Multimodal Transportation Concurrency

Final Report

City of Bellevue, WA

January 14, 2021

Land Acknowledgement

On behalf of the City of Bellevue, we acknowledge the land we are on as the ancestral homelands of the Coast Salish people, the traditional home of all tribe and bands within the Duwamish and Snoqualmie Indian Tribe. We take this opportunity to honor and express our deepest respect to the original caretakers of this land. A people that are still here, continuing to honor their heritage.

Workshop Participants

City of Bellevue Staff:

Transportation Department

- Andrew Singelakis, Director
- Paula Stevens, Assistant Director, Transportation Planning
- Mark Poch, Assistant Director, Traffic Management
- Kevin McDonald, Principal Transportation Planner
- Eric Miller, Capital Programming Manager
- Molly Johnson, Development Review Manager
- Chris Iverson, Senior Transportation Engineer
- Mike Ingram, Senior Transportation Planner
- Kristi Oosterveen, Management Policy Analyst
- David Grant, Public Information Officer
- Chris Long, Interim Assistant Director, Transportation Engineering Manager
- Shuming Yan, Transportation Forecasting Manager

Community Development Department

- Emil King, Assistant Director
- Joe Van Dyk, Planning Manager

City Attorney's Office

- Monica Buck, Assistant City Attorney

Fehr & Peers Staff:

- Chris Breiland, Principal
- Don Samdahl, Principal

Kevin McDonald

Molly Johnson

Andrew Singelakis

Emil King

Shuming Yan

Chris Long

Mark Poch

Don Samdahl

Eric Miller

Chris Iverson

Paula Stevens

Kristi Oosterveen

Mike Ingram

Monica Buck

Joe Van Dyk

Chris Breiland

David Grant

Introduction

A message from the Transportation Department Director, Andrew Singelakis

Bellevue is undergoing an evolution in land use and mobility. Where and how people choose to live, work and get around in the city is evolving, as are the transportation facilities that enable mobility for everyone. What is also evolving in Bellevue is the set of metrics the city uses to monitor and evaluate the performance of the transportation system and how those metrics inform transportation projects, priorities and investments.

Recognizing the constant need for change to keep Bellevue moving forward, staff has built upon prior work by the Transportation Commission and has prepared this recommendation for a new approach to transportation concurrency that is truly multimodal, while also aspiring to be equitable and sustainable.

This report documents the staff recommendation for multimodal concurrency. A diverse staff team collaborated with consultants at the firm Fehr & Peers to prepare this recommendation through a series of virtual workshops that identified best practices and applied those within the Bellevue context. Staff was guided in this work by the framework of the Growth Management Act, the policies in the Comprehensive Plan and direction from the City Council. To implement multimodal concurrency by the end of 2021 will require amendments to both the Comprehensive Plan and the Traffic Standards Code.

Multimodal concurrency is part of the work to create a Mobility Implementation Plan for which Council has provided direction and funding. In that effort, the Transportation Commission will prepare a recommendation for Council consideration that integrates policy objectives, modal priorities and project descriptions.

A Mobility Implementation Plan will create a framework for evaluating the performance of the transportation system that considers the level-of-service for all modes; informed by the Transportation Commission's 2017 report on Multimodal Level of Service, Metrics, Standards and Guidelines.

I appreciate the dedicated effort of everyone on staff and the consultant team to achieve this recommendation. It is intended to provide a "running start" to assist the Transportation Commission in its work on the Mobility Implementation Plan.

Table of Contents

List of Figures

chapter
1

Executive Summary

Under the Washington Growth Management Act (GMA), Bellevue is required to ensure that the transportation system adequately accommodates planned land use growth – a requirement known as transportation concurrency. The GMA recognizes the unique conditions around the State and thus allows jurisdictions to define the terms that meet transportation concurrency. Bellevue defines concurrency in terms of the capacity of roadway intersections to accommodate the vehicles that travel through them; this is the ratio of volume to capacity (V/C). While the allowable V/C varies across 14 Mobility Management Areas (MMAs) in the city, the fundamental component is a metric that considers level-of-service only for motorized vehicles.

Staff recommends a new approach that balances the concurrency equation across two fundamental factors: the "supply" of transportation system mobility, and the "demand" for mobility generated by land use growth and development. In this system, concurrency is achieved when the supply of mobility exceeds the demand. The idea of transportation system supply and demand, along with now the proposed new concurrency system links them together is described below:

- Supply is defined by the level of investment Bellevue has committed to build new multimodal transportation infrastructure that supports new growth. The amount of investment and the types and locations of specific projects will be defined in the Transportation Facilities Plan. Modeling performed in support of the Transportation Facilities Plan will demonstrate how the transportation system is expected to perform as new growth occurs in the City.
- The transportation concurrency framework of "System Completeness" links the supply of transportation projects built by the City and the demand of new person-trips generated by growth and development. In summary, new supply provides the multimodal transportation capacity to accommodate the additional person-trip demand. The Transportation Facilities Plan identifies the required system of transportation projects to meet forecasted growth. So long as the transportation system is completed before or concurrently with new development, the transportation concurrency requirement is met.

Ensuring that supply is available concurrent with development is an equitable approach that ensures transportation facilities are in place to serve people's mobility needs, regardless of their choice of mode, purpose of trip or time of day. A multimodal approach is sustainable from the perspectives of the environment and the budget, since the City may select a wide range of projects and programs that correspond to budget constraints and environmental objectives to meet growing travel demand. Personal and community health also benefits when people have meaningful choices for active transportation.

Ultimately, multimodal concurrency for Bellevue advances the Comprehensive Plan transportation policies and priorities, and implements modal plans for pedestrian, bicycle and transit facilities as it provides methods and metrics to identify, prioritize and build projects that create a complete transportation system for all modes.

chapter
2

Overview

The existing transportation concurrency program in Bellevue is based on vehicle capacity at "system" intersections in the PM peak period. This system, largely intact since the 1980s, was cutting edge at inception and has supported Bellevue growth, but it is now outdated. Standards for vehicle capacity level-of-service (LOS) are exceeded at more and more intersections, and the approach to mitigate development impacts by expanding intersection capacity is not sustainable fiscally and environmentally. Bellevue has concurrency challenges in some parts of the city under the existing system, and it is clearly time to look at changing the system. The alternative choices are to continue the fiscally and environmentally unsustainable approach of adding vehicle capacity or to deny building permit applications.

A multimodal approach to meet the mobility needs of the community has been explored by and is supported by the Transportation Commission. Multimodal concurrency will help create a transportation system that is more equitable and sustainable and that supports the land use vision. Amendments to both the Comprehensive Plan and the Traffic Standards Code will be required to implement multimodal concurrency. These changes may be accomplished as embedded elements in a Mobility Implementation Plan (MIP), or they may be considered separately by the Transportation Commission, the Planning Commission, and the City Council.

Council direction toward multimodal concurrency is provided by Comprehensive Plan policy:

TR-29: Observe the following policy guidance in revising level-of-service standards by Mobility Management Area:

2. Establish multimodal level-of-service standards adequate to ensure a functional transportation system.

TR -30: Establish multimodal level-of-service and concurrency standards and other mobility measures and targets for transportation corridors and in each area of the city in consideration of planned development patterns and mobility options.

