



Mobility Implementation Plan

Volume 1

**Bellevue Transportation
Commission**

City of Bellevue, WA
March 2022

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Executive Summary

The Bellevue Mobility Implementation Plan (MIP) is a new performance measurement and prioritization system that aligns transportation investments with the city's land use vision; providing the platform for Bellevue to meet the multimodal future envisioned in the Comprehensive Plan. The MIP builds on more than a decade of work from the Transportation Commission on multimodal transportation network plans, policies, and evaluation metrics.


Why has the Transportation Commission done this work? Bellevue is a very different place than it was in the 1980s and 1990s. The future envisioned in the Comprehensive Plan is playing out before our eyes. As planned, many neighborhoods are undergoing a dramatic transformation with higher densities and a greater mix of housing, employment and shopping. This evolving land use pattern supports different travel outcomes in which people make shorter trips and use multiple modes. More people in Bellevue are choosing to walk, ride a bike, or take transit compared to 30 years ago, and the transportation system is expanding to meet this need. However, until recently, the City's primary tool to measure the performance of the transportation system and evaluate potential investments has focused almost exclusively on private vehicle travel. Given Bellevue's evolution, the Transportation Commission has developed this MIP to identify a multimodal suite of metrics and tools to build out the transportation infrastructure of the future.



Specifically, the MIP provides tools and information that Bellevue can use to do the following:

- Clearly identify where the transportation system meets mobility expectations
- Transparently select projects and investments to address gaps in performance
- More accurately consider the transportation demand generated by growth
- Better respond to equity considerations in transportation access/mobility
- More holistically approach concurrency through consideration of multiple modes
- Ultimately implement a sustainable, equitable, and multimodal transportation system

The MIP also establishes:

- **Layered Network (Chapter 2):** The Mobility Implementation Plan is based on a concept called the “layered network”. A layered network considers the land use context and each mode in the multimodal transportation system to be the “layers” that describe Bellevue’s interconnected multimodal transportation system. Mobility options for all people are intended to be compatible with the land use that the transportation system supports. The layered network acknowledges that the existing and planned land use influences expectations for transportation system performance. For example, people expect to be able to walk on sidewalks along all arterials in Bellevue, and they understand that the facilities will vary depending on where they are walking based on the adjacent land uses. The layered network acknowledges that there are competing priorities between modes and constraints to providing the planned projects for all modes on all streets.
- **Performance Metrics (Chapter 3):** These are the measurements that describe the intended design and function of the transportation system, which varies by mode—pedestrian, bicycle, transit, and vehicle. The metrics are largely derived from the Transportation Commission’s 2017 report on [MMLoS Metrics, Standards, and Guidelines](#)  (MMLoS is Multimodal Level-of-Service).
 - » **Pedestrian**
 - › Width of sidewalk plus the adjacent landscape strip along arterials
 - › Spacing between designated intersection and mid-block pedestrian crossings of arterials

» **Bicycle**

- › Level of Traffic Stress (LTS) along the bicycle network corridors. LTS describes the bicycle rider experience related to the speed and volume of traffic on the adjacent street, and the type of bicycle facility
- › LTS at intersections on the bicycle network, intended to maintain the bicycle rider comfort level through an intersection

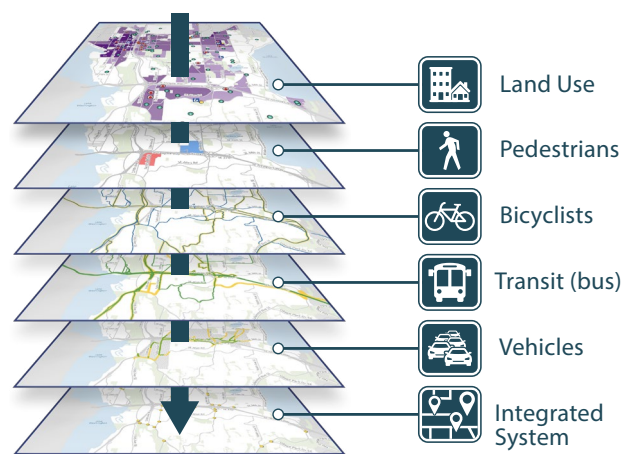
» **Transit**

- › Transit travel time ratio: travel time on a bus relative to travel time in a car on corridors between activity centers
- › Bus stop passenger amenities

» **Vehicle**

- › Volume-to-capacity ratio (v/c) at system intersections
- › Corridor travel speed along Primary Vehicle Corridors

Figure 1: Layered Network





- **Performance Management Areas (Chapter 4):** The Performance Management Areas (PMA) are contextual, based on the type and intensity of land use and the diversity of the transportation options that are readily accessible. These geographic areas are where Performance Targets for the vehicle mode are set and where progress toward improving mobility for each mode is summarized.

- » **Type 1 PMA** includes the High Density Mixed-Use areas of Downtown, BelRed and Wilburton/East Main
- » **Type 2 PMA** includes the Medium Density Mixed-Use areas of Crossroads, Eastgate and Factoria
- » **Type 3 PMA** includes the Low Density, predominantly residential areas of the city

- **Performance Targets (Chapter 5):**

Expectations for the performance and user experience of the transportation system are expressed as “targets” to be achieved over time. Targets are related to the intended facilities/infrastructure provided (for pedestrian, bicycle, transit access, and transit passenger amenities), and to the operations of the system (for transit travel time, vehicle travel speed, and vehicle intersection v/c). Targets for facilities/infrastructure focus on completing the planned system, while targets for operations relate to capacity and performance. Specific projects to meet the intended Performance Targets may encounter various constraints and, as a result, alternative approaches may be selected.

Today, Bellevue’s transportation system is an incomplete system relative to the intended Performance Targets – meaning there are “gaps” to be addressed through the MIP. A gap may be described as infrastructure that

is missing or operations of a facility (transit or arterials) that do not meet the target. The Transportation Commission has defined Performance Target gaps that include:

- » **Pedestrian**

- › Arterial segment that is missing a sidewalk, particularly where a sidewalk is missing on both sides of the street
- › Arterial segment that does not have a designated pedestrian crossing at an intersection or mid-block crossing location, according to the intended spacing or specific pedestrian trip generators

- » **Bicycle**

- › Components (roadway and trail segments and intersections) of the bicycle network in general, and the Bicycle Priority Network in particular, that do not meet the Level of Traffic Stress (LTS) Performance Target

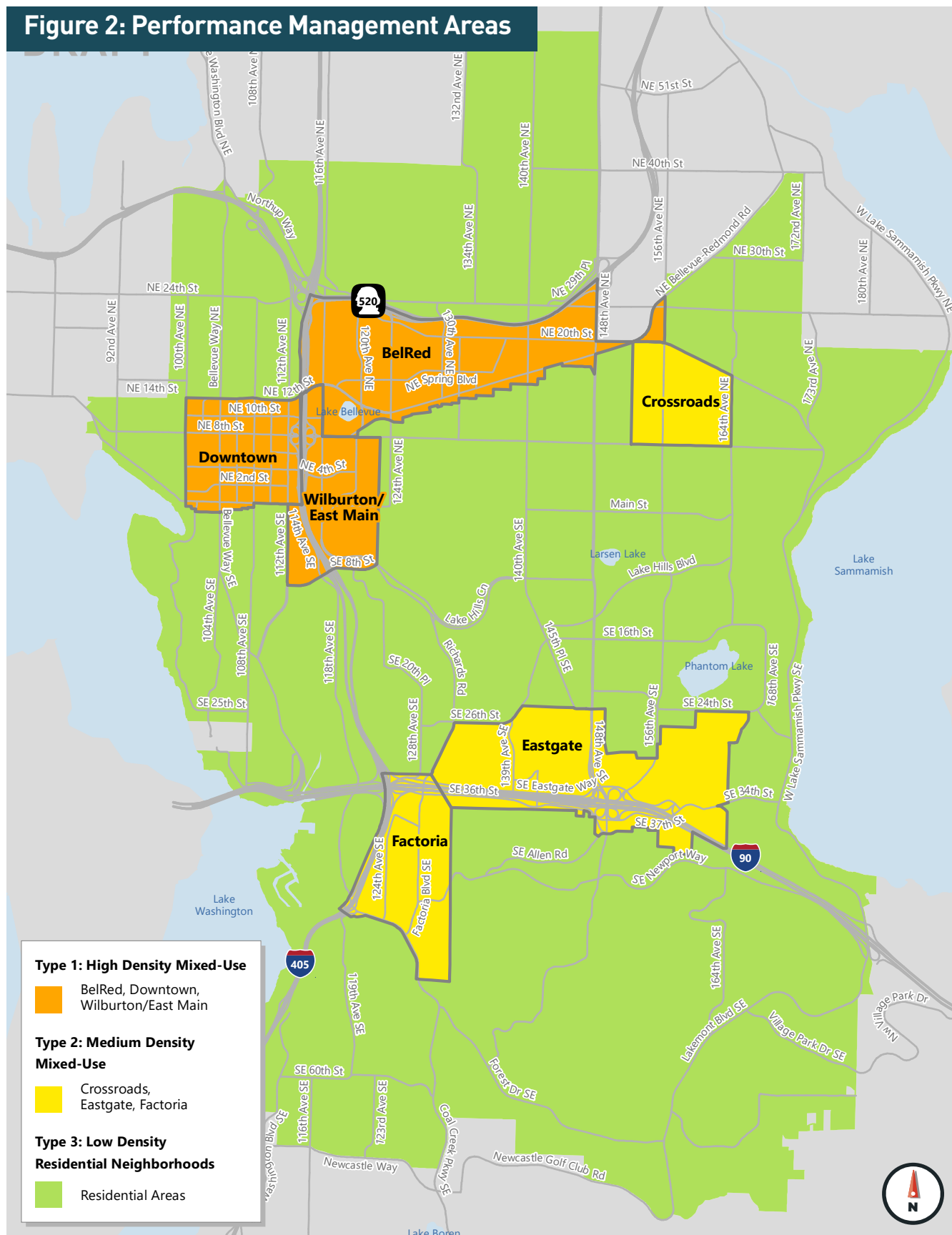
- » **Transit**

- › Frequent transit network route where riding a bus would take more than twice as long as driving a car between defined activity centers
- › Bus stops that do not meet the intended passenger amenities

- » **Vehicle**

- › System Intersection where the volume-to-capacity (v/c) ratio does not meet the Performance Target (v/c Performance Target varies by Performance Management Area)
- › Segment of a Primary Vehicle Corridor where travel speed is slower than the Performance Target (corridor travel speed target varies by speed limit and Performance Management Area)

Figure 2: Performance Management Areas



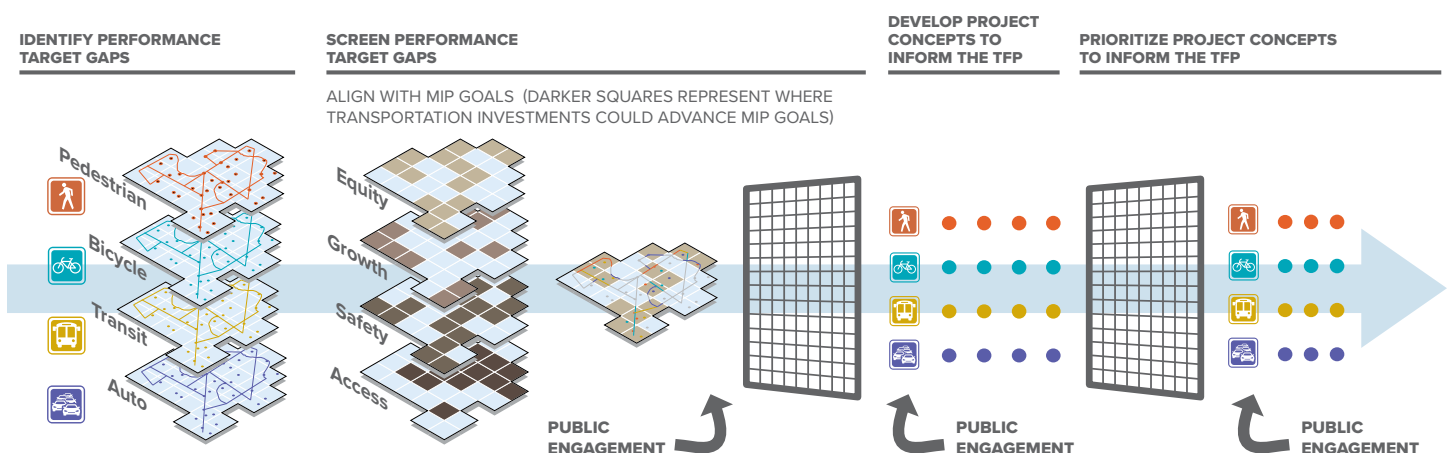


- Project Identification & Prioritization Framework (Chapter 6):** The Framework provides guidance for the Transportation Commission and the community to address a gap in the Performance Target for a given mode. While there may be many Performance Target gaps, resources are limited, therefore prioritization is necessary. The process considers the Mobility Implementation Plan goals as a basis to define a decision-making approach that will advance the City's overall mobility objectives. There are four steps, as shown in **Figure 3**. Considerations for project prioritization include financial and environmental constraints, the magnitude of growth and trips generated in an area, the needs of transportation-burdened groups, input received from the community, and other City priorities.
- Transportation Concurrency (Chapter 7):** Bellevue's transportation concurrency program is explicitly multimodal and implements a person-trip framework to quantify both the demand for mobility and the supply of transportation projects. Policies in the Comprehensive

Plan describe the broad concepts of a multimodal approach to concurrency. The multimodal approach to concurrency is intended to ensure that the "Supply" of transportation equals or exceeds the "Demand" for transportation. The "Supply" is deemed created when projects and programs are funded in the Capital Investment Program. The "Demand" is expressed as the new person-trips generated by growth. Conceptually, transportation concurrency is expressed in the **Figure 4**.

