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In November 2009, Bellingham received the *2009 American Planning Association/Planning Association of Washington Award for Transportation Planning* for its Multimodal Transportation Concurrency Program, which is profiled in this article.



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Moving Beyond the Automobile: Multimodal Transportation Planning in Bellingham, Washington

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INTRODUCTION

This case study examines Bellingham, Washington's evolution from auto-centric and roadway-based transportation planning to inclusive, flexible, and integrated multimodal transportation planning and concurrency standards. The case study also discusses the shortfalls of employing traditional level of service (LOS) methodology in urban settings and explains how Bellingham transportation planners created innovative new LOS methodology specifically designed to help achieve the infill and multimodal goals and policies of their Comprehensive Plan.

Planners who do not work under state- or locally-mandated growth management requirements may view the topic of transportation concurrency implementation as remote from their everyday practice; however, planners wishing to advance multimodal transportation planning in their own jurisdiction can learn from the practices and methods advanced and applied in Bellingham, as described in this case study.

BACKGROUND

Concurrency

Concurrency is a regulatory requirement, first mandated under Florida's statewide growth management legislation, which requires local governments to ensure that adequate public facilities and services are available at the time that the impacts of new land development occur, according to locally adopted level of service (LOS) standards. Once those LOS standards are adopted, local governments must implement concurrency ordinances with regulations that disapprove of development if it fails to meet the adopted LOS standards. Local governments must continuously monitor the adequacy of facilities for which concurrency is required. That monitoring task is often referred to as a concurrency management system.

WASHINGTON'S GROWTH MANAGEMENT ACT

In 1990, the Washington State legislature passed RCW 36.70A.070, the Growth Management Act (GMA)², which mandated that all cities and counties adopt Comprehensive Plans with 20-year planning horizons. Washington's GMA is modeled after both Oregon's Statewide Planning Act and Florida's Statewide Growth Management legislation and was primarily a response to the public outcry arising from extensive urban sprawl that has threatened rural, agricultural, and environmentally sensitive lands. Washington's GMA has fourteen over-arching goals³ addressing everything from urban land use and transportation to property rights and environmental

preservation and has specific requirements for land use⁴ and transportation elements⁵ of Comprehensive Plans, including adoption and enforcement of concurrency (adequate public facilities) ordinances.^{6,7}

Some state and local growth management programs mandate concurrency for several different facilities, but Washington State’s GMA mandates concurrency only for transportation facilities and services. Specifically, Washington’s GMA requires that “After adoption of the comprehensive plan by jurisdictions required to plan or who choose to plan under RCW 36.70A.040, 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.”⁶

While Washington’s GMA provides a legal framework to follow, it leaves the details of how to achieve the fourteen goals up to each local jurisdiction. The ultimate implementation goal for local jurisdictions is to achieve a reasonable level of balance among all of the fourteen goals, despite the fact that some goals are clearly at odds with the achievement of other goals. One example of this is the GMA goal for encouraging “compact urban centers” and urban “infill” development strategies in light of the GMA concurrency requirements for adequate public facilities and services being maintained at existing LOS standards. If adequate transportation infrastructure cannot be maintained at existing arterial LOS standards, then new urban infill development cannot be approved, despite the multifaceted benefits that infill development projects typically offer over development projects located further from the City center.

Traditional Methods of Determining Transportation Levels of Service (LOS) Standards

The traditional engineering method of measuring transportation capacity to handle new development is to assume that a roadway or intersection has a theoretical design capacity to move vehicle traffic and then to measure traffic volumes or seconds of delay against the assigned design capacity of the arterial or intersection. The resulting ratio establishes the operating LOS typically during the highest demand period of the day, which is usually the p.m. peak, or evening rush hour (Illustrated in Figure 1). This is known as a volume-to-capacity LOS standard and it typically comes with a letter grade classification system ranging from LOS “A,” describing free-flow traffic, to LOS “F,” describing congestion, gridlock, and what engineers describe as “failure.” The most common LOS methodology adopted for this purpose is from the national Transportation Research Board’s Highway Capacity Manual (2000).

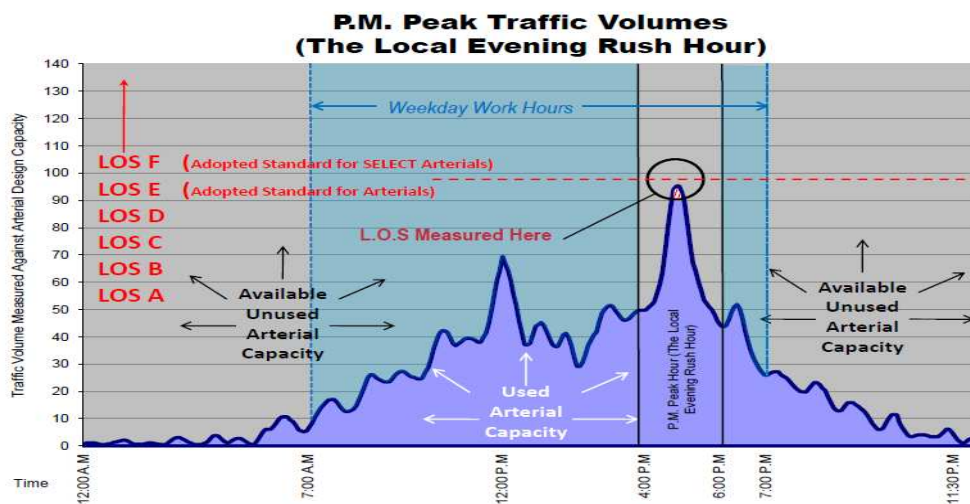


Figure 1. Illustration of typical weekday arterial traffic volumes with p.m. peak hour.

Unfortunately, many people outside of transportation and engineering circles tend to confuse the HCM letter grade classification system with academic achievement grades where an A-grade indicates up to 100% achievement, C-grade indicates average 75% achievement, and an F-grade indicates failing achievement below 50%. The Highway Capacity Manual letter grade classification system inverts the achievement grade scheme and assigns an F-grade for transportation facilities at 100% capacity and an A-grade for transportation facilities at only 50% capacity (See Table 1). A fundamental flaw exists in the public perception, and media portrayal, of how transportation facilities have traditionally been measured by engineers and, in this regard, some people mistakenly come to believe that public agencies should plan transportation facilities to achieve LOS “A,” or at the very least LOS “C,” but most certainly not LOS “F.”

Academic Achievement	Value Assigned	Transportation Capacity
90 – 100%	A	50 – 60%
80 – 90%	B	60 – 70%
70 – 80%	C	70 – 80%
60 – 70%	D	80 – 90%
N/A	E	90 – 100%
< 60%	F	>100%

Source: Highway Capacity Manual 2000

In reality, there is no public agency in an urban area that would plan, fund, and construct an expensive new transportation facility with the expectation that it would function at LOS “A,” or 50 to 60 percent of design capacity, during the highest demand periods of the day. An arterial maintained at LOS “A” would provide over-built and under-utilized infrastructure, an incentive for increasing single occupant vehicle trips, high public cost with little-to-no public benefit, and significant criticism for wasting public tax dollars.

