair Parkway exiting Shopping Mall

- Projected 2013 v/c = 1.62
- Arterial segment is between Interstate 5 northbound off-ramp to shopping mall, mall and fast-food driveways, and Meridian Street
- Major activity center at Bellis Fair Mall
- Bellis Fair Parkway becomes a parking lot as mall and fast food traffic backs up due to long green cycle time given to Meridian Street for traffic flow.

Outlook: If LOS standard E threshold (v/c .901 – 1.00) is exceeded, then new development subject to BMC 13.70 Transportation Concurrency (10 pm peak trips or more) cannot be permitted without transportation mitigation or change to LOS standard.

ID 8. South bound traffic on Ellis Street between Squalicum Parkway and Sunset Drive

- Projected 2013 v/c = 1.01
- Primary entry/exit point to St. Joseph's Hospital, which is the largest medical care facility in the region and the second largest employer in Whatcom County (1,800 employees).
- Primary entry/exit point to dozens of other medical service providers employing hundreds of staff and generating significant peak hour traffic volumes each day.
- St. Joseph's Hospital 2006 Institutional Master Plan (IMP) for Cornwall Park Neighborhood Area 7 calls for significant infill development and expansion of hospital space, parking, and medical service facilities by 2025. Traffic will get worse.
- Transportation study for 2006 St Joseph's IMP identified:
 - 3.) Numerous intersections surrounding St Joseph's Hospital as reaching LOS "F" by 2025 (p 43, Cornwall Park Area 7 Institutional Master Plan Traffic/Transportation Analysis Report, April 2006), and
 - 4.) Potential mitigating measures, including new arterial connections and intersection improvements (pp 45-61, Cornwall Park Area 7 Institutional Master Plan Traffic/Transportation Analysis Report, April 2006);
- Transportation mitigation measures will be required for the St Joseph's Hospital area.
- Transportation Demand Management strategies, such as increased public transit service, car-pooling, and flex-scheduling could be moderately effective.

Outlook: If LOS standard E threshold (v/c .901 – 1.00) is exceeded, then new development subject to BMC 13.70 Transportation Concurrency (10 pm peak trips or more) cannot be permitted without transportation mitigation or change to LOS standard.

ID 14. Southbound traffic on Hannegan Road between Bakerview and Division

- Projected 2013 v/c = 1.03
- Major entry/exit to northeast portion of City
- Major industrial area
- Driveway entrances, right turns at Division Street

Outlook: If LOS standard E threshold (v/c .901 – 1.00) is exceeded, then new development subject to BMC 13.70 Transportation Concurrency (10 pm peak trips or more) cannot be permitted without transportation mitigation or change to LOS standard.

ID 16. Eastbound traffic on Lakeway Drive east of Electric Avenue at City limit/UGA

- Project 2013 v/c = 1.19
- Lakeway Drive is the only east-west arterial entrance to east Bellingham.
- Major entry/exit point for rush hour commuter traffic from Bellingham to the Geneva UGA and Sudden Valley.
- Birch Street traffic signal creates a long eastbound queue.
- As residential development continues east of the City limits, commuter traffic is expected to increase on this arterial as working people drive into Bellingham each morning and back to areas east of the City each evening.
- Future residential development inside Bellingham city limits is unlikely to result in eastbound pm peak vehicle trips on this arterial segment.
- Capacity mitigation would be expensive and difficult with impact to homes.
- Transportation Demand Management strategies, such as increased public transit service, car-pooling, and flex-scheduling could be moderately effective.

Outlook: If LOS standard E threshold (v/c .901 – 1.00) is exceeded, then new development subject to BMC 13.70 Transportation Concurrency (10 pm peak trips or more) cannot be permitted without transportation mitigation or change to LOS standard.

ID 22. Northbound traffic on Meridian Street between Birchwood and McLeod

- Projected 2013 v/c = 1.09
- Major entry/exit to City at Meridian/Interstate 5 interchange
- 5-legged intersection at Squalicum/Birchwood/Meridian
- Other portions of Meridian allowed to function at v/c 1.25

Outlook: If LOS standard E threshold (v/c .901 – 1.00) is exceeded, then new development subject to BMC 13.70 Transportation Concurrency (10 pm peak trips or more) cannot be permitted without transportation mitigation or change to LOS standard.