A suite of metrics that the City monitors will inform the Transportation Commission and the community how transportation investments help complete the system, how they are being utilized, and how they advance City priorities and support intended outcomes. Periodic monitoring and reporting will provide data to the community on progress to achieve the Performance Targets as well as the environmental metrics such as per capita vehicle miles traveled and commute mode-share.

Figure 3: Project Identification & Prioritization Framework

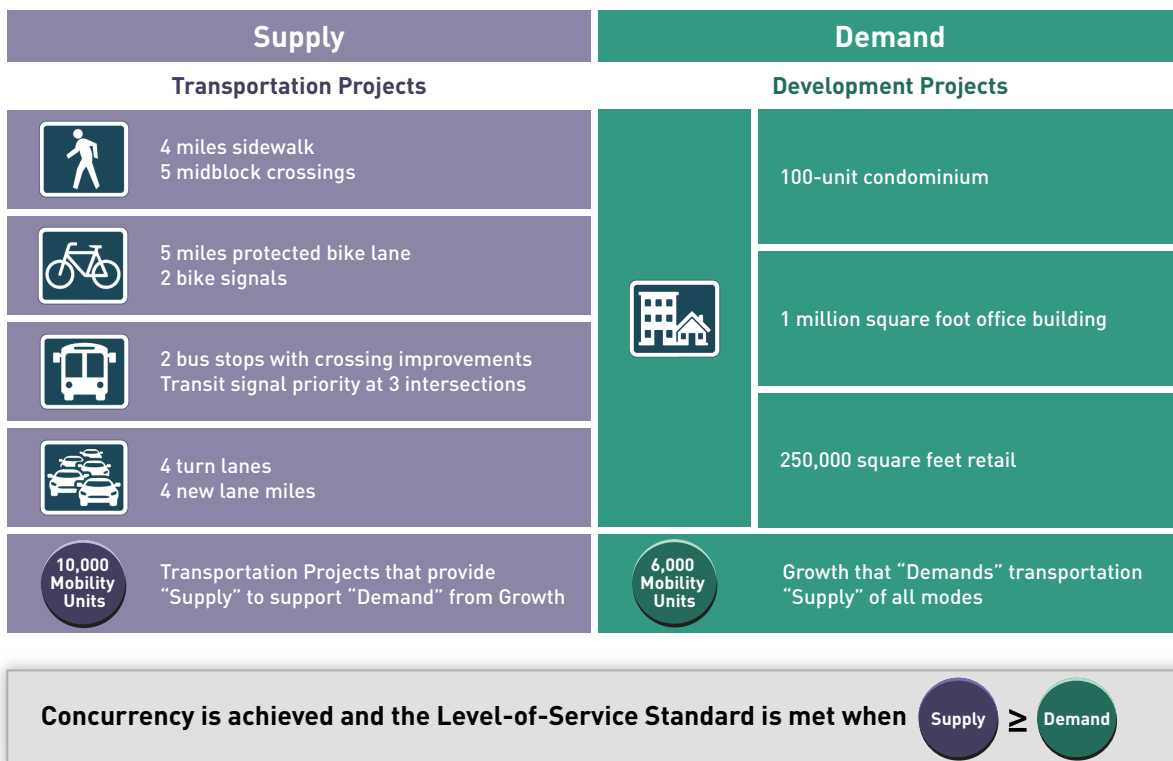


Conclusion

This Mobility Implementation Plan is grounded in the MMLoS Metrics, Standards and Guidelines report from the Transportation Commission in 2017. It establishes broad goals for mobility, Performance Metrics and Performance Targets for each mode, and Performance Management Areas that reflect planned land use and mobility options. The MIP describes a process to identify transportation projects that address Performance Target gaps and prioritization for funding. A multimodal approach to transportation concurrency allows the City to provide adequate transportation infrastructure (Supply) to meet the Demand from growth, as shown in **Figure 4**. Ultimately, the MIP provides a template for achieving a complete and connected multimodal transportation system in Bellevue.



Figure 4: Plan-Based Multimodal Concurrency System



Introduction

Throughout its history and particularly over the past decade, the City of Bellevue has systematically refined its transportation planning, design, and implementation practices to better reflect the changing land use context and the values of the community. These values are articulated in the adopted modal plans for pedestrians, bicycles, and transit, and in the Comprehensive Plan (last major update in 2015).

Emerging policy direction is to achieve a multimodal outcome for the community through the following topics:

- Creating a transportation system that is accessible to all
- Envisioning a complete and connected multimodal network from the foundation of the individual modal plans
- Establishing and utilizing multimodal level-of-service (MMLoS) metrics and targets
- Monitoring MMLoS and adjusting programs and resources to achieve mobility performance targets
- Meeting Complete Streets and Vision Zero goals
- Establishing multimodal Concurrency
- Developing a citywide Mobility Implementation Plan



Since the adoption of the major update to Comprehensive Plan (2015), the Transportation Commission has advanced transportation policies by defining MMLoS Metrics, Standards, and Guidelines (2017), identifying a framework for multimodal concurrency (2020), and preparing this Mobility Implementation Plan (2022).

Comprehensive Plan

The Comprehensive Plan provides the vision for the transportation system and the policy direction for the modal plans and for implementation. Transportation policy has evolved with the community. While policy has evolved, the consistent intent is to support planned land use and the need for people to move within the city and to connect to the region. In 2021, the City Council approved policy to fully embed a multimodal approach in support of a complete and connected transportation system for all modes. The Comprehensive Plan acknowledges this Mobility Implementation Plan as the framework to guide investments in transportation projects and programs.

Bellevue's Multimodal Evolution

Bellevue was developed with a land use pattern and a transportation network centered around vehicle travel. Low-density residential areas with dispersed commercial areas connected by multi lane roads was the predominant form of development. Transportation improvements were focused primarily on making traveling by car safe and convenient. This vehicle-centered outlook is reflected in the original transportation concurrency system from the late 1980s that was focused solely on the performance of the vehicle system at arterial intersections. However, even within this vehicle-centric concurrency framework, progressive multimodal policies,

plans, and projects supported non-motorized transportation and transit; examples include the first Non-Motorized Transportation Plan (1993) and the Downtown Bellevue Transit Center (1985, 2002).

Bellevue, along with the region, has promoted and experienced substantial change in recent decades. Planned land use has created dense activity centers with a vibrant mixed-use character. More residents and workers generate vehicle traffic and the land use pattern creates the potential for short trips and travel by non-auto modes. Public opinion, while still expressing concern with traffic congestion, also supports providing safe and comfortable access for people walking, bicycling and riding transit. Acting on this changing context, Bellevue recognizes the need for comprehensive multimodal transportation planning to provide equitable access to transportation as well as to promote better environmental and financial sustainability.

Major City efforts to articulate the transportation vision and to advance multimodal transportation planning include the Transit Master Plan (2003, 2014); Pedestrian and Bicycle Transportation Plan (1993, 1999, 2009); the Multimodal Level-of-Service (MMLoS) Metrics, Standards, and Guidelines (2017); and the Multimodal Transportation Concurrency Report (2020). All of these planning efforts—which are discussed in more detail in the **Background and Context Report included in Volume 2** of this document—are aimed at building a complete multimodal network in Bellevue. These plans provide the foundation on which the Mobility Implementation Plan is built.



Why Develop the Mobility Implementation Plan?

Bellevue has created the building blocks of a multimodal transportation vision including policies in the Comprehensive Plan, a set of modal plans, and subarea plans. The step now taken is to coalesce this work into the Mobility Implementation Plan (MIP) to clearly articulate how to implement the planned multimodal transportation system.

The MIP consolidates the City's prior work on multimodal transportation planning, design, and implementation to do the following:

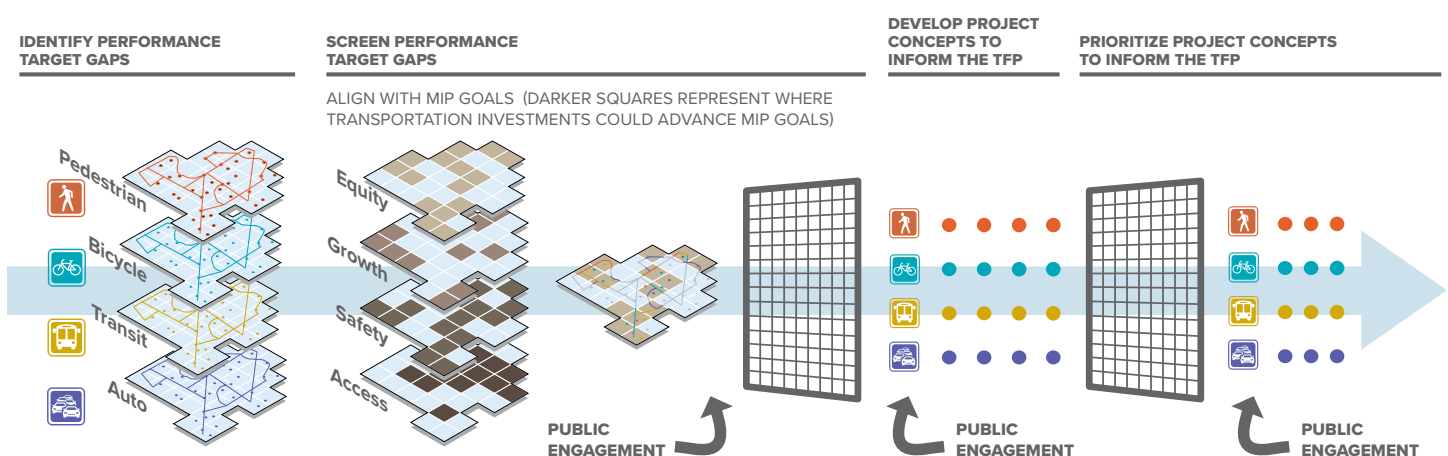
- Define Performance Metrics for each mode to measure the components and operations of the transportation system
- Describe Performance Targets for each mode that express the quality of the user experience
- Delineate Performance Management Areas to reflect the land use character and mobility options for Performance

Targets, recognizing that the expected user experience may vary

- Clearly define the existing and forecast Performance Target gaps for each mode
- Develop a system to screen Performance Target gaps for further project concept design
- Identify a process to prioritize project concepts for consideration in the Transportation Facilities Plan
- Define how multimodal concurrency will be evaluated and implemented so that the multimodal network will consistently and sustainably (fiscally and environmentally) support growth and satisfy the requirements of the Growth Management Act for Concurrency

The flowchart below summarizes these critical elements of the Project Identification and Prioritization function of the Mobility Implementation Plan:

Figure 5: Project Identification & Prioritization Framework



Mobility Implementation Plan Goals

The MIP consolidates Bellevue's multimodal planning efforts toward the outcome of a complete, connected and accessible transportation system for the benefit of all people. Along with these goals is Bellevue's commitment to develop and invest in an environmentally and fiscally sustainable manner. These goals form the foundation for the MIP and are referred to throughout this document. In establishing the groundwork for the MIP, the City Council included several fundamental goals:

- **Safety:** Bellevue will provide safe streets for everyone, whether they are driving, walking, biking, or using transit. This is accomplished through interdepartmental efforts to coordinate plans, investments, and City actions to eliminate serious injuries and fatalities that result from crashes on the transportation system. The MIP fully embraces transportation safety and is integrated as part of Bellevue's overall Safe System approach and Vision Zero goal.
- **Equity:** There is a strong recognition that transportation investments in Bellevue should be equitable for all when viewed through a socioeconomic or demographic lens. The MIP introduces a new data and analytical framework to evaluate the transportation needs from different transportation-disadvantaged people and to more transparently design projects and to prioritize investments that provide equitable access.
- **Support Growth:** A fundamental tenet of transportation planning in Washington state is that transportation investments support planned growth in population and employment. This requirement of the Growth Management Act is incorporated in the MIP and in policy. With an eye toward supporting growth, Bellevue is a vibrant regional center supported by transportation network investments that accommodate new technologies and the travel demands of an increasingly diverse population.