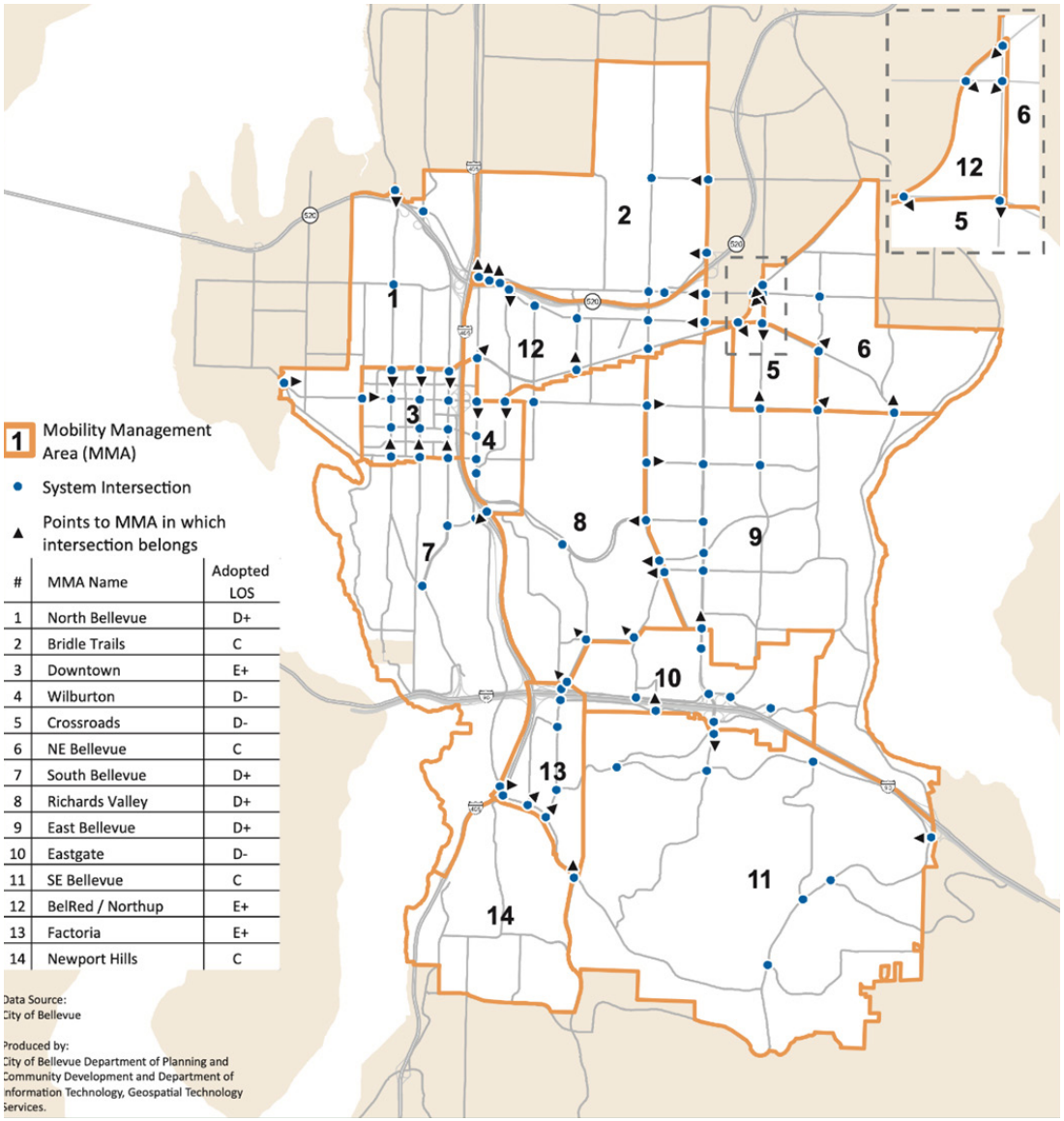
Prior work to implement policy TR-30 resulted in a milestone deliverable from the Transportation Commission in the Multimodal Level-of-Service: Metrics, Standards and Guidelines Report, April 2017. This report provides metrics for all modes and demonstrates that a multimodal approach could replace vehicle level-of-service with a balanced assessment of mobility for all modes. The 2017 report provides a means for measuring the performance of the transportation system supply across all modes; however, the report does not specifically address how a multimodal transportation concurrency framework would relate transportation system supply and demand. It is from this starting point that staff began to explore multimodal transportation concurrency in Bellevue.

chapter
3

Transportation Concurrency in Bellevue

The Washington State Growth Management Act (GMA) of 1990 requires that local jurisdictions establish concurrency metrics to determine the capacity of the transportation system to support demand for travel from new development. Specifically, the GMA requires that a performance standard be established, and that the community must meet that standard concurrent with new development. The Bellevue Comprehensive Plan and the Traffic Standards Code (Bellevue City Code Chapter 14.10) establishes the City's transportation concurrency policies, standards and methodologies, and compliance determination process.

The Traffic Standard Code defines 14 Mobility Management Areas (MMA) within the city. Within each MMA, there are designated intersections called "system intersections" where vehicular performance measures are calculated and reported. The Traffic Standards Code provides for two metrics for each MMA: the maximum average system intersection volume-to-capacity (V/C) ratio; and the maximum number of intersections allowed to exceed the V/C ratio threshold defined for each MMA (congestion allowance). The level-of-service standards vary by MMA in consideration of the land use vision for the area, the availability and level-of-service of each mode of travel, and community input. **Figure 1** from the Comprehensive Plan shows the MMAs, the level-of-service standards for each MMA, and system intersections.



#	MMA Name	Adopted LOS
1	North Bellevue	D+
2	Bridle Trails	C
3	Downtown	E+
4	Wilburton	D-
5	Crossroads	D-
6	NE Bellevue	C
7	South Bellevue	D+
8	Richards Valley	D+
9	East Bellevue	D+
10	Eastgate	D-
11	SE Bellevue	C
12	BelRed / Northup	E+
13	Factoria	E+
14	Newport Hills	C

Figure 1 Mobility Management Areas and Level-of-Service Standards in Bellevue

The idea of setting level-of-service standards that vary in different parts of the city, based on the land use context, viability of other modes, and community input was best practice when Bellevue introduced the system 30 years ago. At that time, many communities that were experiencing rampant suburban development set uniform level-of-service standards intended to result in relatively uncongested PM peak hour traffic conditions. Bellevue realized this single-standard system was unrealistic for the community that included a growing downtown and relatively stable residential areas. Today, many communities have adopted variable level-of-service standards similar to the system pioneered in Bellevue.

While the variable level-of-service approach may still be appropriate for other jurisdictions, Bellevue's evolution to a major regional employment center supported by an increasingly multimodal transportation system is straining the value of the single-mode, vehicle-focused level-of-service standard. Put simply, the V/C-based performance measure at system intersections is no longer the best single indicator to represent the performance of the city's multimodal transportation system. Furthermore, the vehicle-focused level-of-service standard does not adequately identify gaps and performance limitations of other modes, which are increasingly key to livability, sustainability and equitable mobility across the City.

A modern transportation concurrency approach for Bellevue will incorporate best practices to embed metrics and standards for all modes. This multimodal approach is intended to accommodate the travel demand of a growing community and to equitably allocate resources to create a supply of mobility among a wide range of transportation investments.

chapter
4

Other Transportation Priorities for Bellevue

While transportation concurrency is important, and required by State law, there are other considerations that Bellevue weighs when deciding how to invest transportation financial resources and allocate right-of-way. Ideally, a transportation concurrency system would, at a minimum, be compatible with these other priorities, and at best, be able to embody these other City goals. Key considerations are summarized in this chapter.

4.1 Transportation Response to Growth

Growth presents challenges and creates opportunities for people to have more choices/options when it comes to mobility. Services, jobs and recreation that are closer to where people live allows for shorter trips, some of which may be taken without using a car – this is the notion of a "15-minute city." Fewer and shorter trips taken by car may reduce per capita vehicle miles traveled, greenhouse gas emissions and a host of other pollutants – supporting the Bellevue Environmental Stewardship Initiative goal to reduce greenhouse gas (GHG) emissions. Community and personal health benefits also result from people choosing readily available "active transportation" modes.

Investments in equitable mobility options enable people to get where they need to go in their neighborhood or around the city regardless of physical or financial capacity. The city strives to make investments a priority where there are "gaps" in the transportation system for people who are walking and bicycling – where such gaps may isolate those whose age, ability or means limits their mobility options.

While growth has changed the Bellevue landscape with new buildings that host jobs and housing, one thing has remained nearly constant for decades –the average number of vehicles per day on Bellevue arterials. The daily traffic counts across the city, and surprisingly even in growth areas like Downtown, have stayed nearly constant since the 1990s. That may be explained in a number of theories, including a gradual shift in mode share with more people choosing to walk, ride a bicycle, take transit, ride in carpools and vanpools, and work from home. Also, as more development occurs, the distances decrease between many places that people want to go, and closer distances means that people may choose to walk or ride a bike. That is not to say that PM peak hour congestion has stayed the same, but the total number of vehicle trips in a day has not changed much.

Existing concurrency measures address only the PM Peak period for vehicle capacity. This does not capture the full range of daily trips that are taken by people who may use a variety of modes, for many purposes, at any time of day, and with varying levels of mobility. The staff recommendation for multimodal concurrency addresses mobility in a comprehensive manner, considering the full range of transportation facilities.

evel-of-service standards for each MMA, and system intersections.

4.2 Transportation and Economic Development

Multiple modes of transportation are important for keeping Bellevue a competitive and attractive place for businesses of all sizes and types. Employees may seek a variety of options to get to work, including public transit, bicycle, and walking. These services and facilities utilize and compliment the city's road network. A variety of commute options improves the ability of employers to recruit and retain their staff.

Bellevue's residents and employees are very diverse and have origins across the country and the world. Not all of them drive a car. Workers who move here from walkable neighborhoods or places with robust public transportation service may be accustomed to commuting without driving a car.

When considering a business location, among an employer's primary considerations is their ability to hire and retain talented people. They want their employees to be able to get to work reliably, on time, and with little stress. Easy, reliable commutes improve productivity and employee satisfaction. Based on discussions with major employers, a key factor for many who choose to locate in places like Downtown Bellevue or BelRed is proximity to strong transit options, and the option for workers to live within a short walking or biking distance of work. For employers who need good vehicle or freight access to their businesses, other parts of the City can provide those access amenities as well, while the City continues to invest in improving mobility and safety for all modes. A notable example is in the Eastgate area where the City recently improved bicycle facilities while also working with WSDOT to eliminate some traffic bottlenecks at the ramps with I-90.