When combined with Washington’s GMA concurrency requirements to adopt and maintain LOS standards, the logical progression of maintaining a strict interpretation of a traditional and theoretical volume-to-capacity (v/c) LOS standards is that arterial streets or intersections must become both wider and more congested or the urban area must remain at a lower density. Transportation demand management strategies may also be a legitimate response, but they typically have limited results. Because the measure of LOS is limited to automobile traffic congestion, the mitigating measures to maintain the adopted LOS are typically limited to adding capacity for the automobile, which is inconsistent with GMA goals for compact urban areas, multimodal transportation systems, and reducing environmental impact.

Changing public perception about LOS “F” is not easy, but it is essential for jurisdictions choosing to promote infill development. The public perception is reinforced by the engineering industry in choosing to use a term like “failure” to describe LOS “F” conditions, which may include short-term congestion and possibly even temporary gridlock. In reality, the demand for physical space for vehicles has simply exceeded supply/capacity available. A traditional reaction has been to widen the congested street to add capacity. In human terms, this could be viewed as analogous to simply putting on a larger pair of pants to deal with temporary heartburn and discomfort from over-eating instead of dieting, exercising, or eating better.

**“Insanity: doing the same thing over and over again,
but expecting different results” – attributed to Albert Einstein**

It is often not physically possible, nor desirable, for streets or intersections in an urban core to become wider, so if additional infill development is desired in the urban core, then both the public expectation and adopted LOS must allow ever increasing traffic congestion during the heaviest demand period of the day. Mitigation measures should

be focused on sidewalks, bicycle lanes, and enhanced public transit service for infill land use strategies to be successful.

FACTS OF THE CASE

Bellingham, Washington, is located in the far northwestern corner of Washington State. The San Juan Islands rise out of the sea to the west and the North Cascade Mountains rise to elevations of almost 11,000 feet to the east. Vancouver, B.C., Canada, host city to the 2010 Winter Olympic Games, lies 45 miles to the north and Seattle lies 55 miles to the south on Interstate 5 (Figure 2). Indigenous Native Americans have lived in the vicinity of Bellingham for several thousand years and European settlers began to arrive in the early 1850s. The City of Bellingham was consolidated in 1903 with the incorporation and merger of four towns: Fairhaven (1853), Whatcom (1852), Sehome (1854), and Old Bellingham (1853). Bellingham is currently home to 75,750 residents and is the seat of government for Whatcom County.



Figure 2. Bellingham's location in the Pacific Northwest region.

The Bellingham urban area is the largest center for employment, shopping, entertainment, medical care, and secondary education in the Whatcom County region (Figure 3). According to the Housing Element of the 2006 Bellingham Comprehensive Plan, Bellingham offers 18 of the top 25 employers¹, several large retail shopping centers, many restaurant and dining options, several movie theatres and live performance venues, a state-of-the-art regional hospital, and three post-secondary education institutions; Western Washington University, Whatcom Community College, and Bellingham Technical College. The presence of all of these activity centers and the reality of Interstate 5 bisecting the city draws a great amount of automobile traffic into and through Bellingham. These activity centers also offer tremendous potential for alternative modes of transportation for those who live within close proximity or at least within the city limits.

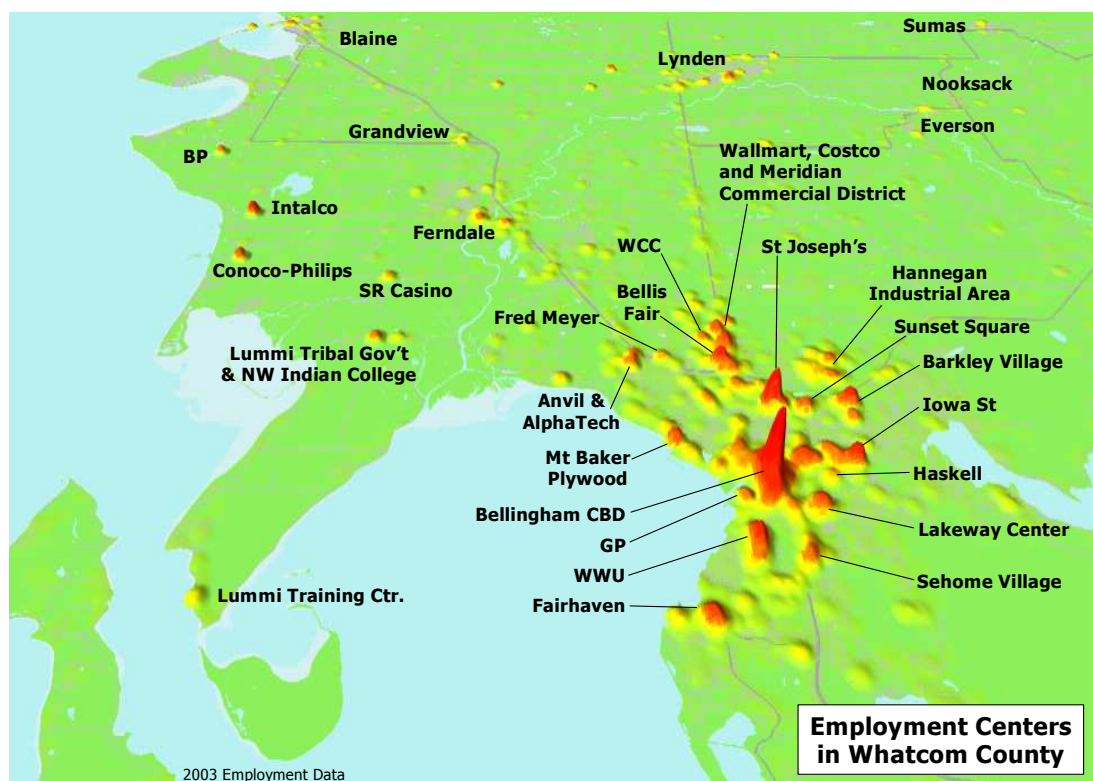


Figure 3. Bellingham regional employment, shopping, entertainment, and education center

Multimodal Transportation Policies

The Transportation Element of the 2006 Bellingham Comprehensive Plan⁹ contains multimodal transportation goals and policies designed to support compact urban infill development, as prescribed by the Land Use Element¹⁰, and alternative forms of transportation while discouraging low-density sprawl and auto-oriented development. The Transportation Element contains a list of about 120 multimodal transportation projects identified as needed to serve new growth within the 20-year planning horizon. Most of these projects are bicycle and pedestrian projects recommended by the City's Bicycle and Pedestrian Advisory Committee (BPAC) in collaboration with city transportation planning staff.