- **Access and Mobility:** As the city grows denser with a greater mix of land uses, simultaneous consideration of access and mobility is warranted. “Access” relates to the infrastructure that creates the “complete system” that supports the land uses - the transportation system provides access to destinations such as workplaces and schools. “Mobility” relates to the experience of people who use the complete transportation system to get where they want to go - the complete transportation system provides mobility for people in a manner that suits their needs. With respect to both access (infrastructure) and mobility (performance), the MIP provides that people in each type of neighborhood can easily walk, bike, drive, or take transit

to reach a job, restaurant, or store. The MIP describes access and mobility in a multimodal environment where people have different transportation needs and expectations across Bellevue’s diverse neighborhoods.

Revising the Mobility Implementation Plan

The MIP may be revised periodically, with each major update of the Comprehensive Plan, or as changing circumstances warrant as directed by the City Council. The intent of future revisions is to ensure that the MIP remains aligned with Bellevue’s transportation policies, any updates to modal plans, or substantive changes to Performance Metrics, Performance Management Areas, or Performance Targets.



Bellevue's Layered Transportation Network

In 2016, Bellevue adopted a Complete Streets ordinance stating that the City will implement streets that “provide appropriate facilities to meet the mobility needs of people of all ages and abilities who are walking, bicycling, riding transit, driving and transporting goods” to the maximum extent practical. The Complete Streets Transportation Design Manual describes the intent and requirements for the design and implementation of transportation facilities within the public rights-of-way. The “Layered Network” concept complements the Complete Streets ordinance and Design Manual by describing the relationships between land use and the various travel modes.

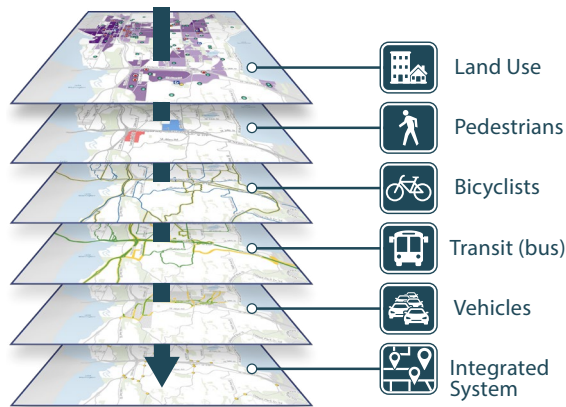
The Complete Streets ordinance requires that all mobility options be considered in the scoping, planning, design, implementation, operation and maintenance of a transportation facility. Bellevue recognizes that there are constraints to the level of accommodation that can be provided for each mode on any one corridor and that a single roadway corridor may not offer the optimal experience for every mode given the inherent constraints and conflicts. However, a pleasant travel experience for every mode can be achieved at the network level. The Layered Network approach builds upon the Complete Streets framework by acknowledging those constraints, conflicts and opportunities, and identifying modal priorities throughout the network. Although not every street can simultaneously provide the highest level of accommodation to all modes, the Layered Network contains a comprehensive and connected network for each mode—pedestrian, bicycle, transit, and vehicle.

To advance the Layered Network, the MIP combines modal plans, subarea plans and prior planning efforts to create an integrated, complete transportation system that is supportive of and compatible with Bellevue’s land use vision. The Layered Network reveals potential modal conflicts and incompatibilities in terms of planned land uses, available right-of-way, other known modal needs or projects, and environmental factors to evaluate the feasibility of constructing planned improvements. The layers of Bellevue’s multimodal network are shown in **Figure 6** and described in the sections that follow.

In its work to prepare the MMLOS (2017) report on transportation metrics, standards and guidelines, the Transportation Commission recognized that land use may be used to help define the facility type and reconcile competing priorities in the Layered Network approach. The land use vision in the Comprehensive Plan describes the intended mix, intensity, and design of development that is the context



Figure 6: Layered Network



for transportation projects. For example, land use in the High Density/Mixed Use Type 1 Performance Management Area of Downtown, Wilburton/East Main and BelRed creates an environment in which pedestrian mobility is a high priority that informs infrastructure investment decisions. Pedestrian destinations such as schools may also inform the design and priority of specific facilities. Conflicting modal priorities may be resolved in favor of the pedestrian network in these types of locations.

Pedestrian Network

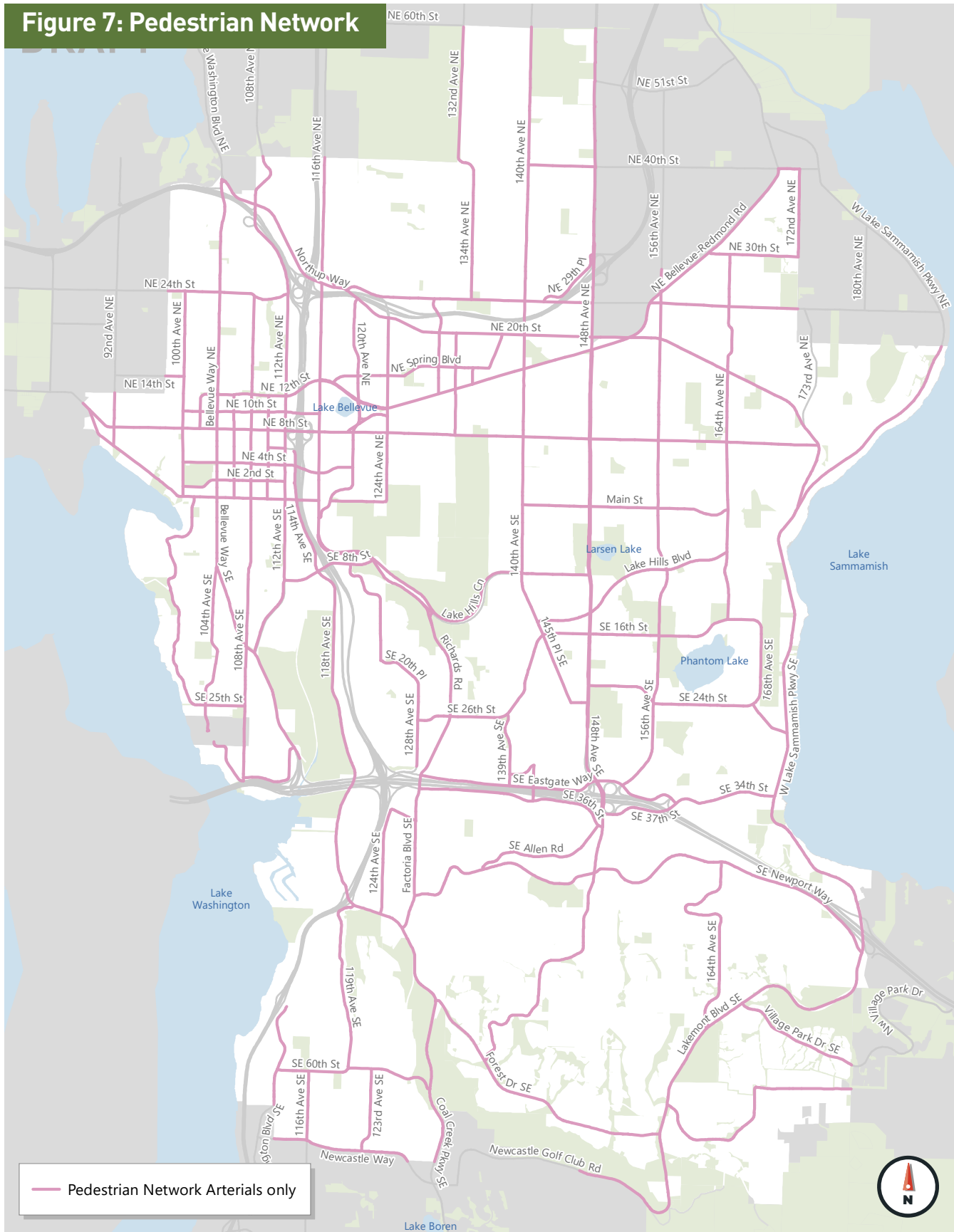
Bellevue's design and development standards ensure that a comfortable and safe pedestrian environment is built as properties redevelop or as the City makes major street improvements. The dimensional requirements for sidewalks and the landscape buffer strips are outlined in Chapter 3 and in the Complete Streets Design Manual. While new private and public projects are required to build sidewalks that meet those dimensional requirements, a focus of the MIP is to address sidewalk gaps along the arterial network so that it is comfortable and safe for people to walk along and to cross the busiest streets in the city. **Figure 7** shows the MIP Pedestrian Network along arterials.*

Bicycle Network

As described in Chapter 3, the MIP builds on the Pedestrian and Bicycle Transportation Plan to define the intended Level of Traffic Stress on the bicycle network. The Level of Traffic Stress (LTS) experienced by a bicyclist is a function of the average daily traffic volume and the speed limit, together with the type of bicycle facility. The bicycle network is comprised of connected corridors and intersections with facilities that range from multipurpose paths separated from arterials, to protected bike lanes along arterials, to shared streets along low-speed, low-volume local roads. The bicycle network for the MIP was originally drawn from the City's 2009 Pedestrian and Bicycle Plan, with a 2021 update to address known constraints/conflicts. The Bicycle Priority Network defines eleven north-south and east-west routes that connect neighborhoods and provide links to the regional system. The network includes intersection treatments that maintain the LTS across arterials. The planned bicycle network including the Priority Bicycle Corridors is shown in **Figure 8**.

** Neighborhood sidewalks along non-arterial streets are not part of the MIP Pedestrian Network.*

Figure 7: Pedestrian Network





Transit Network

Many Bellevue arterials carry buses operated by transit service providers, primarily King County Metro and Sound Transit. This network is shown in **Figure 9**. Although transit service is not provided by the City, Bellevue supports efficient transit operations so that riding transit is an attractive mode for residents and workers.

The Frequent Transit Network (FTN) defined in the Bellevue Transit Master Plan includes the frequent transit network routes that connect activity centers in Bellevue with frequent all-day service. Frequent service is defined as a bus that arrives every 15 minutes or less from 6am to 6pm on weekdays. The FTN evolves as new transit connections are made or services improved. The Frequent Transit Network includes the following routes, also shown in **Figure 9**:

- **Route 245** (Factoria-Eastgate-Crossroads-Overlake)
- **Route 271** (Eastgate-Wilburton-Downtown-U District)
- **Route 250** (Downtown-Kirkland-Redmond)
- **B Line** (Downtown-Wilburton-Crossroads-Overlake)
- **Stride BRT** (Lynnwood-Downtown-Burien; service scheduled to begin in 2026 or 2027)
- **Link 2 Line** (Seattle-Downtown-BelRed-Overlake; service scheduled to begin in 2023)

Expansion of the FTN may include additional RapidRide service between Kirkland, Bellevue, Newcastle, and Renton and Link Light Rail between Bellevue, Kirkland, and Issaquah.