4.3 Transportation and Safety

Safety in the design and operation of the transportation system is a City Council priority. When more people are out walking and bicycling, there tends to be a safer environment for everyone, because pedestrians and bicyclists are more visible to drivers. A multimodal transportation system can provide an equitable approach to safety, helping to achieve the Vision Zero target of zero deaths and serious injuries on Bellevue roadways. Shifting from a transportation concurrency standard that is focused solely on vehicle level-of-service is a meaningful way to consider mobility and safety for users of all modes.

4.4 Transportation and the Environment

When residents take fewer and shorter trips in their cars, the result is cleaner air and fewer GHG emissions from transportation sources – this outcome supports Bellevue's Environmental Stewardship Initiative goals to reduce GHG emissions. Infrastructure that supports active modes like walking and bicycling may result in less polluted runoff from impervious surfaces, because there is less need to widen impervious roadway surfaces. Clean stormwater runoff supports habitat for salmon and other aquatic species in Bellevue's streams, lakes, and wetlands and has been shown to be a high priority to residents in the City and region.

chapter
5

Multimodal Transportation Concurrency Best Practices

This chapter describes some of the best practices in multimodal concurrency that the project team considered to better reflect the evolving land use, transportation system, traveler expectations, and city priorities. The pros and cons of the different options are also identified.

5.1 Mode Share Best Practice

The City of Seattle uses mode share to determine transportation concurrency. Under this system, Seattle requires a transportation impact analysis of a proposed development to determine whether the mode share of the occupied building would meet single-occupancy vehicle (SOV) mode share standards established for different areas in the City in the Seattle Comprehensive Plan.

If analysis shows that a development would generate SOV trips at a mode share at or below the threshold, the project would meet concurrency requirements. If the analysis shows that the development would generate a SOV mode share above the concurrency threshold, mitigation or development project modification would be required. For the most part, a development along a frequent transit corridor, in an urban village, or in an urban center will meet SOV mode share requirements based on the nature of the transportation services and mix/density of land uses in the area. Any development outside of these areas would likely require mitigation (except for land uses exempt from transportation impact analysis requirements).

This concurrency policy encourages development in areas of the city where policy seeks to focus new development (i.e., higher-density areas with good transit service) and imposes additional requirements on development outside of transit corridors and urban villages/centers. **Figure 2** is a map of the mode share standards.

Pros:

- Relatively simple metric that the public generally understands
- Nexus to Bellevue's transportation demand management programs/ requirements
- Consistent with City climate goals and desire to reduce reliance on cars
- Relatively simple to calculate

Cons:

- Requires consistent monitoring of a new building to demonstrate ongoing concurrency compliance
- Mode share is not completely under the City's control (e.g., reduced bus service could increase SOV mode share)
- Pro-auto groups could consider this an infringement on freedom to drive
- A concurrency failure could be difficult to mitigate for some projects (e.g., certain types of retail or residential projects away from transit routes)

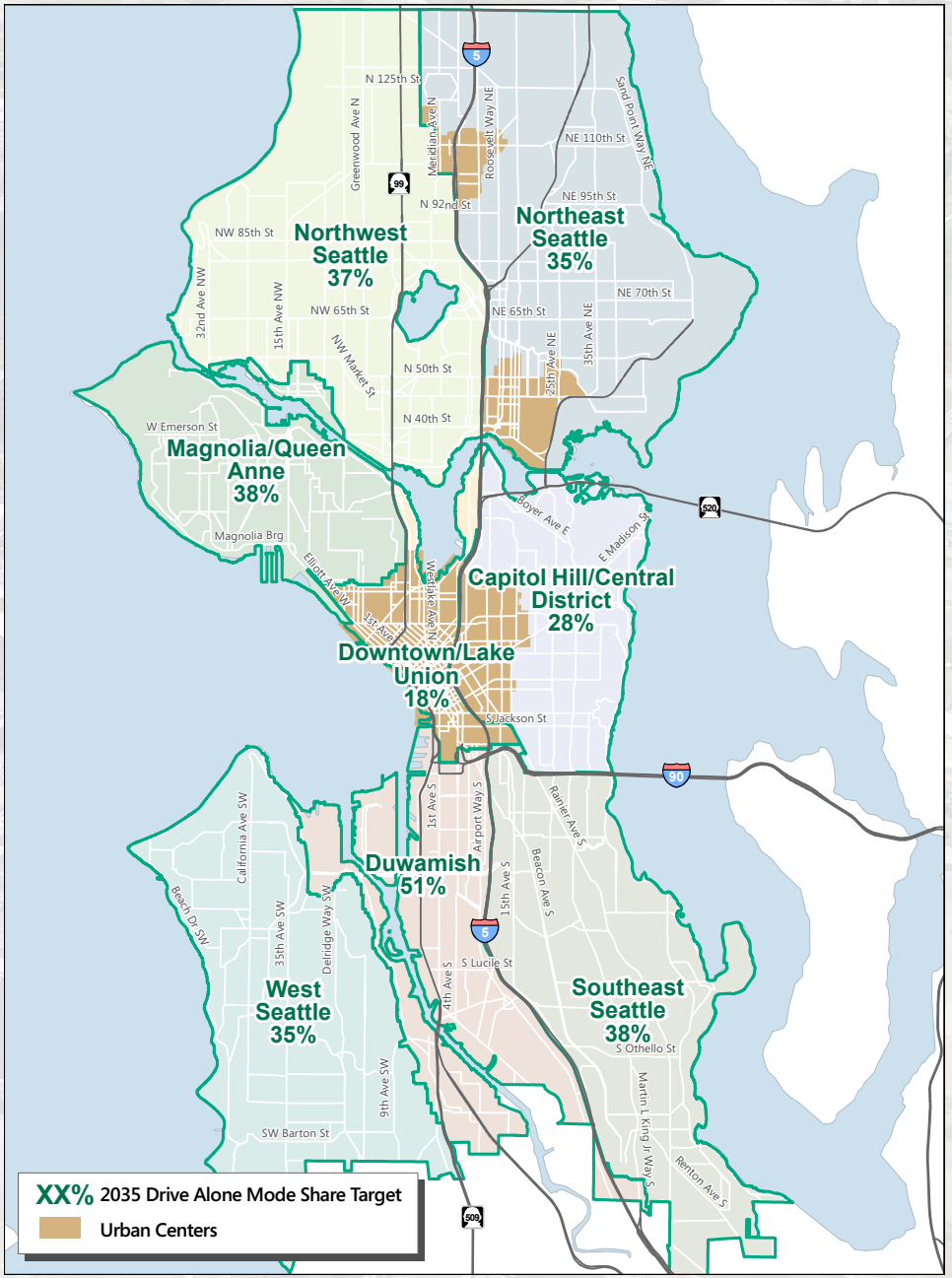


Figure 2 Seattle's Mode Share Targets for Concurrency

5.2 Vehicle Miles Traveled Best Practice

While not employed as a transportation concurrency standard anywhere in Washington state, vehicle-miles traveled (VMT) could serve as a concurrency standard, similar to mode share. Many California jurisdictions use VMT as the primary transportation metric to analyze impacts, apply mitigation and monitor project performance. This methodology applied to a development proposal is similar to how transportation concurrency is applied in Washington.

In California, the state establishes regional per-capita VMT standards that must be met for a new development proposal to proceed. The per-capita component to the VMT standard is important because it recognizes that most communities are expected to grow. Setting a gross or total VMT standard could be unrealistic in a growing community and could stifle new growth that meets the community's land use vision. Focusing on per-capita VMT acknowledges the fact that some communities will add jobs/housing (and thus total VMT might increase), but each new resident or employee is expected to generate less VMT than the status quo – helping to achieve overall environmental and traffic congestion goals.

In some areas, the inherent land use density, travel pattern, mode share, etc. allow proposed land use projects to proceed without any further transportation approvals (i.e., they are in low per- capita VMT-generating urban areas). However, in other areas, a proposed development must incorporate mitigations to reduce per- capita VMT to be considered for approval. Development mitigations have included such actions as employing a private shuttle program, rebalancing the mix of uses in a development, and charging a fee for residents/employees to enter/leave the development in a car. **Figure 3** shows an example of low-VMT areas in Placer County, California, which is adjacent to Sacramento. The low-VMT areas require less (sometimes no) additional development project modifications or transportation demand management programs to meet State and regional VMT targets.

It is worth noting the Seattle considered using per-capita VMT as a transportation concurrency metric, but instead selected mode share. Ultimately, the measures are similar, but Seattle staff felt that the public was more familiar with mode share and the goal of reducing single-occupant vehicle mode share is easier to understand and support than reducing per-capita VMT. As the public gets more familiar with VMT, this might not be a substantial issue in the future.