Multimodal goals and policies in the Transportation Element also support public transit, which is not a city service. City transportation planners work hand-in-hand with the regional transit agency, Whatcom Transportation Authority (WTA) to incorporate transit infrastructure and service investments into the transportation network. In 2004, Whatcom Transportation Authority (WTA) essentially 're-invented itself' with the adoption of a 2005-2010 Six-Year Strategic Service Plan, (2004) and focused the highest percentage of transit service hours in the portions of the Bellingham urban area with the greatest ridership potential.¹¹

In 2005, City and WTA transportation planners worked together to update the Transportation Element of the Bellingham Comprehensive Plan, developed long-term “Mode Shift Goals” (Table 2), and continuously work together to reduce the overall percentage of trips made by single-occupant vehicles while increasing the percentage of trips made by pedestrians, bicyclists, and transit riders. City staff also incorporates WTA high-frequency (15-minute headway) service routes into citywide planning efforts for mixed-use urban villages (Figure 4).

MODE	2004	2010	2015	2022
Automobile	87%	84%	80%	75%
Transit Bus	2%	3%	4%	6%
Bicycle	3%	4%	5%	6%
Pedestrian	8%	9%	11%	13%

Source: City of Bellingham, WA (2006). Bellingham Comprehensive Plan, 2002-2022, Transportation Element. 2004 data from FTA/Social Data Study for Bellingham.

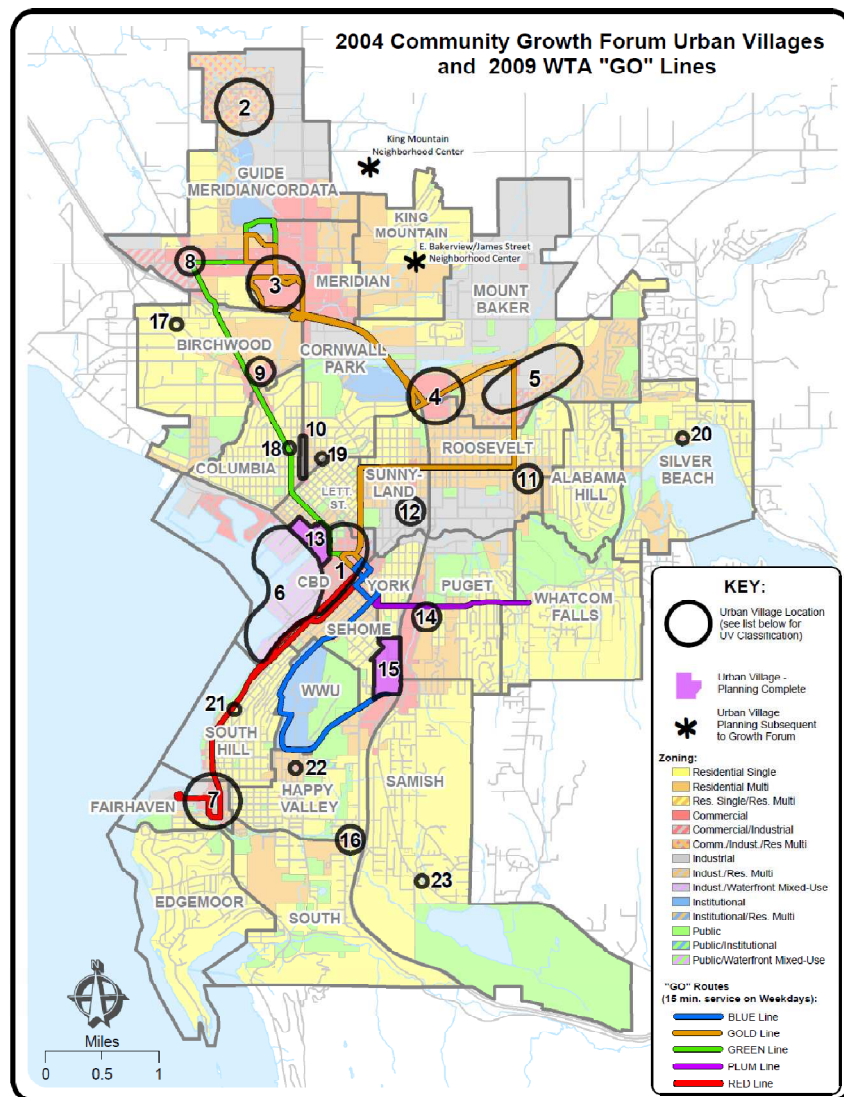


Figure 4. Bellingham’s urban villages connected by WTA high-frequency transit routes

Capital Investments in Alternative Transportation Modes

The City has adopted multimodal policies that require bicycle and pedestrian facilities on all new or reconstructed arterial streets, has solicited multimodal improvement requests from neighborhoods and bicycle and pedestrian advocates, and has made significant investments in capital improvements to bicycle and pedestrian infrastructure. Each year, transportation planners solicit priority project requests, as listed in the Transportation Element, from both the Bicycle and Pedestrian Advisory Committee (BPAC) and the City's 24 appointed representatives on the Mayor's Neighborhood Advisory Commission (MNAC).

Over the past 10 years, the City of Bellingham has made significant financial investments to build the multimodal transportation network identified in the Transportation Element. Since 2001, about half of the transportation projects on Bellingham's annual 6-Year Transportation Improvement Program (TIP) have been specific bicycle and pedestrian infrastructure projects (See Figure 5.) and in 2009, every single capital project on the 2010-2015 TIP includes bicycle and pedestrian facilities.¹²

New multimodal transportation facilities are also provided through private investment. City transportation policy, development regulations, street standards, and design guidelines require new development to fund and construct public street frontage improvements that include bicycle lanes and sidewalks for arterials and sidewalks for residential streets, wherever possible. The City of Bellingham has also required new development to pay Transportation Impact Fees (TIF) since 1994. Most recently, Bellingham has adopted Multimodal Transportation Concurrency requirements¹⁴, which employ measurements for pedestrian, bicycle, transit, and automobile modes and can require mitigation through the construction of sidewalks and bicycle lanes or contributions to transit service.

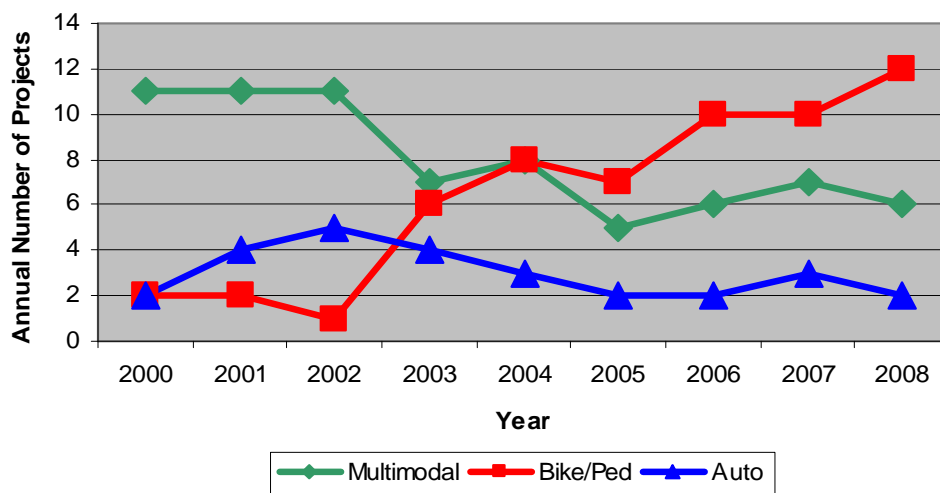


Figure 5. Graph showing number of bicycle and pedestrian projects funded per year

Dissatisfaction With Traditional Level of Service (LOS) Standards

After years of working with traditional v/c LOS standards based on the Highway Capacity Manual (HCM), Bellingham transportation planners concluded that it is not possible to promote significant urban infill development while also maintaining traditional auto-centric volume-to-capacity LOS standards that do not allow traffic congestion beyond a theoretical threshold. The enhancement of the pedestrian environment is paramount to successful infill strategies and creating vibrant urban environments, but continually widening roads to add vehicle capacity compromises the quality of the urban pedestrian environment, degrades urban aesthetics, and ultimately leads to expansive urban sprawl.