Vehicle Network

Bellevue has a complete and connected roadway network that accommodates vehicle travel everywhere in the city and to the region. The MIP defines Primary Vehicle Corridors and System Intersections as described below.

- A Primary Vehicle Corridor is a subset of the arterial corridors with the following characteristics:
 - » Classified in the Comprehensive Plan as an arterial (collector, minor, or major);
 - » Carries roughly 10,000 or more vehicles per day; and
 - » At least 0.5 miles in length (shorter segments are typically in areas with greater traffic signal density and more closely-spaced System Intersections).
- A System Intersection meets both of the following criteria:
 - » Signalized or roundabout intersection with two arterials or freeway ramps; and
 - » At least one of the arterials at the System Intersection is a Primary Vehicle Corridor.

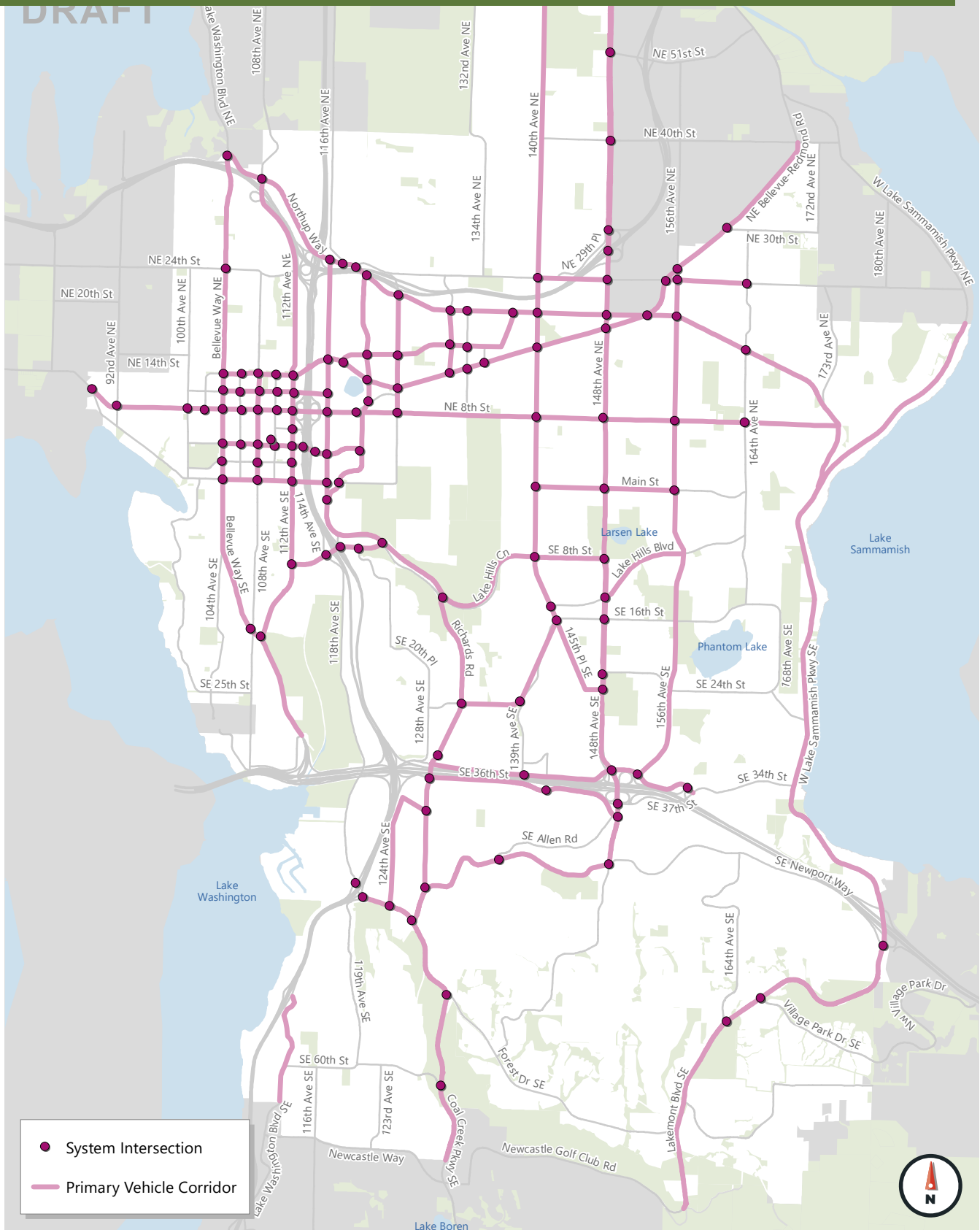
The Primary Vehicle Corridor designation does not imply that vehicle mobility is the top priority for the corridor. Considerations like the land use context (see the discussion on Performance Management Areas in Chapter 3), overlap with other modal networks, and community input must be weighed when considering modal priorities on a corridor. However, traffic congestion management will be an important consideration along the Primary Vehicle Corridors and at System Intersections. These arterials and intersections are a priority because they connect neighborhoods to other destinations in Bellevue and to the regional highway network.

Based on these criteria, the existing set of System Intersections along with the Primary Vehicle Corridors are shown in **Figure 10**.





Figure 10: Vehicle Network – Primary Vehicle Corridors and System Intersections



Performance Metrics

Performance Metrics for each mode are based on the MMLoS Metrics, Standards, and Guidelines Final Report with some refinements to streamline performance monitoring and to reflect the latest Transportation Commission guidance on mobility priorities. This section describes the metrics for each mode in the Layered Network.

Pedestrian Network

The MMLoS Metrics, Standards, and Guidelines Final Report describes specific dimensions for the arterial sidewalk network, which vary depending on the land use context and location of the sidewalk. The City strives to build (or have developers build) sidewalks to the relevant dimensions so that there is a safe and comfortable location to walk. As shown in **Table 1**, the Landscape buffer strip width is currently set as 5 feet throughout the city,

while paved sidewalk dimensions vary from 7 feet to 15 feet depending on the location and nearby land use.

Designated arterial crossings at intersections and mid-block locations are critical components of the pedestrian network. Recommended spacing between designated arterial crossings varies from 300 feet to 800 feet depending on the location and nearby land use. **Table 2** shows the desired spacing between arterial pedestrian crossings.

Table 1: Sidewalk and Landscape Buffer Width

Context	Downtown / BelRed	Activity Center	Neighborhood Shopping Center	Pedestrian Destination*	Elsewhere in the City
Component					
Sidewalk Width and Landscape Buffer Width	Downtown Land Use Code BelRed Land Use Code	16 ft. total	13 ft. total on frontage adjacent to shopping center	13 ft. total on frontage of pedestrian destination and within 100 ft. of a FTN stop	Bellevue Land Use Code Transportation Design Manual

* A Pedestrian Destination is a facility or location such as a school, park, community center, senior center, library, frequent transit network stop, or a trail crossing



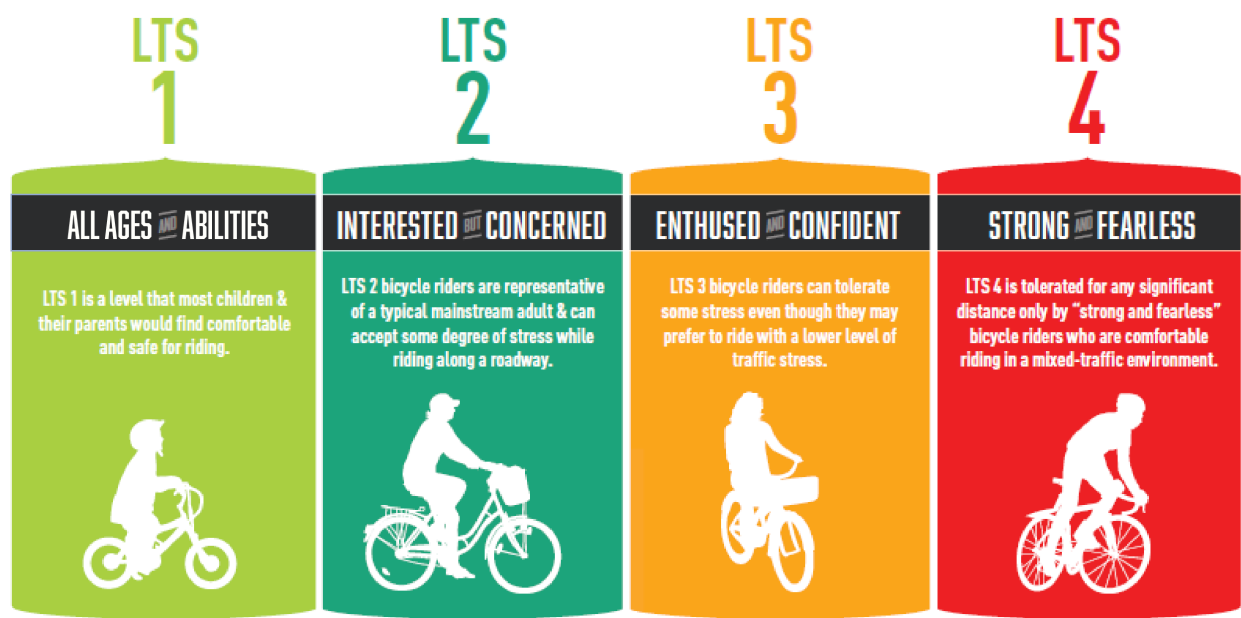
Table 2: Spacing Between Arterial Crossings

Context	Downtown / BelRed	Activity Center	Neighborhood Shopping Center	Pedestrian Destination	Elsewhere in the City
Component					
Spacing Between Arterial Crossings	Downtown Transportation Plan (300 ft.)	≤ 800 ft.: Factoria ≤ 600 ft.: Elsewhere	One crossing every 600 ft. or less within shopping center area	Within 600 feet of primary entrance Within 300 ft. of bus stop pair on FTN	Applicable as needed

Bicycle Network

Bellevue establishes Performance Metrics on the bicycle network and Priority Bicycle Corridors as shown in **Figure 8**. The Performance Metric used to describe the user experience on the bicycle network is consistent with the level of traffic stress (LTS) guidelines outlined in the MMLoS Metrics, Standards, and Guidelines Final Report. The concept of LTS is illustrated in **Figure 11**.

Figure 11: Bellevue Bicycle Level of Traffic Stress (LTS) Categories



For bicycle network corridors, LTS is a function of the posted speed limit, the average daily volume of traffic on the street, and the type of bicycle facility provided. **Table 3** shows this relationship. **Table 4** shows how this concept applies to intersections.