ID's 26 & 27. Northbound and southbound traffic on Meridian Street between Squalicum Parkway and Birchwood Avenue

- Projected 2013 v/c = 1.52 Northbound
- Projected 2013 v/c = 1.50 Southbound
- Major entry/exit to City at Meridian/Interstate 5 interchange
- 5-legged intersection at Squalicum/Birchwood/Meridian, extremely close traffic signals, railroad tracks
- Other portions of Meridian allowed to function at v/c 1.25
- Second access to St. Joseph's Hospital
- Squalicum Way is a major truck route

Outlook: If LOS standard E threshold (v/c .901 – 1.00) is exceeded, then new development subject to BMC 13.70 Transportation Concurrency (10 pm peak trips or more) cannot be permitted without transportation mitigation or change to LOS standard.

ID 31. Northbound traffic on Northwest Avenue north of West Bakerview Road

- Projected 2013 v/c = 1.07
- Major entry/exit point for rush hour commuter traffic from Bellingham to Ferndale and Whatcom County.
- As residential development continues in northwest Bellingham, Ferndale, Birch Bay, Blaine, and Whatcom County, traffic is expected to increase on this arterial as working people drive into Bellingham each morning and back to these areas each evening.
- Northwest Avenue between Elm and Interstate 5 is already allowed to function at LOS F (v/c 1.01 – 1.25), due to difficult mitigation, which would require removal of on-street parking to add lane capacity.
- Traffic signal at West Bakerview Road creates a long northwest-bound queue.
- Current 6-Year TIP project on Northwest will not benefit northbound commuter traffic north of Interstate 5 due to the long queue created by the traffic signal at West Bakerview Road.
- Northwest/Bakerview area has more build-out potential, but will require mitigation.
- Capacity-adding mitigation extremely difficult in this location.
- WTA high-frequency GO Line already exists along this corridor.
- Transportation Demand Management strategies, such as car-pooling, and flex-scheduling could be moderately effective.

Outlook: If LOS standard E threshold (v/c .901 – 1.00) is exceeded, then new development subject to BMC 13.70 Transportation Concurrency (10 pm peak trips or more) cannot be permitted without transportation mitigation or change to LOS standard.

ID 40. Westbound traffic on Old Fairhaven Parkway between 30th and Interstate 5

- Projected 2013 v/c = 1.10
- I-5 exit 250 is the first major entry/exit point to Bellingham from all points south.
- Major freeway exit point for rush hour commuter traffic from Bellingham, Whatcom County, and Skagit County to residential areas of southwest Bellingham.
- No other arterials crossing Interstate 5 south of Samish Way overpass.
- High trip generation commercial development (Grocery, liquor, two gas stations, convenience store, coffee stand on both sides of Old Fairhaven Parkway between 30th and freeway interchange.
- WSDOT closure of 32nd Street and installation of new traffic signal has resulted in safer traffic operations, but also slows east-west traffic flow.
- As development continues in Bellingham (Samish, South, Fairhaven Neighborhoods) and Whatcom County, traffic is expected to increase on Old Fairhaven Parkway.
- Capacity mitigation would be expensive and difficult and would impact businesses.
- Transportation Demand Management strategies, such as a park-n-ride facilities and public transit service are already in place.

Outlook: If LOS standard E threshold (v/c .901 – 1.00) is exceeded, then new development subject to BMC 13.70 Transportation Concurrency (10 pm peak trips or more) cannot be permitted without transportation mitigation or change to LOS standard.

Arterials Projected to Approach LOS Standard E (v/c .901 – 1.00) in 2013

ID 5. Eastbound traffic on Sunset Drive between Ellis and I-5 Southbound On-ramp

- Projected 2013 v/c = .99
- Major entry/exit points to City at Sunset/Interstate 5 interchange and East Sunset Drive - Mt. Baker Highway
- 5-legged intersection at I-5 Southbound Off- and On-ramps/Sunset/James Street
- St Joseph's Hospital traffic exiting from Ellis Street onto Sunset Drive
- Major commercial activity center nearby at Sunset Square/Lowes complex

Outlook: If LOS standard E threshold (v/c .901 – 1.00) is exceeded, then new development subject to BMC 13.70 Transportation Concurrency (10 pm peak trips or more) cannot be permitted without transportation mitigation or change to LOS standard.