Unfortunately, when City staff began updating the Bellingham Comprehensive Plan in 2004, it became clear that the Public Works Department would be stuck with the traditional LOS system until enough time and resources could be found to develop an entirely new measurement methodology. This also meant that Bellingham transportation planners had to develop a specific Transportation Element policy (TP-12) that would allow the City Council to adopt a lower LOS “F” standard during the p.m. peak hour for specific arterials that serve Urban Villages, as entry/exit points to the City, or that are physically, economically, or politically undesirable for widening. This was essentially a way to meet the letter of state law requirements for Transportation Concurrency while also attempting to support high-density mixed use urban villages called for in the land use element of the Comprehensive Plan.

The counter-intuitive logic behind this policy is that if more people live on less land in closer proximity to work, shopping, entertainment, educational, and medical facilities, then there should be less dependency on automobiles for shorter trips. While this will not necessarily reduce traffic congestion during peak demand hours, it will perhaps slow the rate of growth of traffic congestion and has the potential to reduce the overall number of individual trips made by automobile over time.

Despite the unpopularity of the message, Bellingham transportation planners chose to openly communicate that evening rush hour traffic congestion is a normal condition in urban environments and that no city in the United States has successfully built its way out of p.m. peak hour traffic congestion. This policy became the focus of political controversy and organized efforts by anti-growth organizations to promote agendas to restrict population growth and new development in Bellingham and, more generally, Whatcom County. The mantra of one local anti-growth group became “Planning to Fail is Failing to Plan” in reference to the public perception that LOS “F” conditions at the p.m. peak hour is equivalent to academic failure.

Bellingham’s transportation policy approach also fueled public scorn from the media. Several editorial opinion pieces in the local newspaper decried the horror of the City’s LOS “E” and “F” standards and transportation policies and simply implied that the City “just needed to do a better job with infill development without letting traffic get worse.” Editorial page headlines included:

“City policy would lead to severe traffic congestion”

- Sunday, June 5, 2005, Bellingham Herald Opinion

“City wrong to allow traffic woes to fester”

- Sunday, May 7, 2006, Bellingham Herald Opinion

“Bellingham maddeningly illogical on growth, traffic”

- Sunday, June 10, 2007, Bellingham Herald Opinion

EVOLUTION FROM AUTO-CENTRIC LOS TO MULTIMODAL LOS

In December 2007, Bellingham Public Works issued a Request for Proposals¹⁶ and in January 2008 hired Kirkland-based consultants Transpo Group to explore alternative LOS measurements and develop a new method for calculating transportation concurrency from a multimodal perspective. From February through June 2008, Transpo Group helped Bellingham transportation planners analyze pros and cons of fifteen different LOS measurements along a spectrum ranging from traditional to progressive and untested methods.¹⁷ Staff and consultants kept the City Council, the public, and the development community informed throughout the process with one work session per month. (All City Council meetings are recorded and broadcast on BTV Channel 10.) Ultimately, staff and consultants recommended a plan-based preferred alternative titled “Person Trips Available by Concurrency Service Area” that is a fundamental shift away from traditional engineering LOS measurements.

In August and September 2008, two public hearings were held before the Planning Commission and in November 2008, two public hearings were held before the City Council with final adoption occurring in December 2008.

Throughout the public hearings, the same local anti-growth advocates who rallied around the mantra “Planning to Fail is Failing to Plan” made accusations and misinformed claims of wrong doing on the part of both city and consultant staff. Pro-growth land supply advocates claimed that it was the City’s responsibility to build infrastructure to serve new development in the Bellingham Urban Growth Area (UGA), not the responsibility of private developers. Bicycle, pedestrian, transit, and highway planners all supported the new Multimodal Transportation Concurrency methodology.

The remainder of this case study discusses the details of Bellingham’s multimodal transportation concurrency regulations (“Outcomes”) and several lessons learned in creating, adopting, and implementing them.

OUTCOMES: HOW MULTIMODAL TRANSPORTATION CONCURRENCY WORKS

Bellingham’s new systematic approach to Multimodal Transportation Concurrency regulations integrate land use and transportation goals, policies, development regulations, and funding mechanisms to ensure that adequate facilities are available for pedestrians, bicyclists, transit riders, and vehicle users. The new multimodal transportation concurrency regulations are consistent with Comprehensive Plan land use and transportation goals and policies and the long list of multimodal transportation projects needed to accommodate projected population growth. This innovative new approach is aimed toward achieving Bellingham’s long-term mode shift goals to reduce the percentage of trips made by single occupant vehicles while increasing the percentage of trips made by pedestrians, bicyclists, and transit riders.

Bellingham’s adopted LOS standard is “**Person Trips Available by Concurrency Service Area**” based on arterial and transit capacity for motorized modes and on the degree of network completeness for pedestrian and bicycle modes, as listed below. The individual thresholds for each transportation mode available in each Concurrency Service Area are listed in BMC 13.70 Multimodal Transportation Concurrency requirements (Table 3).

Table 3. Multimodal Transportation Concurrency Measurements For Each Mode	
Motorized	Measurement
Automobiles	Arterial volume-to-capacity measured during weekday p.m. peak hour based on data collected at designated concurrency measurement points in concurrency service areas
Public Transit	Seated capacity based on bus size and route frequency and ridership based on annual transit surveys measured during weekday p.m. peak hour based on data collected at designated concurrency measurement points for each concurrency service area
Non-motorized	Measurement
Bicycle	Credit person trips according to degree of bicycle network completeness for designated system facilities/routes for each concurrency service area
Pedestrian	Credit person trips according to degree of pedestrian network completeness for designated system facilities/routes for each concurrency service area
Trail Use	Credit person trips according to degree of trail network completeness, where trails serve a clear transportation function for a concurrency service area
Source: Bellingham Municipal Code 13.70 Multimodal Transportation Concurrency (2008)	

Transportation planners divided the city into fifteen Concurrency Service Areas (CSA), each of which has unique land use patterns and transportation facilities and services available, which influence travel behavior and the transportation choices that people make. Each CSA is classified as Type 1, 2, or 3, as listed below and weighted with policy dials to reflect the relative importance of different transportation modes in the three different CSA Types (Figure 6 and Table 4).

- **Type 1 CSA (Green)** are Urban Villages with adopted Master Plans. Type 1 CSAs are characterized by a high percentage of pedestrian and bicycle facilities, high frequency transit service, and higher density land uses with a good mix of services. Western Washington University is an exception and is classified as Type

1 CSA #10 due to the extremely high transit service and ridership, campus parking limitations, and the adopted WWU Institutional Master Plan.