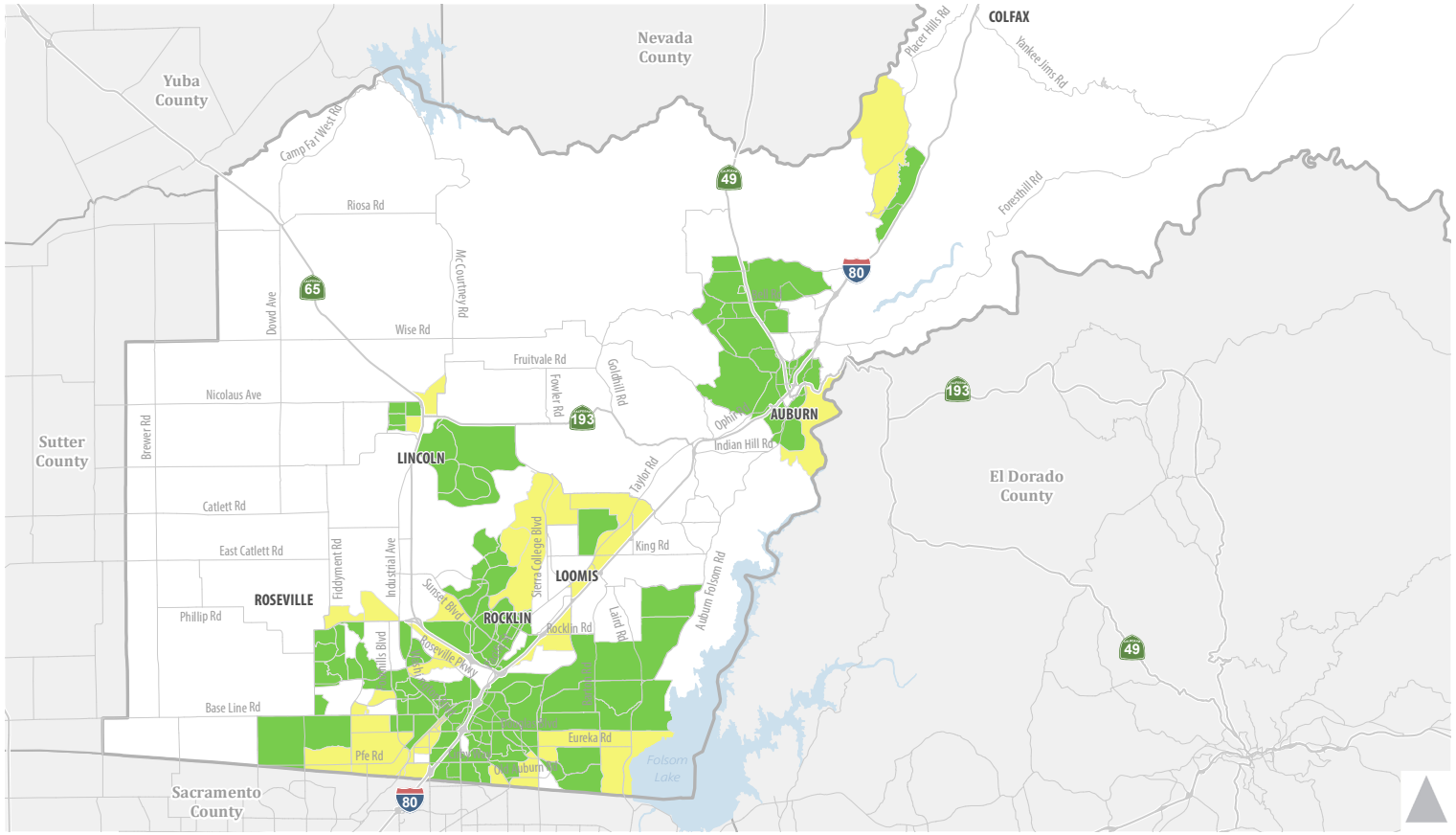
Pros:

- Relatively simple metric that the public generally understands
- Nexus to Bellevue's transportation demand management programs/requirements
- Consistent with City climate goals and desire to reduce reliance on cars
- Relatively simple to calculate
- Per-capita VMT is already a metric used by Bellevue within the Bellevue Environmental Sustainability Initiative

Cons:

- Requires consistent monitoring of a new building to demonstrate ongoing concurrency compliance
- Pro-auto groups could consider this an infringement on freedom to drive
- A concurrency failure could be difficult to mitigate for some projects (e.g., certain types of retail or residential projects away from transit routes)
- A considerable amount of per-capita VMT in Bellevue is not generated by Bellevue residents or businesses (i.e., pass-through trips that have no origin or destination in Bellevue) and is not under the control of the City

Figure 3 Low VMT Areas in Placer County, CA



< -15% below County Average*

0 to -15% below County Average*

Higher than County Average*

5.3 Transportation System Completeness Best Practice

A growing number of communities in Washington employ transportation system completeness as a metric to determine whether a community is implementing transportation infrastructure concurrent with new development. In Washington State, the cities of Redmond, Kirkland, Kenmore and Olympia have adopted system completeness as their transportation concurrency standard. Bellingham and Spokane also have a system completeness element to concurrency, but it is blended with traditional vehicle level-of-service concurrency standards.

System completeness is not complicated. It requires that a community define a set of transportation investments/projects that aligns with a given amount of growth and then build those projects at a rate that keeps pace with or ahead of development. Specific investments/projects are determined by the available resources and the desired performance of the transportation system, as measured using a variety of performance metrics. Often the performance metrics and targets for how the transportation system operates are based on the goals and policies of the community's Comprehensive Plan.

The system completeness concurrency standard is met when the community implements the transportation system projects at a rate concurrent with proposed development. Concurrency is achieved and maintained when the supply of transportation capacity created by projects for all modes is greater than the demand for mobility created by the person-trips from new development.

Pros:

- The transportation system projects being implemented are known to the community and consist of projects previously identified, vetted, and documented through long-range city planning,
- The ability to meet concurrency is entirely within the City's control,
- Straightforward to calculate and track concurrency.
- Performance metrics for an individual mode may be tracked and used for planning purposes and project prioritization, but they are not the concurrency standard.

Cons:

- The concurrency standard is not tied to a specific performance metric for an individual mode, such as v/c for an intersection. This may cause concern for people who focus on how a given mode of travel operates.
- The standard is a significant change to "traditional" vehicle-based, performance-based methods.

chapter

6

System Completeness as a Concurrency Framework

In a series of study sessions in 2014, the Transportation Commission reviewed concurrency best practices (including those described in the previous section). The Transportation Commission approved recommendations for a multimodal level-of-service (MMLOS) policy – adopted in the 2015 update to the Comprehensive Plan. The Commission also recommended that Bellevue staff further explore the potential of advancing system completeness as a way to incorporate a multimodal lens to transportation concurrency.

Recognizing the deep technical discussions and analysis needed to provide a well-considered concurrency recommendation to the Transportation Commission - in the context of the larger Mobility Implementation Plan work plan - city staff engaged a consultant team from Fehr & Peers.

Through a series of virtual workshops with Fehr & Peers in the summer and fall of 2020, staff reviewed transportation concurrency best practices, and further explored transportation system completeness in concurrency, and its implications for Bellevue with related issues like transportation impact fees and State Environmental Policy Act (SEPA) analysis.

A summary of the workshop topics and discussions are provided in the following section.

6.1 The Workshops

A growing number of communities in Washington employ transportation sUsing the Microsoft Teams virtual meeting platform, Fehr & Peers conducted a series of workshops with staff in the Transportation Department, Community Development, Development Services, and the City Attorney's Office. The intent of the workshops was to identify and discuss multimodal concurrency options and to prepare a staff recommendation. **Figure 4** shows an example of the title slide and participants for one of the virtual workshops.

Figure 4 Teams Meeting Virtual Workshop

What follows is a brief overview of the topic areas discussed at each of the workshops.

Workshop #1, June 8, 2020:
Reviewed Transportation Concurrency Best Practices:

- Mobility units/system completeness
- Mode share
- Vehicle Miles Traveled (VMT)

Workshop #2, June 29, 2020
Identified a multimodal concurrency approach for further refinement toward a staff recommendation

- Focused discussion on system completeness

Workshop #3, July 13, 2020
Outlined a workplan to implement system completeness as Bellevue's transportation concurrency approach:

- Discussed whether to include MMAs or zones to evaluate system completeness
- Supply and demand will need to be defined as part of TFP or some other process
- How to measure supply, dollars invested or other approaches)

Mini-Workshop. July 16, 2020

"In the Weeds" This workshop went into detail about three specific elements of system completeness

- Running start pros and cons
- How to account for supply provided by others
- Considering transportation demand management programs

Workshop #4, July 27, 2020
Achieved an understanding about the relationship between multimodal concurrency and multimodal impact fees.

- Build the transportation system (as defined by the TFP) faster or equal in pace to the forecasted growth (as defined in the TFP modeling).
- Ensure the planned transportation system is being implemented in sync with expected rate of development.