Table 3: Bicycle Level of Service/Level of Traffic Stress

Roadway Characteristics		Bicycle Facility Components: Guideline to Achieve Intended Level of Service/Level of Traffic Stress					
Speed Limit	Arterial Traffic Volume	No Marking	Sharrow Lane Marking	Striped Bike Lane	Buffered Bike Lane (Horizontal)	Protected Bike Lane (Vertical)	Physically Separated Bikeway
</=25	<3k	1	1	1	1	1	1
	3-7k	3	3	2	1	1	1
	>/=7k	3	3	2	2	1	1
30	>10k	3	3	2	2	1	1
	10-25k	4	4	3	3	2	1
	>/=25k	4	4	3	3	3	1
35	<25k	4	4	3	3	3	1
	>/=25k	4	4	4	3	3	1
>35	Any	4	4	4	4	3	1

Table 4: Bicycle Facility Components at an Intersection

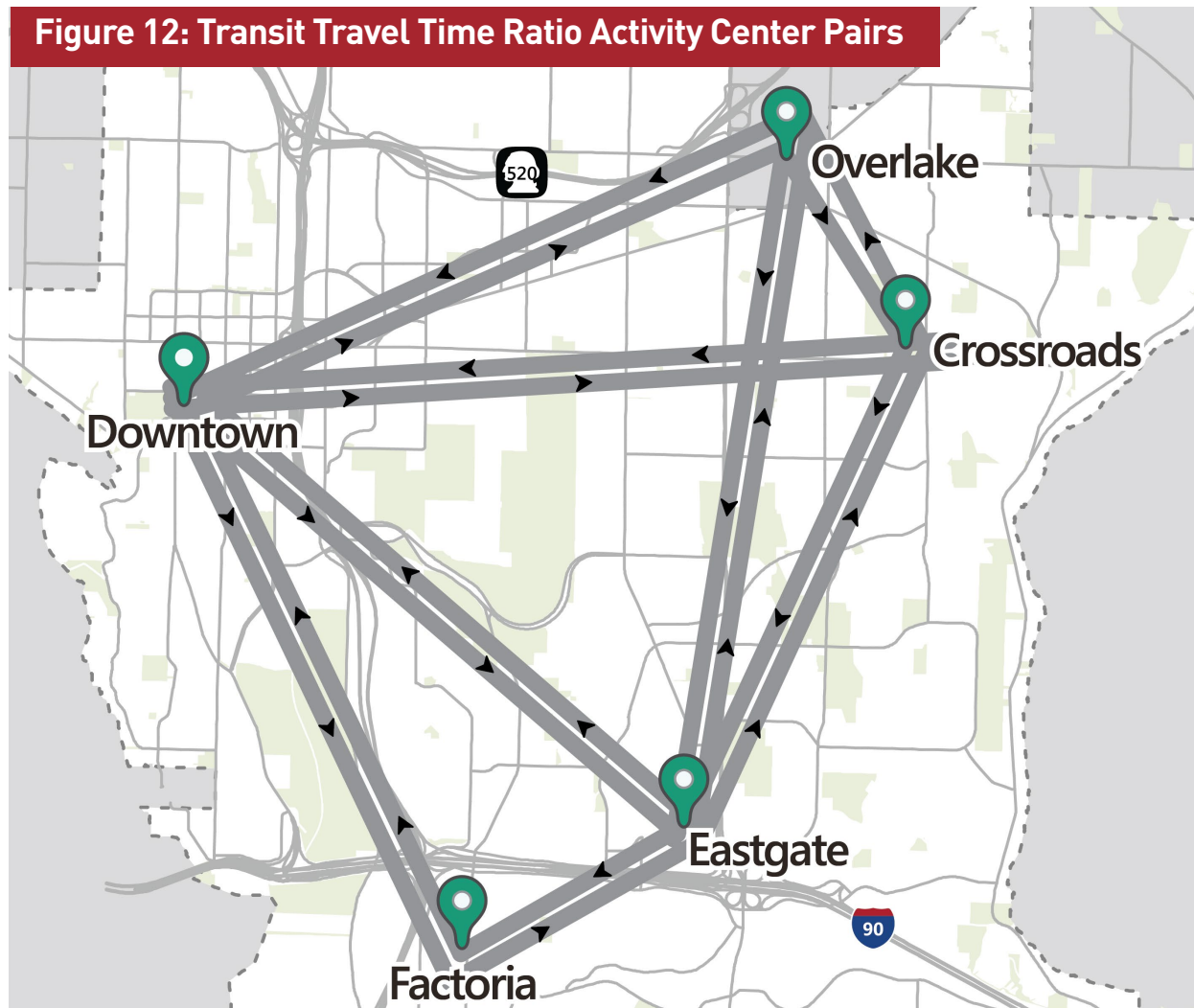
Bicycle LOS/LTS	Bike Signal	Street Crossing	Approach to Intersection	Approach to Intersection with Right Turn Lane
1	Bike Signal	Green solid or skip-stripe	Green bike box	Curb ramp to wide sidewalk, Dutch Intersection
2	Bike Signal	Skip stripe	Bike box	Green bike lane to left of turn lane
3	Green Cycle Length	Sharrow lane markings	Automatic signal actuation	Bike lane to left
4	No specific design guideline for LTS/LOS 4			
Trail or Mid-Block Crossing	Full signal or HAWK or RRFB	Green solid or skip-stripe	N/A	N/A

Transit Network

The ratio of travel time on transit versus in a private vehicle in the peak commute hour (known as a Transit Travel Time Ratio) is the Performance Metric used to measure the operations of the frequent transit network (FTN). Specifically, the Transit Travel Time Ratio is measured between the City's five activity centers, where the majority of Bellevue's transit trips originate or end. The Transit Travel Time Ratio speaks to the competitiveness of transit relative to the

vehicle mode. Moreover, this Performance Metric can be influenced by City actions that improve the speed and reliability of transit on its streets. The activity center pairs used to assess the FTN are shown in **Figure 12**.

In addition to influencing the speed and reliability of transit on the roadway network, Bellevue can improve passenger amenities at the transit stops **Table 5** summarizes the transit stop passenger amenity metrics.

**Figure 12: Transit Travel Time Ratio Activity Center Pairs****Table 5: Transit Stop/Station Amenities**

Context	Local Transit Stop	Primary Transit Stop	Frequent Transit Network Stop/ RapidRide Stop
Component			
Weather Protection	Yes, Priority locations have 25+ daily boardings	Yes	Yes
Seating	Yes, Priority near Pedestrian Destinations	Yes	Yes
Paved Bus Door Passenger Zone	Yes, Zone length 25-30 ft.	Yes, Zone length 40 ft.	Yes, Zone length 60 ft.
Wayfinding	Optional	Yes	Yes
Bicycle Parking	Optional	Yes	Yes

Vehicle Network

The MIP defines two Performance Metrics for the vehicle network:

- Vehicle travel speed along segments of a Primary Vehicle Corridor in the PM Peak hour (the single busiest hour of the day).
- Volume-to-capacity ratio (V/C) at System Intersections in the two-hour PM Peak period (4-6 PM).

Vehicle Travel Speed

Vehicle travel speed is adapted for the MIP from the “Typical Urban Travel Speed” metric described in the MMLoS Metrics, Standards, and Guidelines Final Report. The “Typical Urban Travel Speed” is defined as 40% of the posted speed limit; the performance of the arterial is measured against the “typical” speed. This methodology takes intersection delay into account since vehicles rarely travel at a free-flow speed along a corridor within an urban area and better accounts for travel through several intersections. The 40% factor is identified as appropriate for urban corridors by the Highway Capacity Manual (Transportation Research Board, 2016). It should be noted that this measure should be applied to a single peak hour.

Intersection Volume-to-Capacity Ratio

Bellevue has a long-established system of using a two-hour PM Peak period V/C metric to quantify vehicle mobility through System Intersections. This Performance Metric compares the potential maximum number of vehicles that can be accommodated at an intersection relative to the actual number of vehicles that move through the intersection. As that ratio of maximum-to-actual approaches 1.0, meaning the number of vehicles is approaching the capacity of the intersection—operations degrade and drivers may experience delay.

The V/C metric at System Intersections describes intersection performance and is complemented by the vehicle travel speed metric. For example, a driver traveling along NE 8th Street will get more green signal time than a driver approaching from a perpendicular arterial – in this example, intersection V/C might be high because it is the average of all approaches, but vehicle travel speed on NE 8th Street is steady because of the coordinated and adaptive traffic signals. These two vehicle Performance Metrics provide a complete picture of traffic flow and are intended to be used together to identify and prioritize potential traffic congestion reduction projects.

Performance Management Areas

Performance Management Areas are the successors to the City's Mobility Management Areas and are tailored for the Mobility Implementation Plan. The Performance Management Areas are established to acknowledge that the context of the transportation system and surrounding land uses vary, and that travelers using all modes expect a level of performance consistent with the context.

To recognize this variability in the user expectations and experience, three types of Performance Management Areas (PMAs) have been defined based on land use and mobility context, described below:

- **Type 1 - High Density Mixed-Use:**

Downtown, BelRed, and Wilburton/East Main are mixed-use activity centers with high density and growing land uses, light rail service, and many mobility options that provide access within the PMA and to other areas; these are shown in orange shading on **Figure 1**.

- **Type 2 - Medium Density Mixed-Use:**

Crossroads, Eastgate, and Factoria are mixed commercial/residential activity centers with moderate density land use and frequent bus transit service; these are shown in yellow shading on **Figure 13**.

- **Type 3 - Residential:** The remainder of the city is characterized by primarily lower-density residential areas with supporting retail/service land uses and fewer mobility and accessibility options; these areas are shown in green shading on **Figure 13**.

Within both Type 1 and Type 2 PMAs are three separate geographic areas. Within these areas, the pedestrian and bicycle network Performance Targets can be monitored and summarized at a more granular level of detail. These locations are the activity centers where most of the City's land use growth is planned and they are consistent with the former Mobility Management Areas. The Transportation Commission has expressed to provide pedestrian and bicycle investments where potential utilization would be the greatest.

The PMAs are used to establish and monitor Performance Targets as summarized in **Table 6** and described in detail in the following chapter. Each PMA has Performance Targets tailored to acknowledge the existing and planned land uses and mobility and accessibility options.

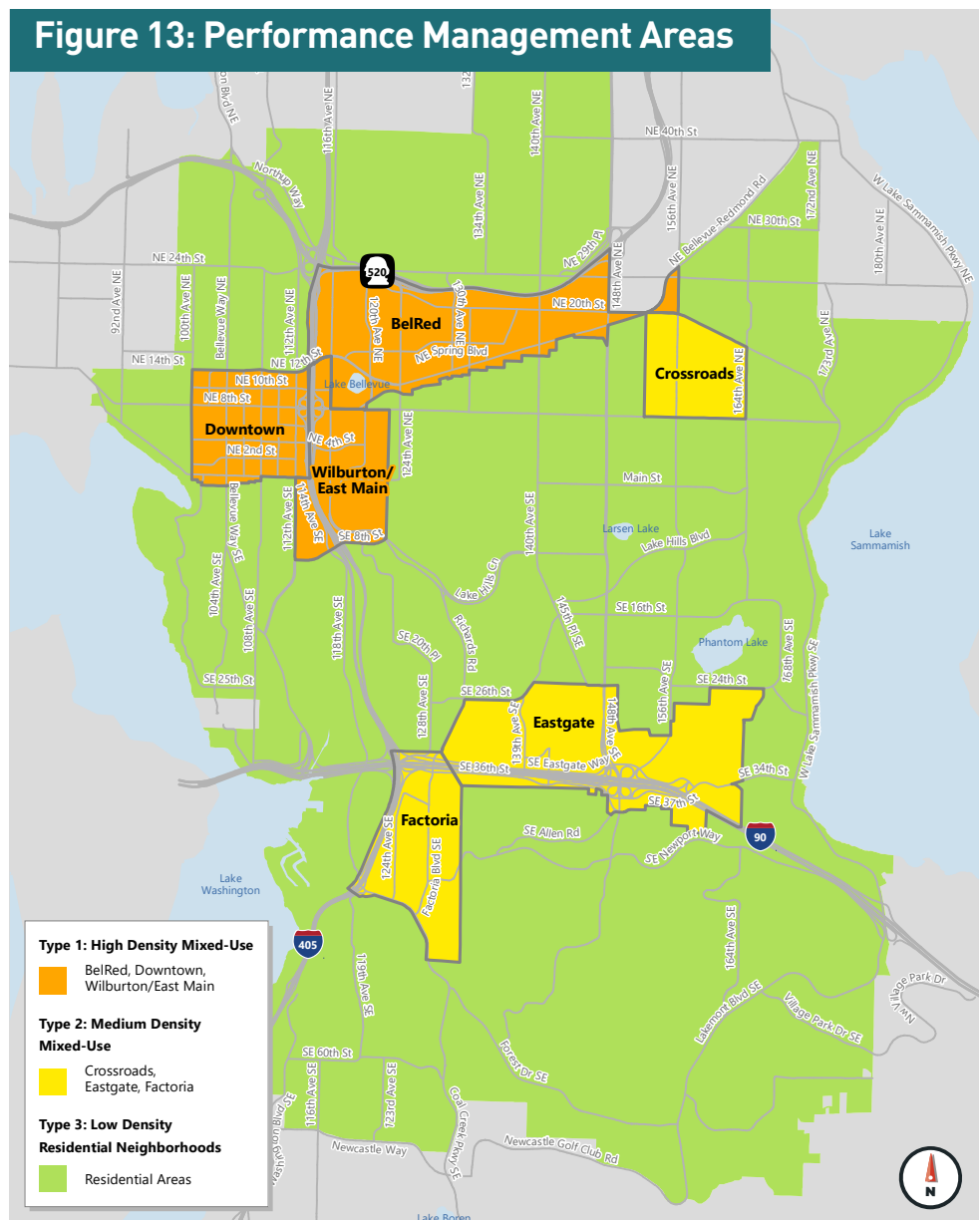


Table 6: PMA Relationship with Performance Target

Mode	PMA Relationship with Performance Target
Pedestrian	Pedestrian network completeness summarized by PMA type
Bicycle	Bicycle network completeness summarized by PMA type
Transit	Activity center pairs within Type 1 and Type 2 PMAs are used to document transit travel time vs. auto travel time Performance Target
Vehicle	Performance Targets for System Intersections and Primary Vehicle Corridors are based on PMA type

Performance Targets

The Performance Metrics for each mode that are described in Chapter 4 define how performance is measured for walking, biking, taking transit, or driving. The Performance Targets describe the intended facility operations or design of each mode of travel—in other words, the intended user experience.