- **Type 2 CSA (Yellow)** are essentially transition areas between Urban Villages and outlying areas. Type 2 CSAs are characterized by a moderate percentage of pedestrian and bicycle facilities, high frequency transit service, and moderate density land uses that are primarily residential with a small degree of mixed uses.
- **Type 3 CSAs (Red)** are primarily east of Interstate 5 and at the edges of the City. Type 3 CSA are characterized by a low percentage of pedestrian and bicycle facilities, moderate to low transit service availability, moderate to low density land use with a small degree of mixed uses, and a high degree of automobile dependency.

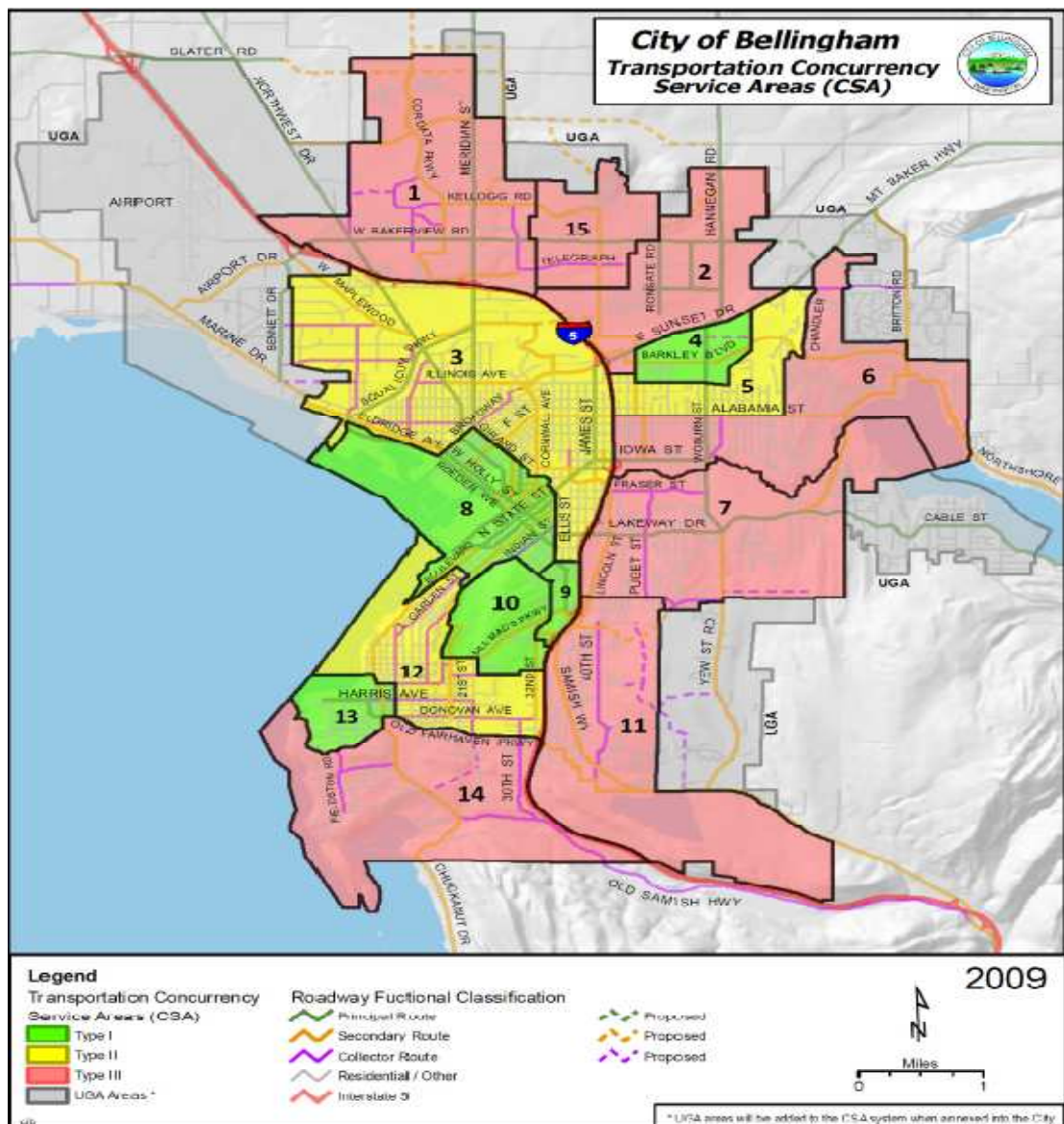


Figure 6. Bellingham's Multimodal Transportation Concurrency Service Area map.

Table 4. Multimodal Transportation Concurrency Measurements and Policy Dials			
	Transportation Concurrency Service Areas		
Mode	Type 1¹	Type 2²	Type 3³
<i>Motorized</i>			
Auto			
Mode weight factor ⁴	0.70	0.80	0.90
Transit			
Mode weight factor ⁵	1.00	1.00	0.80
<i>Non-Motorized</i>			
Pedestrian			
Percent threshold for minimum system complete ⁸	50%	50%	50%
Person trip credit for 1% greater than minimum threshold ⁹	20	20	20
Mode weight factor ⁶	0.60	0.60	0.60
Bicycle			
Percent threshold for minimum system complete ⁸	50%	50%	50%
Percent credit for 1% greater than threshold ⁹	20	20	20
Mode weight factor ⁷	0.40	0.40	0.40

1. Type 1 = Urban Village areas with adopted master plans, high-density mixed use zoning, or an active master plan process.
2. Type 2 = Medium density areas adjacent to and influenced by Urban Villages.
3. Type 3 = Lower density and auto-oriented areas near edges of City.
4. Auto mode weight factor considers the importance of roadways to a service area, relative to the availability of other mode alternatives.
5. Transit mode weight factor considers the availability/viability of the transit mode to a service area.
6. Pedestrian mode weight factor considers the importance of pedestrian facilities to a service area, relative to land use and travel patterns.
7. Bicycle mode weight factor considers the importance of bicycle facilities to a service area, relative to land use and travel patterns.
8. This is the minimum level of the planned system completed for it to be considered a viable mode alternative.
9. Person trips credited to service area based on the amount of the system completed minus the minimum threshold.

Source: Bellingham Municipal Code, Section 13.70, Table 1 (2008).

The over-arching goal of Bellingham’s Multimodal Transportation Concurrency methodology is to support the City’s infill land use strategy. To that end, “policy dials” are used in an attempt to direct new development into the portions of the City deemed most appropriate for accommodating new development and population growth. The land use environment for each CSA plays a key role in the policy dial influence on each mode. The availability, completeness, and relative importance of transportation infrastructure for pedestrian, bicycle, transit, and automobile modes within each of the fifteen CSAs determines the number of person trips available (PTA) in each CSA. The net effect is to ensure that more PTA are available in the areas deemed most appropriate for growth and where multimodal transportation infrastructure is most complete.