Mini Workshop August 10, 2020
Mobility Units – Supply and Demand

- Further discussions about how to account for supply and demand
- Discussed more details about mobility units and how supply and demand are linked together

Mini Workshop August 13, 2020
Mobility Units – Running start capacity and capacity provided by others

- Running start may be worthwhile in the future when the City has a less robust CIP being implemented
- Came to the conclusion that capacity provided by others can be taken into account in how much of a system to supply as part of the TFP
- Complex accounting for capacity by others is not worth the benefit

Workshop #5, September 15, 2020
Finalized decisions and prepared for next steps to formalize staff recommendation for multimodal concurrency

- Concurrency standard: Mobility units supply → mobility units of demand
- Concurrency determined across a single mobility management area (existing MMA structure could be maintained for monitoring)
- Mobility units of demand: Person-trips generated from new development
- Mobility units of supply: Proportion of concurrency project list that is committed/funded/constructed
- City will define the projects that count toward supply
- No running start projects
- No capacity from other agencies in supply calculation
- Limited transportation demand management (TDM) defined by City to count as credit to demand

Mini Workshop October 8, 2020
Transportation Facilities Plan – next steps

- Discussed how to prioritize projects in the TFP in light of potential changes to concurrency program
- Identified that not all projects need a specific description – funding of programs that build projects can count
- Dashboard measures could support identification of appropriate projects for supply

Mini Workshop, October 12, 2020
SEPA for the TFP and development review

- Identified that transportation concurrency changing to system completeness does not fundamentally change SEPA reviews
- MMLOS metrics were first applied to the Draft EIS for the Wilburton Subarea Plan
- SEPA thresholds of significance for transportation impacts are fact-specific and depend on the context, intensity and severity of potential impacts.

Final Workshop, December 2, 2020
Review staff recommendation as documented in the draft final report prior to introducing multimodal concurrency to the public through the Transportation Commission in Q1 2021

- Vehicle performance metrics should evolve away from V/C
- Create a bridge for TFP between the current system that is in an update process and the new system for subsequent updates
- Ensure that messaging is grounded in policy and Transportation Commission recommendation

chapter
7

Bellevue Staff Recommendation for Transportation Concurrency: System Completeness

Bellevue staff has prepared a recommendation for transportation concurrency that uses transportation system completeness as a framework. Through the workshop discussions and consideration of best practices, it became increasingly clear that transportation system completeness would address major challenges stemming from the existing vehicle-based concurrency system while supporting/advancing complementary Bellevue priorities.

Key highlights are summarized as follows:

- **Sustainable**: System completeness is sustainable in both the fiscal and environmental sense, because there is a wider range of options for the City to use in response to a transportation supply issue.. In some cases, there may not be enough funding, available land, or environmental resiliency to add vehicle travel lanes or widen intersections. System completeness recognizes these limitations and provides an avenue to expand mobility in ways other than increasing vehicle capacity.
- **Equitable**: System completeness can better address equity, particularly when an equity lens is used as part of project identification and selection. System completeness considers the performance of all modes in a transparent manner to ensure that investments are steered toward a full set of multimodal projects to accommodate growth.
- **Predictable**: System completeness allows the city to advance projects that have been identified and vetted through long-range transportation planning or that address City-defined priorities. This creates a more predictable implementation program.
- **Aligns with City Goals**: Since system completeness would be rooted in the City's comprehensive planning process for land use and transportation, the project list can be explicitly developed to advance City goals like safety, environmental sustainability, livability, and equitable mobility in addition to managing traffic congestion.

7.1 Defining Transportation System Completeness

Transportation system completeness is a multimodal transportation concurrency framework that ensures that a defined system, or set of transportation projects, are developed in advance of or concurrently with growth in travel demand from new development. As part of this approach, the City would evaluate how much growth is expected to occur in the Bellevue in the future, use MMLOS to evaluate transportation performance metrics, test the effectiveness of different transportation investments, and ultimately identify a set of projects (a system) that supports the additional travel generated by new growth. Specifically for Bellevue, staff recommends system completeness to be defined as follows:

1. **Travel Demand**: Travel demand is identified in the Transportation Facilities Plan (TFP) through the 12-year forecasted land use growth that is included as part of the TFP analysis process. The units of growth in travel demand are called "person-trips," defined as any trip taken by a person who leaves a development site by any mode that uses the transportation system. This is different than the existing concurrency program that considers only vehicle trips.
2. **Transportation System**: The multimodal transportation system is also defined in the TFP. Similar to the current TFP, capacity-adding projects will be clearly identified—these capacity-adding projects constitute the "complete system" that is associated with the 12-year growth forecast in the TFP. This 12-year horizon advances with each update of the TFP. Unlike the current TFP, capacity-adding projects under this new system completeness framework will include all modes: pedestrian, bicycle, transit, and vehicle (the current system only includes vehicle capacity projects).
3. **Equating Supply and Demand**: The system of transportation projects from the TFP constitutes the supply the City determines to be appropriate to accommodate the demand generated by new growth. To equate the supply and demand, staff introduces the concept of "mobility units." A mobility unit allows Bellevue to ensure that for every unit of new travel demand generated by development, the City has at least one mobility unit of transportation supply that is built or identified for completion via the Capital Investment Program (CIP).
4. **Transparent Implementation**: To help the public and decisionmakers understand what Bellevue is doing to expand the transportation system as new growth and development occurs, the City will also develop a transportation concurrency dashboard that summarizes several key MMLOS performance indicators and other important City goals that are related to transportation (some examples could include per-capita VMT or overall transit system ridership). Additionally, a list of the projects that add to the supply of mobility units that were fully funded or recently implemented could be presented. This dashboard will help to demonstrate the City's commitment to expanding Bellevue's mobility options while fulfilling the City's land use vision.

In summary, supply and demand are identified through the TFP and mobility units equate the two; supply must meet or exceed demand for transportation concurrency to be met. The TFP also can include non-capacity transportation projects that address existing gaps/deficiencies in the transportation network, safety projects, or other transportation priorities that do not expand the transportation capacity as their primary function. As described later in this chapter the Mobility Implementation Plan (MIP) will provide more clarity about what constitutes a capacity project. See **Figure 5** and **Figure 6** for an illustrative example for how a system completeness transportation concurrency system works.

Figure 5 Basic Premise System Completeness

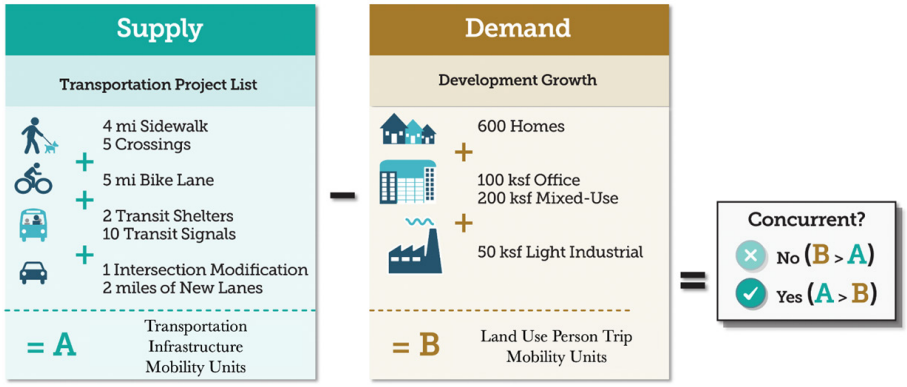


Figure 6 Example of How System Completeness Tracks Concurrency

7.2 Measuring System Completeness - Calculating Mobility Units

The TFP is the basis for calculating both the supply and demand of mobility units. The most straightforward way to calculate the supply of mobility units is through the estimated construction cost of the capacity projects in the TFP. As new TFP capacity projects are fully funded and included in the CIP, they can count toward the supply of mobility units. Using this definition, when 100 percent of the constructed value of transportation capacity projects in the TFP are programmed into the CIP, 100 percent of growth in transportation demand forecasted in the TFP can be approved. If 30 percent of the total value of the capacity projects in the TFP are programmed in the CIP, then up to 30 percent of the total growth in the TFP can be approved.

Growth in transportation demand identified in the TFP is an output of the City's travel demand forecasting model—BKRCast. BKRCast is a tool used to calculate the person-trips generated in Bellevue over a given time period (daily, PM peak hour, or PM peak period are the most common time periods) for all the growth forecasted over the 12-year time horizon of the TFP.

To help put mobility units of supply and demand in perspective, consider the following example. Assume that the City has identified $300 million for multimodal capacity projects as part of the TFP. Assume also that the City projects that new development in the City will generate 18,000 PM peak hour person-trips over the next 12 years. This means that the $300 million in transportation capacity investments will support the 18,000 new person-trips generated (a later chapter in this report will discuss how the City will know that this is the right amount of investment). Thus, by doing the math ($300,000,000 investment / 18,000 trips) it is shown that every $16,700 invested in new multimodal capacity will support one additional PM peak hour person-trip. Assuming that a PM peak hour person-trip equals one mobility unit, each mobility unit of demand will require $16,700 in supply. Or the other way to think about this would be that it requires $16,700 in investment to generate a mobility unit of supply. Using this logic, we can equate mobility units of supply and demand.