The Transportation Commission has identified addressing fundamental gaps in the system for pedestrians, bicyclists, and amenities for transit riders as a high priority. Therefore, the MIP Performance Targets for pedestrians, bicyclists, and transit riders focus on access and connections, while the Performance Targets for vehicles focus on operations. As

the Performance Target gaps are addressed, projects would reflect the Performance Metrics. For the vehicle mode, the specific Performance Targets align with the PMAs.

Table 7 summarizes the Performance Targets for all modes.



Table 7: Performance Targets

Mode	Performance Target		Monitoring and Reporting
Pedestrian	<ul style="list-style-type: none"> Sidewalk on both sides of the arterial; sidewalk dimensions vary Arterial crossings at designated spacing near major trip-generating land uses; the spacing of arterial crossings varies by land use context 		Percentage of sidewalk network complete citywide and for locations within each PMA
Bicycle	Bicycle network facilities (corridors and intersections) meet the intended LTS		Percentage of bicycle network complete citywide and for locations by PMA
Transit	<ul style="list-style-type: none"> Transit travel time ratio of 2.0 or less Stops on the Frequent Transit Network have passenger amenities 		List and map of activity center pairs that meet the travel time ratio Performance Target; Percent of bus stops on the FTN that include all five passenger amenities
Vehicle	Type 1 PMA High Density Mixed-Use	<ul style="list-style-type: none"> 1.0 V/C ratio at System Intersections ≥0.5 Typical Urban Travel Speed for Primary Vehicle Corridors 	List and map of Primary Vehicle Corridors and System Intersections that meet the PMA Performance Target
	Type 2 PMA Medium Density Mixed-Use	<ul style="list-style-type: none"> 0.90 V/C ratio at System Intersections ≥0.75 Typical Urban Travel Speed for Primary Vehicle Corridors 	
	Type 3 PMA Residential	<ul style="list-style-type: none"> 0.85 V/C ratio at System Intersections ≥0.9 Typical Urban Travel Speed for Primary Vehicle Corridors 	



Section 5.1. Performance Evaluation: Existing Conditions

This section summarizes the existing conditions of each mode in the Layered Network relative to the Performance Targets and Performance Management Areas (2021 for pedestrian, bicycle, and

transit stop; 2019 for transit travel speed ratio and intersection V/C and Primary Vehicle Corridor travel speeds).

Pedestrian Network Performance

Over time, Bellevue intends to ensure that complete and connected sidewalks exist on both sides of every arterial corridor,

achieving a pedestrian network completeness Performance Target of 100%. Network completeness is summarized by PMA and citywide in **Table 8**. Pedestrian network performance is described in three categories:

- Sidewalk complete on both sides of the arterial;
- Sidewalk complete on one side of the arterial; or
- Sidewalk missing from both sides of the arterial, referred to as a “Performance Target gap”

Table 8: Existing (2021) Pedestrian Network Performance Target Results

Citywide		Sidewalk on Both Sides	Sidewalks on One Side	Sidewalk Gaps
Miles		77	44	17
Proportion of Total		56%	32%	12%

Locations within the PMA		Sidewalk on Both Sides	Sidewalks on One Side	Sidewalk Gaps
Type 1 High Density Mixed-Use	Downtown	95%	5%	0%
	BelRed	86%	8%	6%
	Wilburton/ East Main	75%	25%	0%
Type 2 Medium Density Mixed-Use	Crossroads	100%	0%	0%
	Eastgate	29%	63%	8%
	Factoria	70%	28%	2%
Type 3 Residential		47%	37%	16%

Figure 14 shows sidewalk network completeness today.

Figure 15 displays how well arterials within the mixed-use PMAs meet the City’s arterial crossing guidelines.

Figure 14: Pedestrian Network Performance – 2021

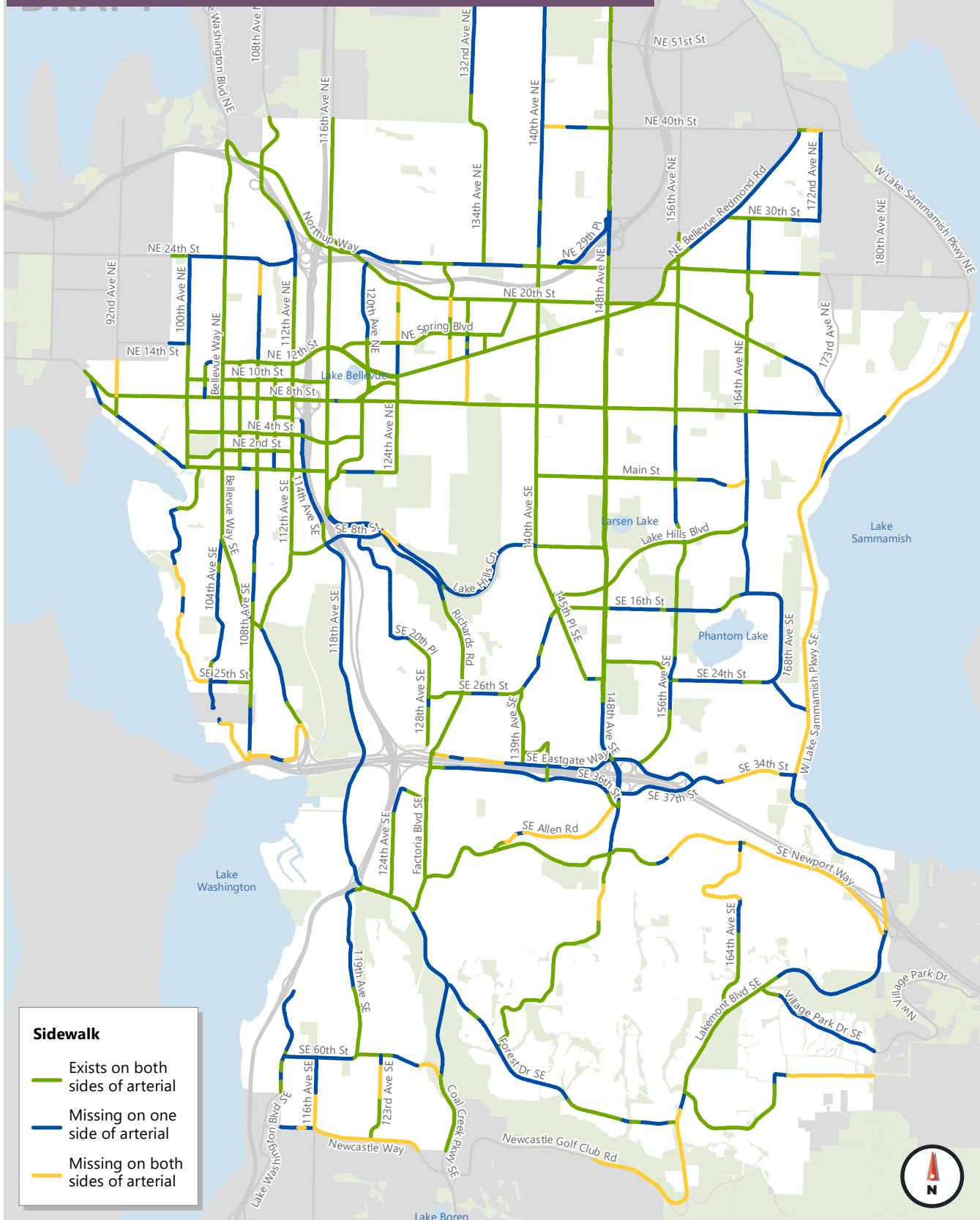
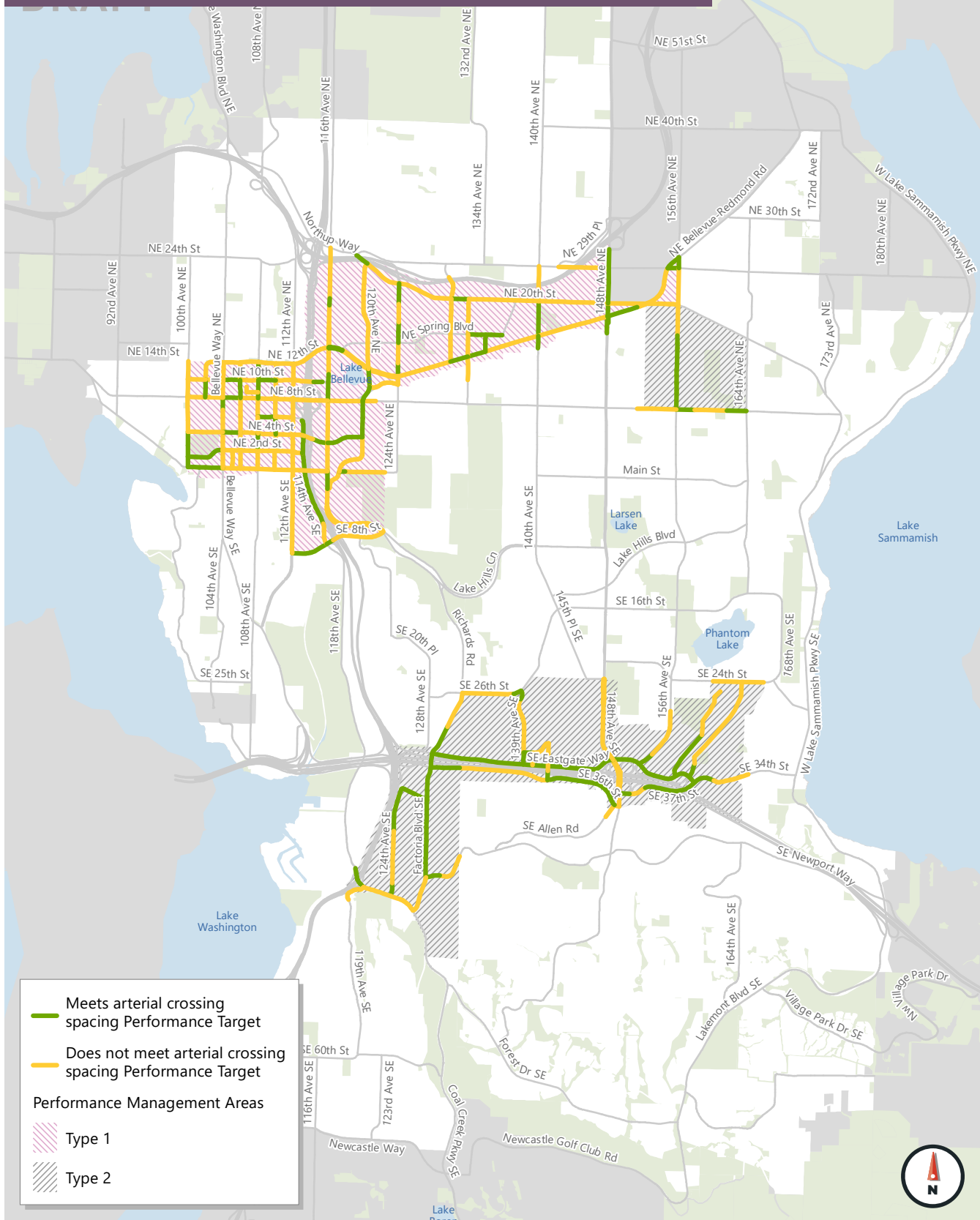


Figure 15: Arterial Crossing Spacing Performance - 2021



Bicycle Network Performance

Bellevue is targeting completion of bicycle facilities to meet the intended level-of-traffic stress (LTS) along each network corridor as defined in the Pedestrian and Bicycle Transportation Plan. Existing conditions for bicycle LTS is summarized in two ways: the full bicycle network and the Priority Bicycle Corridors. **Figure 16** displays the performance