Example of Policy Dial Influence

The following is an example of the influence that the auto and transit policy dial weighting factors have on the Concurrency Service Areas. Downtown Bellingham is a Type 1 (Urban Village) CSA labeled CSA #8 on the map (Figure 5). The downtown area has many small blocks, grid-oriented streets, ample and complete pedestrian and bicycle facilities, and more public transit service than anywhere else in the city. The weighting factors for the downtown CSA #8 de-emphasize the relative importance of the plentiful automobile capacity (70%) and emphasize the relative importance (100%) of the robust transit capacity. In contrast, CSA #15 is a newly annexed outlying suburban area (Type 3) with very long blocks, few pedestrian or bicycle facilities on arterial streets, and little to no transit facilities and services. The weighting factors for this outlying area emphasize the relative importance of available automobile capacity (90%) to serve the low-density land use environment and de-emphasize the relative importance of the almost non-existent transit capacity.

The calculations in Table 5, below, reveal that there are more PTA available in downtown Bellingham CSA #8 than in any other part of the City and that there are fewer PTA available in CSA #15 than in any other part of the City. From a concurrency standpoint, this means that the available infrastructure in downtown can, and should, support more infill development than the outlying suburban area which is lacking in infrastructure. The limited number of PTA available means that new development in the outlying area may not pass the concurrency evaluation test and would then be required to construct new pedestrian and bicycle infrastructure, adopted in the Comprehensive Plan, that is needed to serve the level of development that the zoning allows.

Multimodal Data Collection

Bellingham continues to measure arterial capacity by conducting annual traffic counts on arterial streets. Transportation planners also work directly with Whatcom Transportation Authority (WTA), the regional transit agency, to measure seated transit capacity and actual transit ridership. Bellingham is fortunate to have an excellent and collaborative relationship with WTA and both agencies have had tremendous influence on each others' long-term strategic transportation plans. Earlier this year, WTA was recognized as having the greatest transit ridership increase (20.7 percent) within the 150 largest transit service areas of the United States from June 2007 to June 2008.

While measuring road and transit capacity is relatively straight forward, it is much more difficult to measure the capacity of bike paths and sidewalks. Rather than measuring capacity, Bellingham measures the degree of completeness of the bicycle and pedestrian facilities in each CSA and awards PTA credit accordingly. Bicycle or pedestrian facilities must be a minimum of 50% complete in a CSA to be credited with PTA. For every 1% complete over 50%, the City will deposit 20 person trip credits into a CSA account. The City keeps a citywide inventory of bicycle and pedestrian facilities in a GIS database and annually measures the existing inventory against the total adopted planned bicycle and pedestrian network of facilities needed to serve new growth. Bellingham's Transportation Element includes over 120 bicycle and pedestrian projects recommended by the City BPAC for the 20-year planning period.

Annual Monitoring and Demonstration of Concurrency

Bellingham publishes a Transportation Report on Annual Concurrency (TRAC), which is a status report on the citywide surface transportation network.¹⁸ As of 2009, the TRAC now also reports the number of "Person Trips Available by Concurrency Service Area" for developers to draw upon in the coming year. Public Works presents the TRAC to the Planning Commission and the City Council at the beginning of each year. This allows staff to make recommendations for changes when necessary, alert decision makers about concurrency issues, and to seek direction from the City Council. If and when amendments or adjustments to the multimodal methodology are necessary, they must be approved by both the Planning Commission and City Council through an open public process.

Annual Transportation Concurrency System Works Like A Checking Account

Bellingham's new Multimodal Transportation Concurrency system works something like a checking account for each CSA (Figure 7). The account balance for each of the 15 CSAs is established in the TRAC each year (Table 5) and developers withdraw person trips from the account with each new development application. The City, transit

agency, or private sector can deposit person trips into accounts through capital projects and transportation mitigation. The City will not allow new development to overdraw the account and if there are not enough person trips available to serve the new development, then mitigation will be required to earn person trip credits through construction of new multimodal facilities on the BPAC priority list of sidewalk and bicycle lane projects identified for each CSA from the Transportation Element of the Comprehensive Plan.

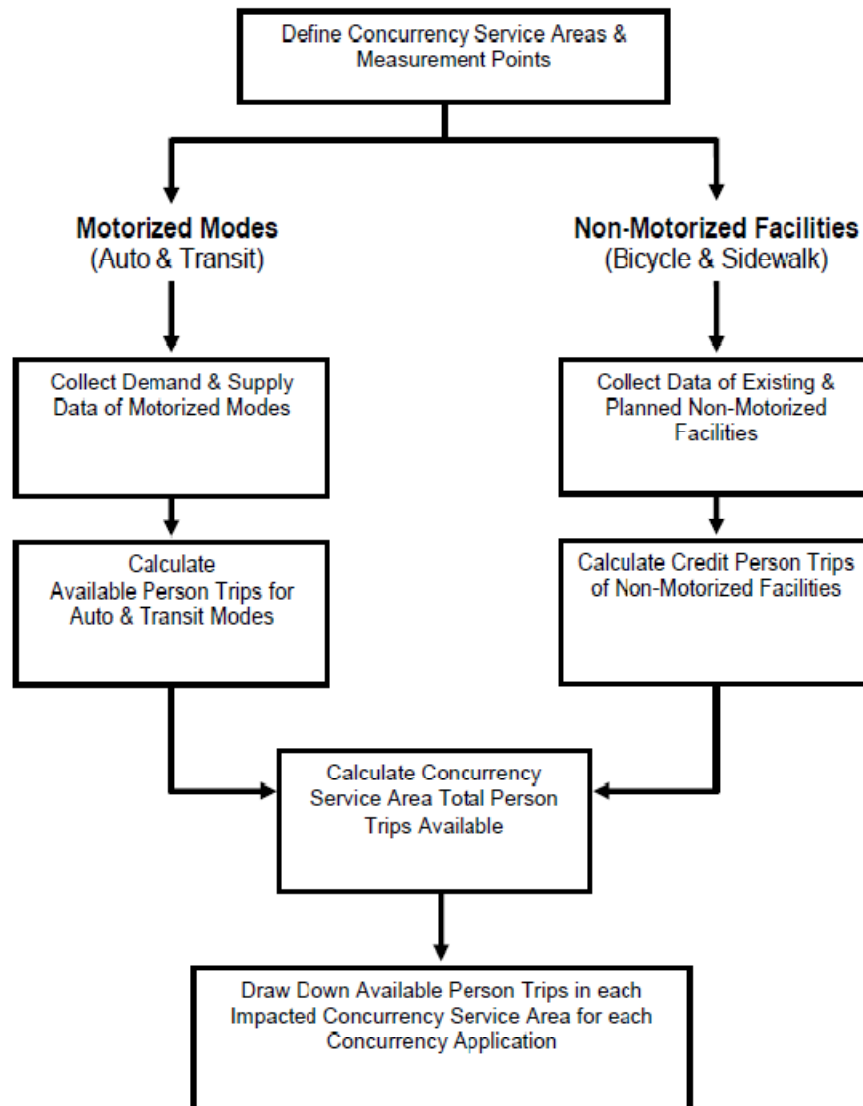


Figure 7. How Multimodal Transportation Concurrency Works

Any new development that requires more person trips than are available in a particular CSA must fund or construct an appropriate amount of additional transportation infrastructure, or institute measurable transportation demand management strategies, to ensure that there are enough person trips available on the multimodal transportation network to serve the new development. Consistent with State law for concurrency, if the developer cannot ensure that enough person trips will be available, then the City cannot accept the application for the proposed development. The new Multimodal Transportation Concurrency requirements were approved at the end of 2008 and became effective on January 1, 2009.