Over time, the investment per mobility unit will change as the TFP is updated, partner agencies invest in regional facilities, and growth occurs in different parts of the City that have different costs necessary to accommodate growth. For example, as the street network in BelRed is completed along with the available capacity provided by East Link, fewer high-cost street projects may be required in that part of the City. This would reduce the cost per mobility unit. On the other hand, development in another part of Bellevue might trigger the need for a new vehicle lane or multi-use trail extension could increase the total cost of the system to support growth and thus the cost per mobility unit of supply.

7.3 How System Completeness Would be Evaluated for a Development Project

This section describes a hypothetical situation to demonstrate how transportation concurrency would be assessed for a development project under the system completeness framework. Assume the following:

Mixed use development with 200,000 square feet of office space, 60,000 square feet of retail space, and 200 multifamily units.

Using person-trip generation rates that are provided by the City of Bellevue (these will be described in the next chapter) and a project internal trip capture analysis prepared by the project applicant's transportation engineer (and reviewed by the City), this project would generate 850 PM peak hour person-trips and therefore would generate 850 mobility units of demand.

As a result, this project would require 850 mobility units of supply. The City would need to confirm that this amount of supply exists or is planned to be built within the next CIP cycle. Using the example from the prior section, 850 mobility units of supply equates to about $14 million (850 X $16,700), or about 4.6 percent of the total number of mobility units of supply.

Bellevue would take as credit any frontage or development agreement improvements built by the development project that are included in the TFP capacity project list.

If Bellevue (or the project) has built or has identified the 850 mobility units of supply in the CIP, less the mobility units consumed by other developments in the city, then the project would pass the concurrency standard and would be approved (pending other environmental and city code requirements).

If Bellevue does not have 850 mobility units of supply built or in the CIP (or the supply is already identified and committed to support other development projects), then the development would not pass concurrency and would need to either scale back its mobility units of demand, wait for new TFP projects to be included in the CIP, or provide funding to advance TFP projects to full funding in the CIP.

7.4 System Completeness in Practice

Under typical circumstances, through prudent management of transportation funding and typical development cycles, Bellevue should be able to keep an adequate supply of mobility units that advance to construction concurrent with new growth. This is because the project list and growth forecast are both derived from the TFP, which is based on forecasted development and a forecast of available transportation funding. Bellevue's practice of regularly updating the TFP greatly enhances the City's ability to maintain transportation concurrency. In contrast to most other cities in Washington, that update their plans every seven-to-ten years, Bellevue's two-to-four year update cycle for the TFP allows a much more frequent reassessment of development forecasts and necessary transportation investments. **Figure 7** shows how mobility units of supply (implemented by advancing transportation projects from the TFP to the CIP) and demand (transportation supply consumed by new development proposals) would be expected to progress over time.

However, even with frequent updates, there is the potential for an unexpected surge in development, that could quickly consume the mobility units of supply identified in the TFP. If this were to happen before the City was ready to update the TFP, the City would need to identify additional transportation projects to include in the CIP. These projects could be selected from the Comprehensive Transportation Project List or the Transportation Improvement Program. The number of mobility units from any new project added to the CIP (that was not in the TFP) would be based on the constructed value per mobility unit (e.g., $16,700 from the earlier example) as calculated in the current TFP. In the next TFP update, these "added projects" would be included in the TFP capacity projects list and the update would otherwise occur as normal.

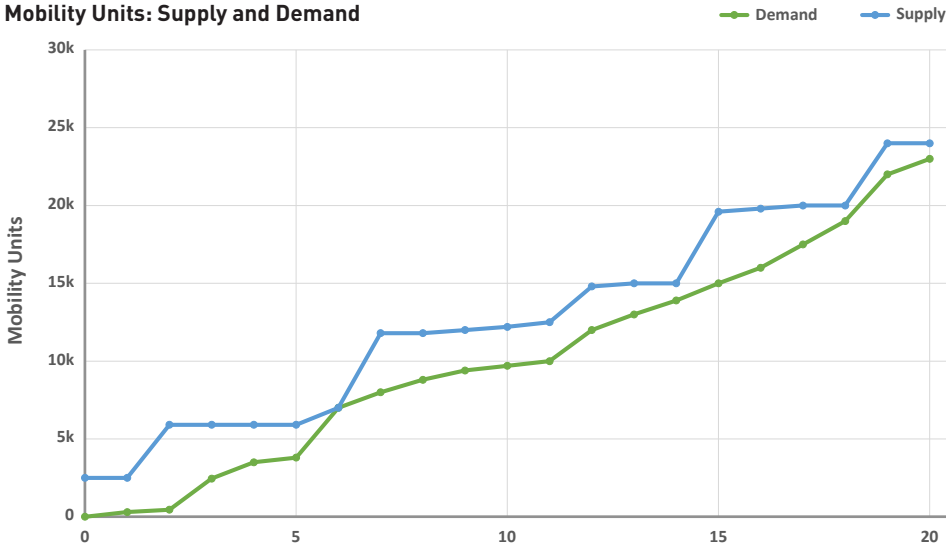


Figure 7 Tracking Supply and Demand of Mobility Units

chapter

8

Implementing System Completeness

The previous chapter provided a general overview of how system completeness is defined (through the TFP), tracked (through mobility units of demand and supply), and an example of how it would be implemented for an example project. This chapter dives deeper into the details of system completeness. This chapter is a summary of the staff/consultant workshop discussions on these topics and provides an indication of a preliminary direction relative to some of the key elements of system completeness. Each of these elements will need further definition and refinement through the development of the Mobility Implementation Plan (MIP).

8.1 Defining Demand

As described earlier, overall demand for mobility units is based on person-trip generation. During the workshops, staff identified the need to develop a standard person-trip generation table, similar to the tool the City uses to calculate vehicle-trip generation today. The source of this trip generation data could be a mix of BKRCast and Institute of Transportation Engineers (ITE) survey-based data. The standard person-trip generation data simplifies the concurrency evaluation process for both City staff and project applicants. As with the current program, a project applicant could argue for an alternative trip generation rate, but they must provide data to substantiate the alternative rate for City review and approval.

Incorporating TMP and TDM into the demand calculation was also discussed in the workshops. For the most part, TMPs and TDM programs do not reduce person-trip generation, but they do accomplish the intent of shifting trips between modes, generally away from single-occupant vehicles. Therefore, most TMP or TDM programs would not need to be considered for transportation concurrency calculations. Exceptions would be programs that reduce total person-trip generation, such as teleworking and mixes of land uses on-site that would eliminate a person-trip that would otherwise leave the development. An exhaustive list was not discussed in the workshops, but staff/consultants agreed that a definitive list will be developed through the MIP.

For the most part, staff discussed demand from the perspective of PM peak hour or PM peak period person-trip demand, which is similar to how the existing transportation concurrency program evaluates vehicle-trip demand. However, it might be more appropriate to consider daily-person-trip demand for transportation concurrency. The reason for looking at daily trips is that, unlike vehicle-trips that are capacity constrained during the afternoon peak period, pedestrian, bicycle, and access to transit trips are not capacity constrained. As an example, the need for a sidewalk between a store and an apartment building is just as important in the midday as it is in the PM peak period. Accounting for all-day person-trip generation might be a better way define the transportation system demands than focusing on PM peak period or peak hour person-trip generation. It is anticipated that this topic will be resolved as part of the MIP.

8.2 Defining Supply

The previous chapter identified that the supply of mobility units would be defined through the TFP. However, there must be a clear definition of the types of projects that would count toward supply. For example, filling a sidewalk gap in the in the Somerset neighborhood would not likely count as a system completeness concurrency project because there is almost no new development in this part of the City that could utilize the additional capacity. On the other hand, expanding the sidewalk network in the BelRed neighborhood would count toward system completeness because of the lack of pedestrian connectivity and the substantial amount of new development planned for the area.

The workshop discussions did not get into the specifics of exactly how the City should define capacity, only noting that there must be a clear nexus between any capacity project and new growth identified in the TFP. Staff also recognized that a roadway project or transit project would be more likely to serve growth in larger portions of the City than a pedestrian facility (for example, a specific transit speed and reliability improvement could provide capacity for new development several miles away). Bicycle projects would be in-between in their geographic extent of providing effective capacity for new development.

In addition to City-led capital projects that would expand supply, discussions with staff included three other facets of supply: transportation supply provided by developer through a transportation management program/transportation demand management program (TMP/TDM—e.g., private shuttles), transportation supply provided by other government agencies (e.g., WSDOT, Sound Transit, King County Metro), and transportation supply provided by developers as part of frontage improvements or other developer agreements.