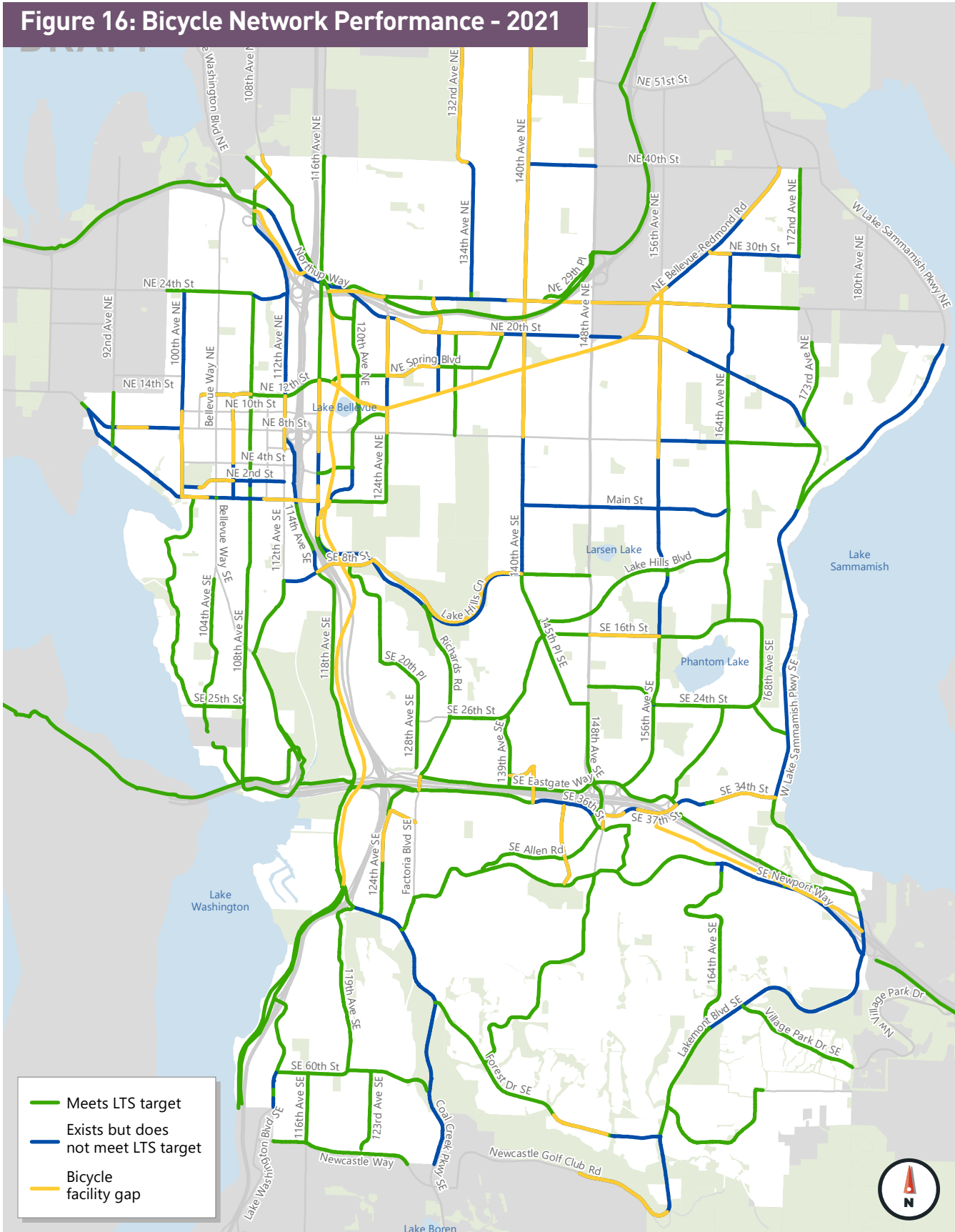
of each bicycle network corridor with respect to the LTS: a bicycle network facility that meets the intended LTS, a bicycle network facility that does not meet the intended LTS, or a gap in bicycle network facilities. The results are summarized in **Table 9** and **Figure 16**.

Table 9: Existing (2021) Bicycle Network Performance Target Results

			Facilities that Meet LTS	Facilities Do Not Meet LTS	Facility Gaps
Citywide	Miles		72	33	33
	Proportion of Total		52%	24%	24%
Performance Management Area	Type 1 High Density Mixed-Use	Downtown	27%	36%	37%
		BelRed	37%	8%	55%
		Wilburton/East Main	47%	14%	38%
	Type 2 Medium Density Mixed-Use	Crossroads	1%	59%	40%
		Eastgate	60%	24%	16%
		Factoria	58%	27%	15%
	Type 3 Residential		57%	25%	18%
Priority Bicycle Corridor	Enatai-Northtowne		93%	7%	0%
	Lake Washington Loop		65%	25%	10%
	Eastrail		23%	0%	77%
	Somerset-Redmond		62%	17%	21%
	Spiritridge-Sammamish		44%	56%	0%
	West Lake Sammamish Pkwy		25%	75%	0%
	SR 520 Trail		77%	23%	0%
	Downtown-Overlake		41%	10%	49%
	Lake-to-Lake Trail		41%	21%	38%
	Mountains to Sound Greenway		32%	26%	42%
	Coal Creek-Cougar Mountain		55%	39%	6%
	Total		50%	28%	22%



Figure 16: Bicycle Network Performance - 2021



Transit Network Performance

Bellevue supports public transit as a time-competitive and accessible mode compared to private vehicle travel between activity centers. Quantitatively, the Performance Target is a transit travel time ratio of 2.0 or less relative to travel time in a private vehicle during the PM peak hour. Transit travel time ratios as of 2019 are displayed in **Figure 17**. The following transit trip pairs between activity centers meet the transit travel time Performance Target:

- Downtown to Eastgate
- Downtown to Overlake
- Downtown to Crossroads
- Factoria to and from Eastgate

All other transit trip pairs currently have a travel time ratio of over 2.0 which indicates transit may be an unattractive option for many riders for travel between activity centers.

In terms of existing transit stop amenities, only a handful of stops on the frequent transit network (FTN) have all five transit amenities described in **Chapter 3**. **Figure 18** shows the existing status of transit stop amenities along the FTN. In general, Bellevue will continue to collaborate with transit agencies and, to a lesser degree, the private sector to improve transit stops. City programs support improving pedestrian access to transit stops.

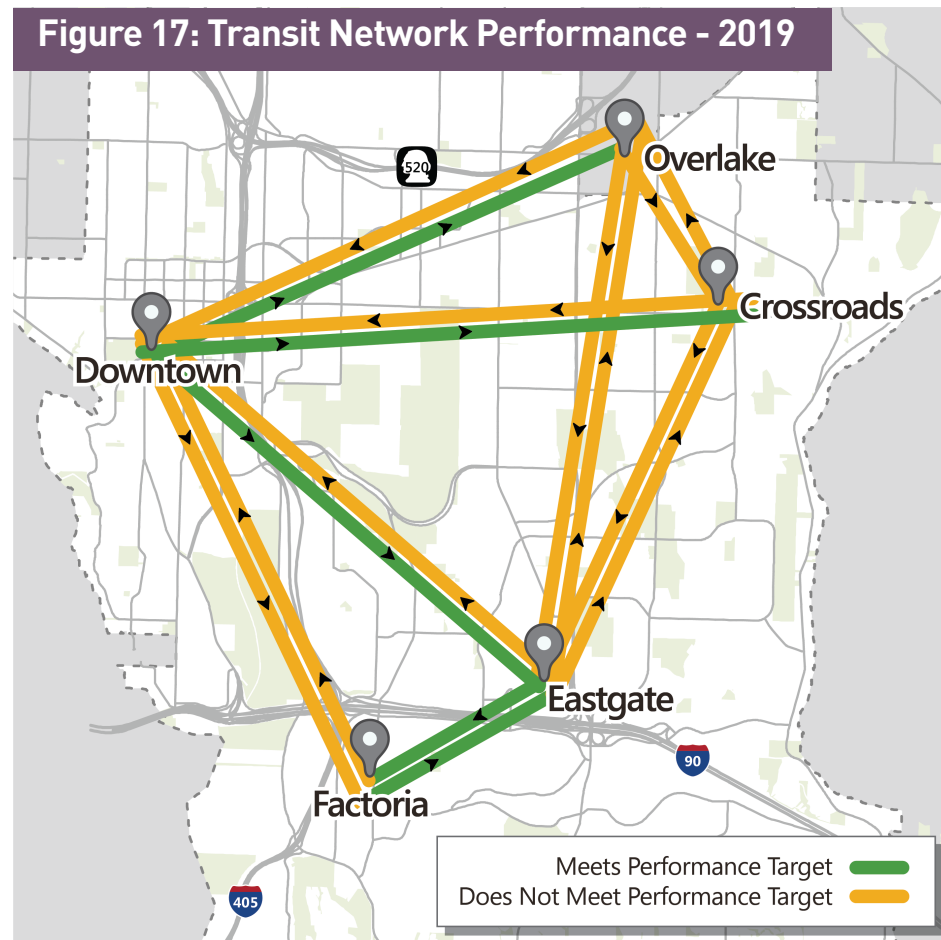
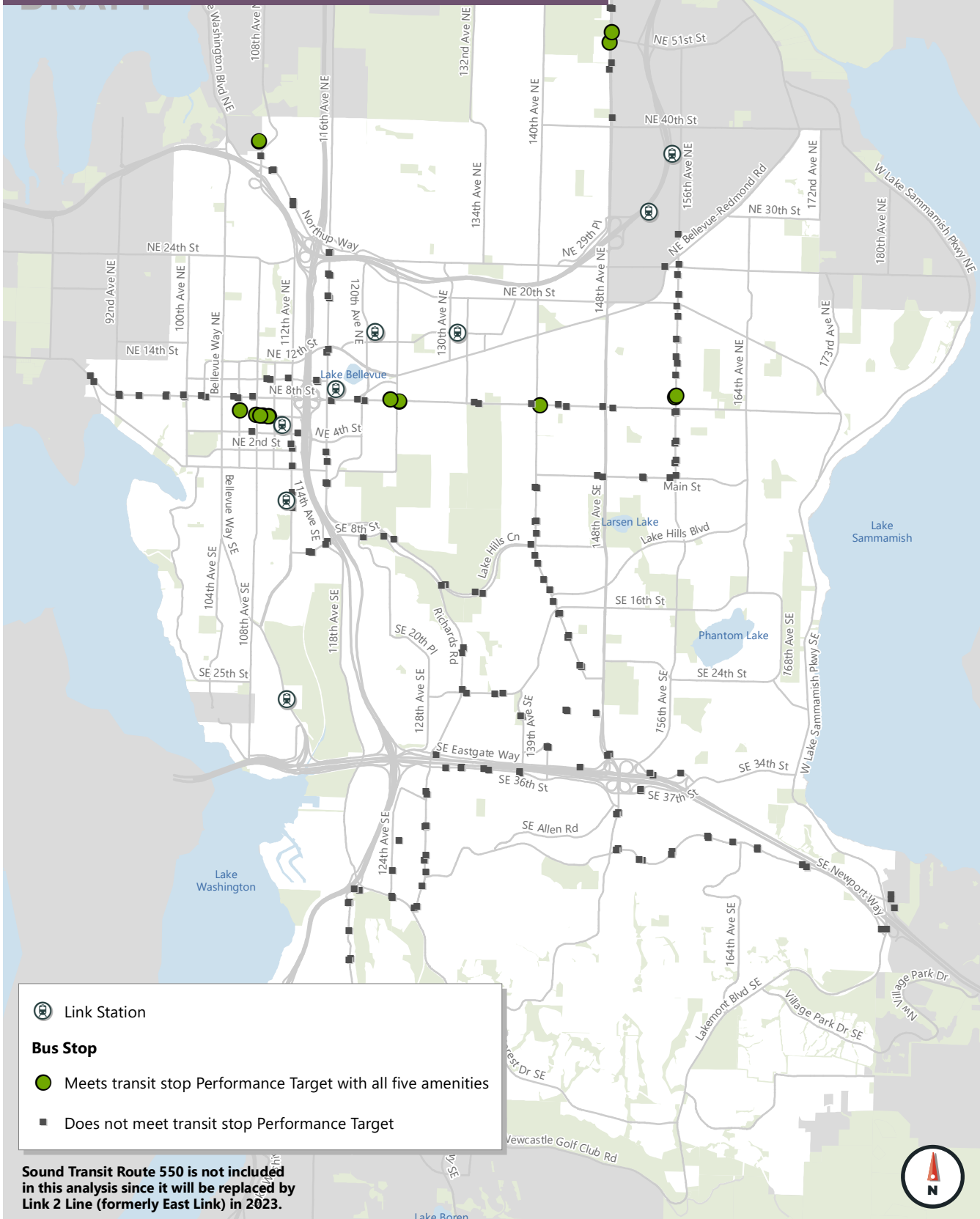




Figure 18: FTN Transit Stop Performance - 2019



Vehicle Network Performance

Vehicle network Performance Targets at System Intersections and along Primary Vehicle Corridors are based on the land use context of the Performance Management Area and viability of other modes. Each System Intersection and Primary Vehicle Corridor is assessed relative to the Performance Targets set for each PMA.