ID's 9 & 10. Northwest & Southwest-bound traffic on Girard between Grand and F Street

- Projected 2013 v/c = .99 Northwest-bound
- Projected 2013 v/c = .95 Southeast-bound
- Essentially southern extent of Meridian Street, major entry/exit point between downtown Bellingham and Interstate 5
- Other portions of Meridian allowed to function at v/c 1.25

Outlook: If LOS standard E threshold (v/c .901 – 1.00) is exceeded, then new development subject to BMC 13.70 Transportation Concurrency (10 pm peak trips or more) cannot be permitted without transportation mitigation or change to LOS standard.

ID 39. Eastbound traffic on Old Fairhaven Parkway between 30th Street and Interstate 5

- Projected 2013 v/c = .96
- I-5 exit 250 is the first major entry/exit point to Bellingham from all points south.
- Major freeway exit point for rush hour commuter traffic from Bellingham, Whatcom County, and Skagit County to residential areas of southwest Bellingham.
- No other arterials crossing Interstate 5 south of Samish Way overpass.
- High trip generation commercial development (Grocery, liquor, two gas stations, convenience store, coffee stand on both sides of Old Fairhaven Parkway between 30th and freeway interchange.
- WSDOT closure of 32nd Street and installation of new traffic signal has resulted in safer traffic operations, but also slows east-west traffic flow.
- As development continues in Bellingham (Samish, South, Fairhaven Neighborhoods) and Whatcom County, traffic is expected to increase on Old Fairhaven Parkway.
- Capacity mitigation would be expensive and difficult and would impact businesses.
- Transportation Demand Management strategies, such as a park-n-ride facilities and public transit service are already in place.

Outlook: If LOS standard E threshold (v/c .901 – 1.00) is exceeded, then new development subject to BMC 13.70 Transportation Concurrency (10 pm peak trips or more) cannot be permitted without transportation mitigation or change to LOS standard.

ID 43. Eastbound traffic on Squalicum Parkway between Ellis and Birchwood

- Projected 2013 v/c = .98
- Main arterial serving all of St. Joseph's Hospital, which is the largest medical care facility in the region and the second largest employer in Whatcom County (1,800 employees) and dozens of other medical service providers employing hundreds of staff and generating significant peak hour traffic volumes each day.
- Squalicum Parkway has narrow lanes, no curb, gutter, or sidewalk, and
- dense on-street parking on un-paved shoulders
- Numerous parking lot driveways for medical support offices
- Limited sight distance at intersection with day care facility
- St. Joseph's Hospital 2006 Institutional Master Plan (IMP) for Cornwall Park Neighborhood Area 7 calls for significant infill development and expansion of hospital space, parking, and medical service facilities by 2025. Traffic will get worse.
- Transportation study for 2006 St Joseph's IMP identified:
 - 5.) Numerous intersections surrounding St Joseph's Hospital as reaching LOS "F" by 2025 (p 43, Cornwall Park Area 7 Institutional Master Plan Traffic/Transportation Analysis Report, April 2006), and
 - 6.) Potential mitigating measures, including new arterial connections and intersection improvements (pp 45-61, Cornwall Park Area 7 Institutional Master Plan Traffic/Transportation Analysis Report, April 2006);
- Transportation mitigation measures will be required for the St Joseph's Hospital area.
- Transportation Demand Management strategies, such as increased public transit service, car-pooling, and flex-scheduling could be moderately effective.

Outlook: If LOS standard E threshold (v/c .901 – 1.00) is exceeded, then new development subject to BMC 13.70 Transportation Concurrency (10 pm peak trips or more) cannot be permitted without transportation mitigation or change to LOS standard.

Transportation Concurrency Management Program Future Enhancements

- **Incorporate additional level of service (LOS) standards for intersections into the Transportation Concurrency evaluation process to successfully implement the infill land use strategy adopted in the Bellingham Comprehensive Plan.**

Staff proposes to transition from the current 'link-based' volume-to-capacity LOS standards to 'intersection-based' LOS standards or a hybrid of both for Bellingham's Transportation Concurrency Management Program. The 'link-based' system has been in place since 1995 and is not likely to be the best long-term LOS capacity measurement tool to help Bellingham implement the urban-oriented infill land use strategy adopted in the Bellingham Comprehensive Plan.