Transportation Management Plan/Transportation Demand Management (TMP/TDM) Supply

The staff and consultant team identified that it was logical to count toward capacity (supply) some types TMP/TDM programs that would be above and beyond what is required by the City code and that also demonstrably reduce the impact (demand) of person-trips on Bellevue's transportation system. Based on this definition, the only types of TMP/TDM programs that were considered to apply include private shuttles and vanpool/carpool programs (that are above and beyond what the City would otherwise require). It is notable that TMP/TDM programs like transit passes or incentives provided to residents/employees to walk or bike are not included in the "supply" calculation, because shifting people to these modes does not reduce the need to provide access to bus stops, build low-stress bike facilities, or improve pedestrian crossings, for example. Again, the specifics of what TMP/TDM programs to include are expected to be addressed in the MIP, but there was clear agreement that a written definition would be required to eliminate ambiguity.

Supply by Other Agencies

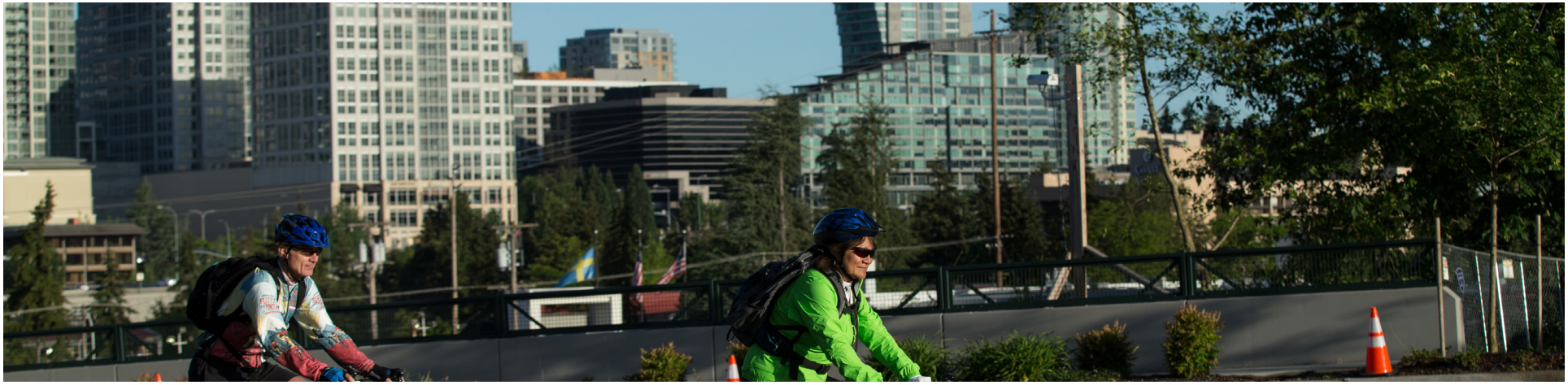
Transportation investments by other agencies offer clear benefits to mobility in the city of Bellevue and can provide system capacity for all modes. Examples include East Link light rail (Sound Transit), the Express Toll lanes on I-405 (WSDOT) and capital improvements to implement the RapidRide K Line (King County Metro). In the workshops, the staff/consultant team acknowledged the capacity these projects offer, but ultimately decided not to include them as part of system completeness. These are the reasons:

- These projects are not under the control of Bellevue – they could be delayed (as has happened with RapidRide K Line), which could result in a challenge for development approvals to meet concurrency.
- The capacity benefits of these projects can be accounted for in the modeling and analysis in the updates to the TFP and therefore influence the City's capacity project list. For example, East Link will provide the capacity to accommodate up to 16,000 person-trips per PM peak hour along its alignment through Bellevue. This capacity provided by others reduces the need to widen roads in Downtown and is factored into the roadway investment plans for BelRed. In the absence of East Link, Bellevue would need to either accommodate less development along the route or build more infrastructure (which would result in a larger and more costly TFP).
- Accounting for the supply provided by regional investments is challenging. For example, WSDOT is investing $1.2 billion in the Express Toll Lane project, which will clearly benefit many Bellevue residents and employees. However, calculating the number of mobility units provided by this project is not as straightforward as a project that is entirely within the city of Bellevue and funded by Bellevue.

Considering the above factors, the staff/consultant team determined that the benefits of regional transportation investments could adequately be accounted for in the modeling and analysis in the TFP. This determination would reduce the complexity when calculating the total number of mobility units of supply and potential for challenge.

Supply by Developers

In some cases, a development project may be required or elect to build transportation capacity that is included as part of the City's plan for mobility units of supply. An example could include a frontage improvement to build a bike lane or turn lane, or a midblock crossing that provides access between the development and a bus stop. In these cases, the increased supply of mobility units should be accounted for, which will offset a portion of the mobility units of demand generated by the project. To count as a "credit" for building mobility units of supply, the project being implemented should either be on the TFP capacity project list or meet all the criteria established by the MIP for a capacity project and be approved by the City . If an entire project is constructed, its entire mobility unit value should be included in the supply calculation. If a portion of the project is constructed, then City staff must determine the value of supply that is provided by the project. To be clear, while this is similar to an impact fee credit, this accounting for mobility units supplied is separate and independent of any impact fee credit calculation.



8.3 Running Start

Some communities that use system completeness for transportation concurrency incorporate the idea of a "running start." The running start provides some quantity of mobility units of supply on day one of implementation of the system completeness framework and when there are major updates to the program. Without a running start supply, development approvals cannot take place until a project is funded in the CIP. Currently, in the state of Washington, only the cities of Kenmore and Olympia include running start projects. Olympia considers the running start projects to be those completed in the last two-years, clearly have available multimodal capacity (e.g., they are not congested during peak periods, and they are in a state of good repair to accommodate person-trips), and support ongoing development in the growing southeastern portion of the city. When Olympia updates its concurrency program (likely in 7-9 years), the City will reassess and completely update the running start project list.

Following a workshop discussion, the staff/consultant team identified that Bellevue may not need any running start projects when the new concurrency program is launched in 2021/2022 because projects with full-funding in the CIP represent a significant proportion of the TFP project list. Therefore, on day-one, Bellevue will have a large quantity of mobility units of supply available. However, in the workshop discussion, staff noted that running start projects may be necessary as part of future TFP/concurrency program updates if the City has a less-robust CIP list and there is a need to account for previously built projects that have the capacity to accommodate additional growth. Therefore, in the long-run, it was agreed that Bellevue should consider whether there would be any running start projects at every TFP update cycle.

The MIP will provide additional guidance on how to account for running start projects, however, two considerations immediately stand out.

- Any "unused" mobility units of supply from the prior TFP cycle should be carried forward into the next cycle. This case can arise if the City implements the system envisioned in the TFP at a rate that is faster than is required to meet the demand caused by new development. In the example shown in **Figure 7**, in year 20 there are 24,000 mobility units of supply and 23,000 mobility units of demand. When the next TFP update is prepared, these 1,000 units of supply should carry forward into the program.
- Any recently-completed transportation supply project could be considered as a running start project if the project clearly has multimodal capacity (e.g., not congested with traffic during peak periods and provides a substantial amount of capacity for new active mode trips) when considering the demand of any approved but unoccupied developments that could use the project. A current example could include 120th Avenue NE between NE 12th Street and NE 4th Street. This street was recently improved and while new, unoccupied development in the Spring District is likely to utilize some of the spare capacity, this multimodal corridor can still accommodate new development. In this case, a portion of the constructed value of this project could be included as a running start project.

8.4 Accounting for Demand and Supply

System completeness requires an ongoing tracking of the demand and supply of mobility units. At the workshops, Fehr & Peers demonstrated an Excel-based tracking spreadsheet developed for the city of Olympia (see **Figure 8**). In this spreadsheet city staff enters characteristics of a proposed project (type of land use and the size of development) and the spreadsheet calculates the mobility units of demand. The spreadsheet also tabulates the number of mobility units of supply as transportation projects are added to the CIP. Using this spreadsheet, Olympia tracks mobility units of supply and demand and quickly determines whether the concurrency standard is met.

While the spreadsheet shown in **Figure 8** works for Olympia, given the complexity of development projects in Bellevue (many more mixed-use developments) and the scale of the CIP, a more flexible web, or database-driven solution may be more appropriate. The specific mobility unit accounting mechanism will be evaluated as part of the MIP.