Concurrency Service Area¹	Sidewalk % Complete	Ped Credit PTA	Bike Lane % Complete	Bike Credit PTA	WTA Transit PTA	Vehicle Capacity PTA	Gross CSA PTA	Pending Pipeline Trips²	Net CSA PTA³
CSA 1	90.1%	480	76.5%	208	607	7,570	8,865	2,674	5,691
CSA 2	46.0%	0	66.3%	128	88	2,780	2,996	900	1,596
CSA 3	91.3%	492	70.3%	160	1,245	4,809	6,706	497	5,709
CSA 4	100%	600	100%	400	317	3,916	5,232	1,115	3,617
CSA 5	96.2%	552	91.3%	328	548	2,042	3,470	0	2,970
CSA 6	95.0%	540	96.7%	376	250	3,598	4,765	43	4,222
CSA 7	83.3%	396	93.6%	352	170	3,804	4,722	0	4,222
CSA 8	99.6%	600	87.3%	296	1,536	6,581	9,014	530	7,984
CSA 9	100%	600	67.0%	136	122	1,480	2,338	0	1,838
CSA 10	82.3%	384	94.9%	360	1,074	307	2,124	0	1,624
CSA 11	53.6%	48	62.6%	104	102	4,126	4,381	0	3,881
CSA 12	83.1%	396	89.4%	312	280	2,093	3,081	1	2,580
CSA 13	69.1%	228	93.9%	352	305	1,476	2,361	0	1,861
CSA 14	51.1%	12	84.7%	280	98	683	1,073	0	573
CSA 15	25.6%	0	7.3%	0	0	1,099	1,099	0	599
CITYWIDE					TOTAL	PTA	62,227	5,760	48,967

1. See Concurrency Service Area (CSA) map, Figure 6 in this case study.
2. Pending pipeline trips represent developments that have been issued a Concurrency Certificate, but have not been constructed and therefore not represented in the field data.
3. 500 PTA have been withheld from each CSA to maintain a minimum buffer of 500 PTA in each CSA.

LESSONS LEARNED

Perceived transportation problems need to be re-framed in the context of goals to be achieved

In 2004, Bellingham transportation planners decided that it was necessary to step back from perceived transportation problems and objectively consider whether the problem was being accurately characterized to begin with. Traditionally, transportation arterials that have been measured at 100% of the traffic capacity that they were designed to accommodate have been described by engineers as ‘failing.’ This term is used quite frequently, but perhaps not very accurately, in many traffic impact analyses and transportation planning studies. When used in this regard, implication of the term ‘failure’ is that the problem is with the transportation facility itself rather than the variables that affect it. While the facility may not have been designed to function beyond a particular threshold of traffic, the reality is that public demand for transportation capacity for a particular mode has exceeded the available supply during a particular, and usually short, time period. The traditional solution to this capacity-failure problem has been to increase the capacity-supply by adding automobile travel lanes through street widening, or increasing automobile storage ability at intersections by adding or lengthening turn lanes.

Urban areas cannot build their way out of traffic congestion

Transportation policies implemented in many communities, including Bellingham, during the post-WWII era led to expansive suburban-oriented land use that required the construction of multi-lane roads to accommodate increasing use of the private automobile. Today, Bellingham is striving to increase land use and transportation efficiency by creating a more compact urban footprint served by multiple modes of transportation and Bellingham’s perceived transportation problems are being re-stated and re-framed in light of that goal. Compact urban areas cannot build their way out of rush hour traffic congestion simply by widening streets and intersections to add automobile capacity. Bellingham transportation planners have chosen to reconsider transportation infrastructure capacity problems as transportation mobility and demand management problems with solutions

focused on maximizing the total capacity from all modes using the transportation system and minimizing, shifting, or spreading demand across the system.

Transportation impact mitigation will only address what is measured in the impact analysis.

Bellingham transportation planners concluded that if arterial or intersection capacity is measured only for automobiles, then mitigation required to address ‘deficiencies’ will only add automobile capacity in the form of vehicle travel or turn lanes, which may compromise the viability and safety of pedestrian, bicycle, and transit modes. Widening a street may also not be feasible from a physical or economic standpoint, nor desirable from an urban design standpoint. If the community’s goals are to ensure adequate multimodal transportation facilities and actually have new development contribute to the completion of the multimodal transportation network, then all facilities serving all modes of the network must be measured for adequacy in order for mitigation to have meaningful benefit to the community and the multimodal users served by the transportation network. In Bellingham, even if an arterial is congested with automobile traffic at rush hour, there may be incomplete sidewalks and bicycle lanes that can be constructed as mitigation for a project’s impact within a Concurrency Service Area. Alternatively, a developer can work with the public transit agency to enhance transit facilities and service.

One-size-fits-all automobile-oriented LOS standards do not work well in urban areas

Even in places with mandated statewide growth management legislation and requirements for concurrency or adequate public facilities ordinances, there is not a one-size-fits-all solution to ensuring that adequate multimodal transportation infrastructure is available concurrent with new development. Traditional Level of Service (LOS) standards, which may be appropriate for low-density rural areas, are not appropriate for high-density urban areas. Urban transportation planning and concurrency regulations must be specifically designed to carry out a city’s vision, goals, and policies within the context of each city’s unique circumstances. Bellingham had to create unique and progressive multimodal goals, policies, and development regulations to ensure completion of the multimodal transportation network that its citizens and planners envision for the future.

Non-city traffic can penalize infill development proposals

A disproportionate amount of traffic on Bellingham arterial streets is created by non-resident workers commuting into and out of the city each work day. While the City of Bellingham cannot control the amount of traffic entering and exiting the city, this non-city generated traffic is included in arterial traffic counts. This tends to exhaust the capacity available when traditional auto-centric LOS measurements are used. Non-city generated traffic was effectively penalizing new infill development proposals in the Bellingham by requiring automobile capacity-adding mitigation that exacerbated the situation and was not consistent with infill land use goals.

The public doesn’t relate well to LOS, but can relate to automobile traffic counts

The traditional volume-to-capacity (v/c) method of calculating LOS and capacity for arterials has been the common measurement standard throughout the transportation industry for decades. Collecting data for the v/c method is easy, straight-forward, and provides an understandable measure of quantity. All that is required to derive the v/c measurement is a measurement of existing traffic volume from a traffic counting device and an assigned design capacity for the arterial, such as 750 cars per lane. If 700 cars were counted in a westbound lane that had a design capacity of 750 cars per hour, then the peak hour v/c ratio would be .93, or LOS “E.” However, the only aspect of transportation being measured is automobile use. For the predominantly automobile-driving public, LOS classifications are confusing, but it’s relatively easy to understand what is meant when told that traffic counts indicate that the arterial is 93% full at the busiest time of day.