Public Works staff seeks Council direction to work with transportation consultants to develop new LOS standards in 2007, modeled after cities such as Kirkland, Bellevue, and Redmond, which have successfully implemented GMA-based urban infill strategies for several years. If work can be completed in 2007, staff's goal would be to implement this new system in 2008.

- **Continued Concurrency Evaluation Tracking Tool refinement**

When most people consider 'traffic impact' they are usually referring to the number of automobile trips generated from a development proposal rather than how much pedestrian, bicycle, or transit capacity is available or being consumed. 'Traffic' impact is usually equated with automobiles. Currently, the Concurrency Evaluation Tracking Tool (CETT) is limited to calculating arterial street volume-to-capacity ratios only for vehicle traffic. Staff proposes to translate high-frequency transit, sidewalks, and bicycle lanes into 'total arterial capacity' for development proposal evaluation using CETT. This will help to support the infill land use strategy by allowing staff to credit proposals for development along arterials that have the full range of multi-modal transportation facilities already in place.

- **Transportation corridor "profiles" (for heavy use corridors)**

Developing 24-hour "profiles" for heavy use transportation arterial corridors (LOS E and LOS F) will help transportation planning staff and City Council to better understand the range of circumstances, issues, and problems affecting these arterial corridors. A greater understanding of the situation for each corridor will help transportation planning staff and City Council to develop a range of potential mitigation alternatives.

- **Transportation network connectivity opportunities and issues for all transportation modes, including vehicle, bicycle, and pedestrian**

Future refinement and enhancement of the travel demand forecast model may allow it to be used directly or indirectly for "connectivity analysis" to explore the potential cost/benefit of connecting existing dead-end streets. As infill development continues to occur, it will become increasingly difficult, disruptive, and expensive to add capacity to arterials through physical widening or the addition of turn lanes. Connecting currently unconnected streets could result in better traffic circulation and relief of regional traffic congestion. Analyzing and modeling the costs and benefits of connecting streets may create lower cost mitigation alternatives to relieve traffic congestion.

Transportation Concurrency Information Sources

All questions regarding Bellingham's Transportation Concurrency requirements, the Transportation Report on Annual Concurrency (TRAC), or the Transportation Element of the Bellingham Comprehensive Plan should be directed to:

Chris Comeau, AICP, Transportation Planner
City of Bellingham Public Works Department
210 Lottie Street (City Hall)
Bellingham, WA 98225
(360) 676-6961 telephone; (360) 676-6894 fax;
Email: ccomeau@cob.org

Bellingham Transportation Planning Documents

City of Bellingham web site: www.cob.org, click on "Departments", click on "Public Works"

City of Bellingham 2006 Comprehensive Plan, Transportation Element
<http://www.cob.org/pcd/planning/growth/comp-update.htm>, click Chapter 3.

BMC 11.63.110 E. Arterial Street System for Bellingham
F. Planned Arterial Street System for Bellingham and UGA
<http://www.cob.org/web/bmcode.nsf>, click Title 11, click 11.63, click 11.63.110

BMC 13.70 Transportation Concurrency Management
<http://www.cob.org/web/bmcode.nsf>, click Title 13, click 13.70

BMC 19.06 Transportation Impact Fees
<http://www.cob.org/web/bmcode.nsf>, click Title 19, click 19.06

2007-2012 Transportation Improvement Program (TIP)
<http://www.cob.org/documents/pw/transportation/2007-Bellingham-TIP.pdf>

2008-2013 Transportation Improvement Program (TIP)
Draft 2008-2013 TIP will be available in May 2007 and must be adopted by July 1, 2007.

Web Sites for Bellingham/Whatcom Transportation Information

Bellingham Public Works Department	www.cob.org/pw
Bellingham Planning Department	www.cob.org/pcd
Whatcom Transportation Authority	www.ridewta.com
Whatcom County	www.co.whatcom.wa.us
Port of Bellingham.....	www.portofbelllingham.com
Whatcom Council of Governments	www.wcog.org
Washington State Department of Transportation.....	www.wsdot.wa.gov
U.S. Federal Highway Administration	www.fhwa.dot.gov
U.S. Department of Transportation	www.dot.gov