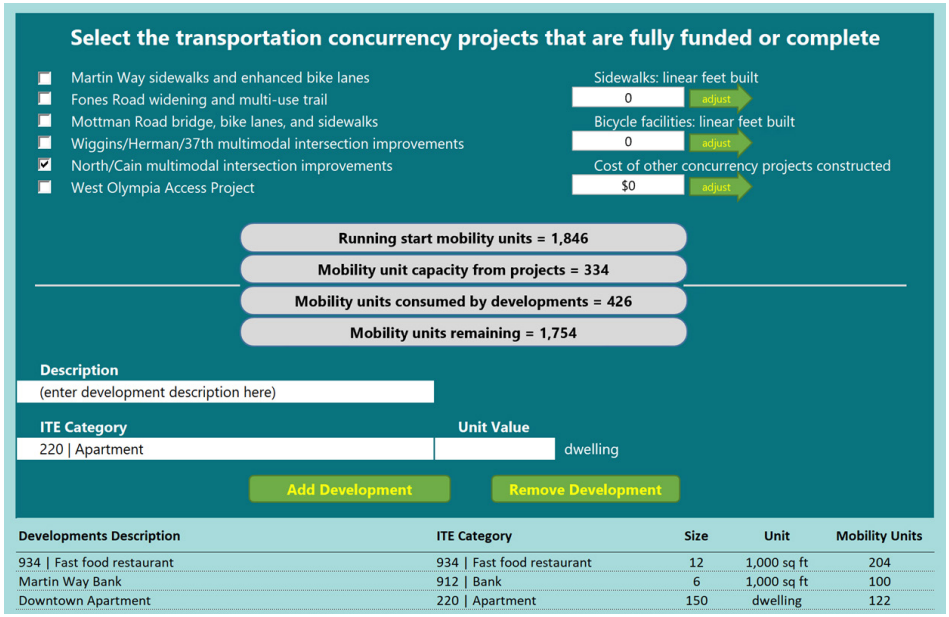


Figure 8 Olympia's Concurrency Tracking Spreadsheet

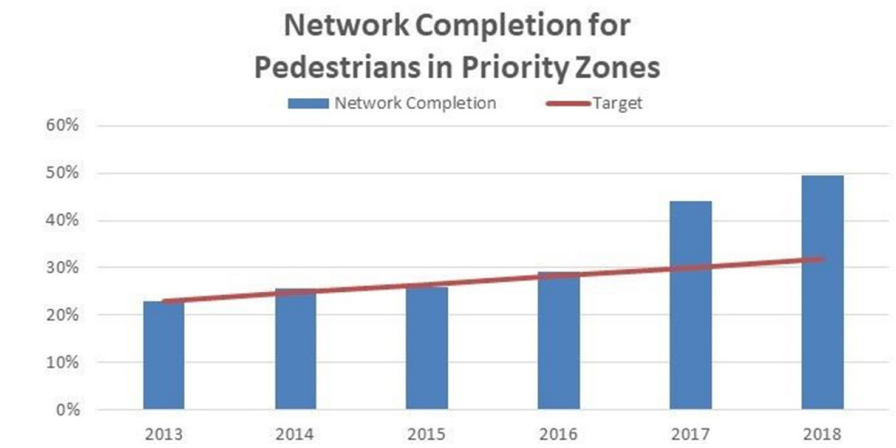
chapter
9

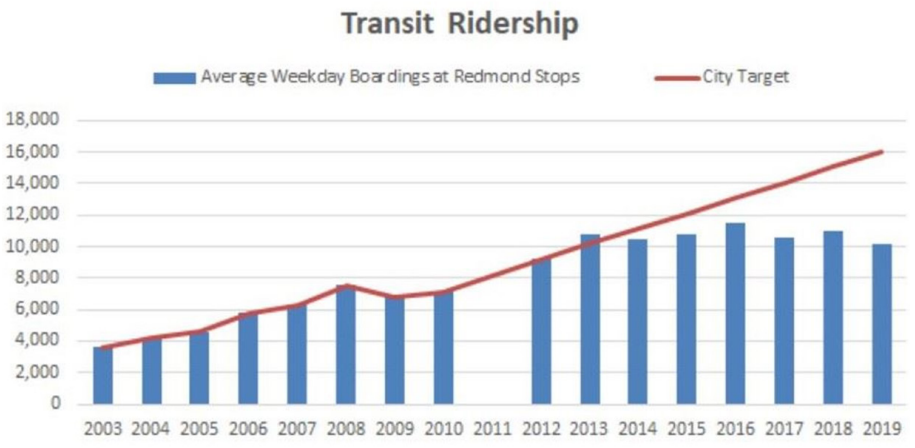
Performance Monitoring and Evaluation

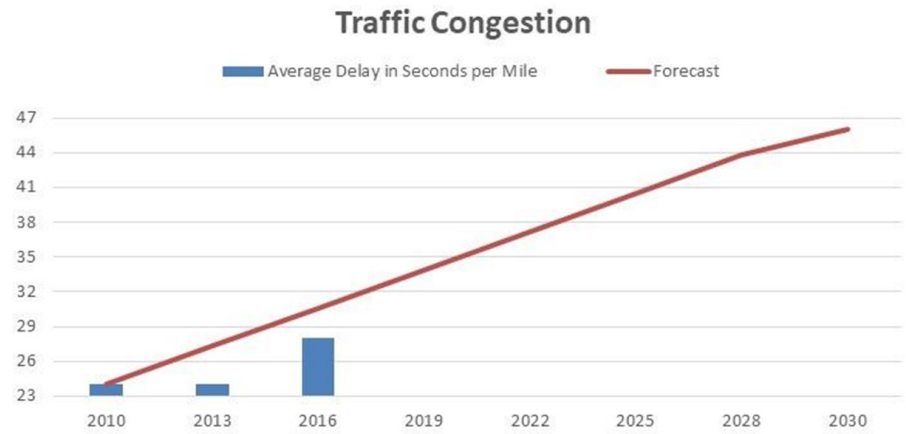
Transportation system completeness ensures that Bellevue makes progress on building the transportation system envisioned in the TFP concurrent with new development. This is the fundamental goal of the GMA. However, system completeness is not a performance metric standard like vehicle V/C. While it has many shortcomings, a V/C standard implies that a specified level of vehicle congestion will be maintained even as new development occurs —the same cannot be said for the system completeness approach.

Therefore, it is important to recognize that the system that is being completed (which is outlined in the TFP) is being planned with specific performance metrics in mind. The difference between a V/C based concurrency system and the system completeness approach is that future TFP evaluations will be explicitly multimodal. This is where the 2017 MMLOS work and considerations for Bellevue's other transportation priorities are integrated with transportation concurrency. Future updates of the TFP will be modeled and performance will be evaluated using a number of performance metrics, one of which may be V/C in a system of intersections within Mobility Management Areas – not as a standard to be attained but to monitor performance. Specific performance metrics will be determined in the MIP and will likely incorporate factors like equity, safety, and MMLOS. Rather than planning to meet an increasingly unachievable V/C standard, the TFP will select projects that advance a broad slate of transportation goals. To be sure, vehicle congestion will be a consideration, but this will no longer be the only performance metric that drives the final decision about the transportation projects that are built to accommodate new development in Bellevue.

To track progress, the staff/consultant team at the workshops suggested the idea of creating a "dashboard" of metrics that could document performance and demonstrate progress on key measures of mobility in Bellevue. These dashboard metrics would likely be a subset of factors evaluated in the MIP and TFP and will include a broad mix of metrics to monitor mobility and access in Bellevue. This transparency in performance monitoring would provide information to the public and allow the Transportation Commission and City Council to continually adjust and refine the transportation projects built in Bellevue to shape an equitable and sustainable transportation system. **Figure 9** summarizes several of the performance dashboard measures used in Redmond. The full set of measures can be viewed here: https://www.redmond.gov/850/Transportation-Performance-Measures







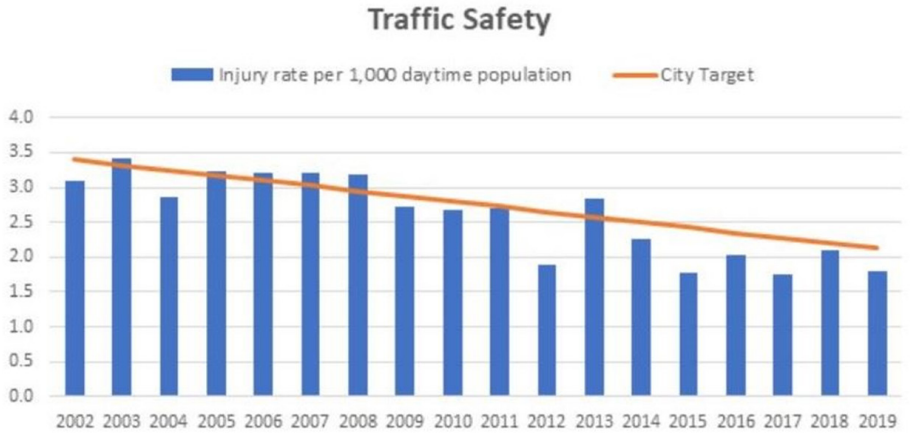


Figure 9 Examples of Redmonds Transportation Master Plan Dashboard Measures

chapter
10

Bringing it All Together

This report began with the acknowledgement that the existing transportation concurrency framework of vehicle V/C at system intersections must be replaced because land use and transportation in Bellevue have evolved to require a multimodal approach. Transitioning to system completeness would allow the Bellevue community to thoughtfully craft a transportation system that meets the demand for mobility from land use growth and balances a variety of transportation system completeness goals: safety, equity, livability, mobility, fiscal stewardship, environmental sustainability. Providing a dashboard of performance metrics for each mode can ensure the transportation system meets the community vision for transportation – expressed through the Comprehensive Plan – and allows for changing travel patterns, urban form, and other factors to inform the development of transportation system.


NE 6th St