It’s hard to teach an old dog a new trick

Bellingham’s Multimodal Transportation Concurrency methodology de-emphasizes traffic counts as the primary determinant of the LOS measurement and adds three non-automotive measurements to reflect total multimodal capacity available to new development. Bellingham’s transportation planners learned that it is difficult to supplant an existing and accepted methodology with an unconventional and new methodology that is not well understood by the public. Outreach efforts were made within the development community and multiple public work sessions were held with the City Council to help provide transparency and understanding of the new methodology for

elected officials, the public, and even the media. A lot of information goes into the new Multimodal Transportation Concurrency system and it is difficult to explain to a public that is used to the look and feel of automobile traffic congestion as the measure of the transportation system. Multimodal measures of mobility and system completeness provide good information for planners, but the public still sees, hears, and feels the inconvenience of traffic congestion in certain places at certain times of the day.

Cities change; resident expectations must change with them

Achieving a balanced and integrated approach to land use and transportation planning requires constant compromise and willingness to adjust commonly held beliefs and ideals. Traffic congestion is not a condition desired by anyone, but it is a necessary evil, at least during work commute hours, in vibrant and densely-built urban environments that favor pedestrian-oriented design. Some people do not agree with this philosophy, but local residents who decry 'urban sprawl' must also become willing to accept a different set of expectations and attitudes toward both infill development and traffic congestion. The opportunity for urban infill development includes an opportunity cost of increased traffic congestion, although much less than there would be from suburban development at the edge of the city. The City's transportation policy openly acknowledges that there will be arterials and intersections that will experience significant traffic congestion during the evening rush hour, but that this is to be expected given the infill land use goals that the City is working to achieve. Bellingham's aim is not to eliminate private automobiles, but to encourage the use of other transportation modes while reducing the costly transportation capacity demand made by automobiles, and especially single occupant vehicles, on City arterial streets.

Transportation concurrency methodologies must be flexible and adaptable

Washington's GMA requires cities to adopt LOS standards for transportation facilities in their comprehensive plans and transportation concurrency ordinances to enforce and maintain those LOS standards. Once these LOS standards are adopted, however, comprehensive plans may only be amended once per year (RCW 36.70A.130) and only through a lengthy public process. When using only the traditional volume-to-capacity ratio method of calculating capacity for arterial segments and the Highway Capacity Manual LOS standard classifications of A through F, Bellingham literally ran out of capacity on one major arterial corridor in 2007. While significant development potential remained along this corridor, due to GMA concurrency requirements, the City had to impose a building moratorium along the corridor that lasted for 9 months.

Before the moratorium could be lifted, the adopted LOS for that arterial had to be amended from LOS E to LOS F. Staff had to hold publicly televised public hearings with 30-day public notice requirements before both the Planning Commission and the City Council with an unpopular recommendation to change the adopted LOS from E to F during the peak hour. This long process fueled controversy and misinformation from the media and anti-growth groups and politically charged the issue. Even after the City Council begrudgingly voted to allow the lower level of service on this corridor, the once-per-year amendment requirement of GMA forced the City to wait until the end of 2007 to lift the building moratorium because all Comprehensive Plan amendments have to be made at one time.

Bellingham's non-traditional solution to this rigid and inflexible procedural problem was to fundamentally change the methodology and unbundle the adopted LOS from the concurrency calculation. Bellingham meets the GMA requirement to adopt the LOS standard in the Comprehensive Plan, but has codified the methodology for calculating and evaluating the LOS as part of the development regulations within the Bellingham Municipal Code under the Multimodal Transportation Concurrency ordinance (BMC 13.70). If amendments are needed to BMC 13.70, then public hearings are still required before both the Planning Commission and the City Council, but they do not require amendments to the adopted LOS in the Bellingham Comprehensive Plan, code amendments can be made more than once-per-year, and they become effective two weeks after adoption. This makes for a much more nimble, flexible, and adaptable system that can respond to changes, as needed, in a more timely fashion, without compromising public process requirements.

New approach will require monitoring and adjustment

Bellingham’s multimodal approach is designed to specifically address the unique local land use and transportation policies of Bellingham and it remains to be seen how effective this new system will be over time. Annual performance measures, monitoring, and reporting will help transportation planners make adjustments to the system, where needed. The flexibility built into this new system will help transportation planners respond to changing city conditions more efficiently and effectively. There are some critics and skeptics of Bellingham’s Multimodal Transportation Concurrency system, but there have also been a great number of inquiries made by transportation professionals from other urban areas interested in adopting similar multimodal approaches. This may not be the preferred approach for some jurisdictions, but Bellingham transportation planners encourage other jurisdictions to take a look, use what you can, and leave the rest.

RESOURCES

¹ Housing Element, Bellingham Comprehensive Plan, 2002-2022. City of Bellingham, WA (2006).

² Washington Statute RCW 36.70A.070 Growth Management Act.

³ Washington Statute RCW 36.70A.020 Planning goals.

⁴ Washington Statute RCW 36.70A.070 Comprehensive plans – Mandatory elements (1) Land Use Element.

⁵ Washington Statute RCW 36.70A.070 Comprehensive plans – Mandatory elements (6) Transportation Element requirements.

⁶ Washington Statute RCW 36.70A.070 (6)(b) Transportation Concurrency requirements.

⁷ Washington Administrative Code WAC 365-195-510. “Transportation Concurrency.”

⁸ Washington Statute RCW 36.70A.130 Comprehensive plans – Review – Amendments (2)(a) No more frequently than once every year

⁹ Transportation Element, Bellingham Comprehensive Plan, 2002-2022. City of Bellingham, WA (2006).

¹⁰ Land Use Element, Bellingham Comprehensive Plan, 2002-2022. City of Bellingham, WA (2006).

¹¹ WTA Six-Year Strategic Service Plan, 2005-2011. Whatcom Transportation Authority, Bellingham, WA (2004).

¹² Six-Year Transportation Improvement Program, 2010-2015. City of Bellingham, WA (2009).

¹³ Bellingham Municipal Code Chapter 19.06, Transportation Impact Fees. City of Bellingham, WA (1994).

¹⁴ Bellingham Municipal Code Chapter 13.70, Multimodal Transportation Concurrency. City of Bellingham, WA (2008).

¹⁵ Highway Capacity Manual 2000. Transportation Research Board of the National Research Council, Washington, D.C. (2000)

¹⁶ RFP #130B-2007 Transportation Concurrency Methodology Revision Project ET-16, City of Bellingham, WA (2007).

¹⁷ Multimodal Transportation Concurrency Program Development Document, City of Bellingham, WA (2009).

¹⁸ Transportation Report on Annual Concurrency (TRAC) City of Bellingham, WA (2006, 2007, 2008, 2009).

For additional information regarding multimodal transportation planning efforts in Bellingham, please contact Chris Comeau, AICP, Transportation Planner ccomeau@cob.org (360) 778-7900 in the Bellingham Public Works Department.

Biographical Information

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