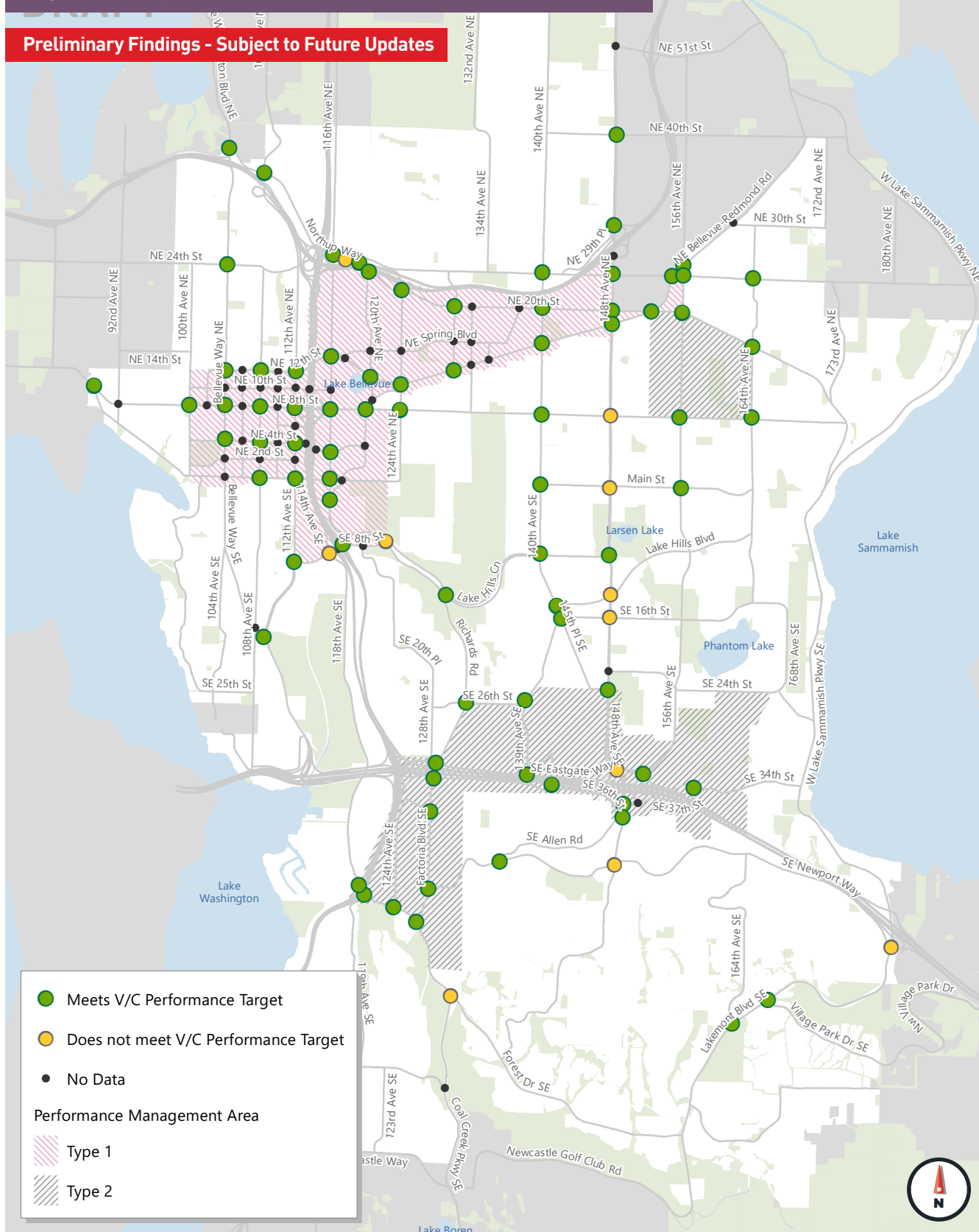
Intersection Volume-to-Capacity (V/C) Ratio

Figure 19 displays each System Intersection and denotes whether it currently (as of

2019) meets the MIP Performance Target. For intersections on the border of two Performance Management Areas, the Performance Target for the higher density Performance Management Area applies. For example, the Type 2 Performance Target would apply to the intersection of 156th Ave NE and NE 8th St. The new System Intersections defined in the MIP have not yet been analyzed and are shown in gray. Results will be updated as the City collects data. Results of the V/C analysis are shown in **Appendix B**.



Preliminary Findings - Subject to Future Updates



Corridor Travel Speed

The results of the Primary Vehicle Corridor travel speed analysis (using fall 2019 data) are shown in **Figure 20**. Note that these results are considered preliminary as City staff are actively collecting new travel speed data. The corridors that do not meet the corridor travel speed Performance Target are a mix of those within or proximate to the Type 1 and Type 2

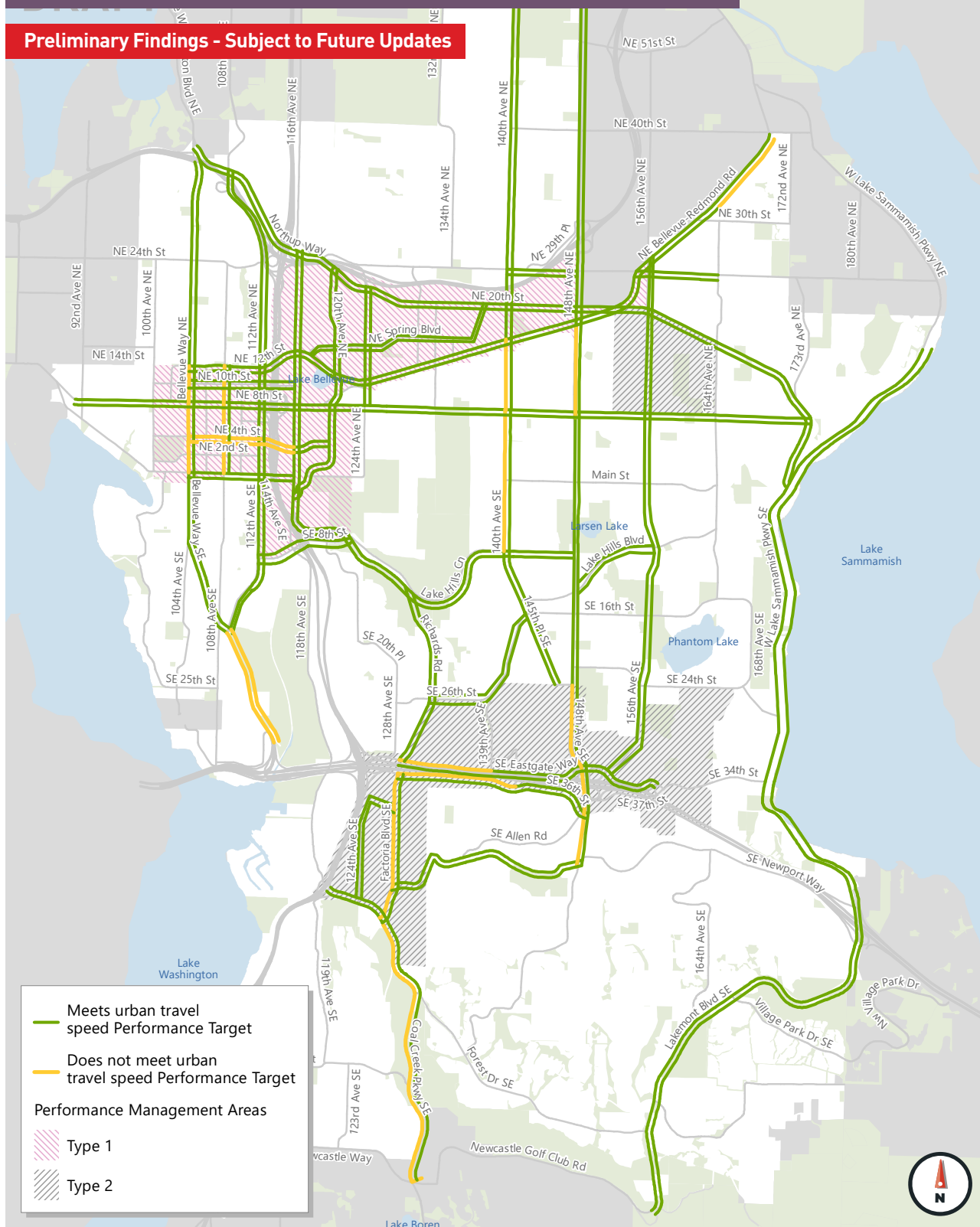
Performance Management Areas (Downtown, BelRed, Eastgate, Factoria) and arterial segments that parallel congested freeway corridors (like Coal Creek Parkway).

Appendix A provides the detailed travel speed for each corridor during the PM peak hour.



Figure 20: Primary Vehicle Corridor Performance - 2019

Preliminary Findings - Subject to Future Updates



Section 5.2. Performance Evaluation: Projected Future Conditions

Considering how the transportation system is expected to perform in the future is an important factor in weighing what Performance Target gaps to prioritize for project development and implementation. By evaluating expected future conditions, City staff, the Transportation Commission, and the community can better understand the implications of the following:

- How land use growth will impact travel patterns at the neighborhood, city, and regional level; the mode choice of new trips; and the overall quantity of new trips.
- Changes to travel patterns and mode choice related to planned transportation investments by the City of Bellevue, neighboring jurisdictions, other agencies, and the private sector.

Over time, travel patterns, the use of the various transportation modes, and the quantity of overall travel will change. Understanding these future conditions while considering current transportation needs is crucial to identifying and prioritizing transportation investments. This section describes the forecast conditions in 2044 assuming the Puget Sound Regional Council growth forecast, currently approved zoning, and the planned transportation investments from the Preliminary 2022-2033 Transportation Facilities Plan (TFP).

This analysis reflects the expected performance of the transportation system in 2033 given the land use forecast for 2044 and could be viewed as a “very high growth” scenario. In general, normal economic cycles

will likely result in a slowdown from today’s very rapid growth and result in fewer new residents and jobs than is forecast in this scenario. Thus, the results in this section could be viewed as a “stress test” of what Bellevue could look like with continued rapid growth.

Since Bellevue has not previously used the MIP Performance Targets to identify gaps and project concepts, the alignment between the Performance Target gaps, project concepts, and investment priorities would likely be different in the future.

Pedestrian Network Performance

The preliminary 2022-2033 TFP project list includes new pedestrian network facilities—some projects would improve existing facilities and others would fill network gaps, as shown in **Figure 21**. Roughly 10 miles of new pedestrian network facilities are expected to be constructed along arterials as part of specific 2022-2033 TFP projects. As shown in **Table 8**, roughly 56% of arterials currently have a sidewalk on both sides, 32% have a sidewalk on one side, and 12% have a sidewalk gap. With the TFP projects in place, **Table 10** documents a forecast that 59% of arterials would have a sidewalk on both sides, 33% would have a sidewalk on one side, and 8% would have a sidewalk gap. There is no specific information about how new arterial designated pedestrian crossings (intersections and mid-block locations) would be addressed in the TFP as these are typically programmatic investments, so no new maps or analyses are prepared.



Figure 21: Future Pedestrian Network Performance – 2033 TFP

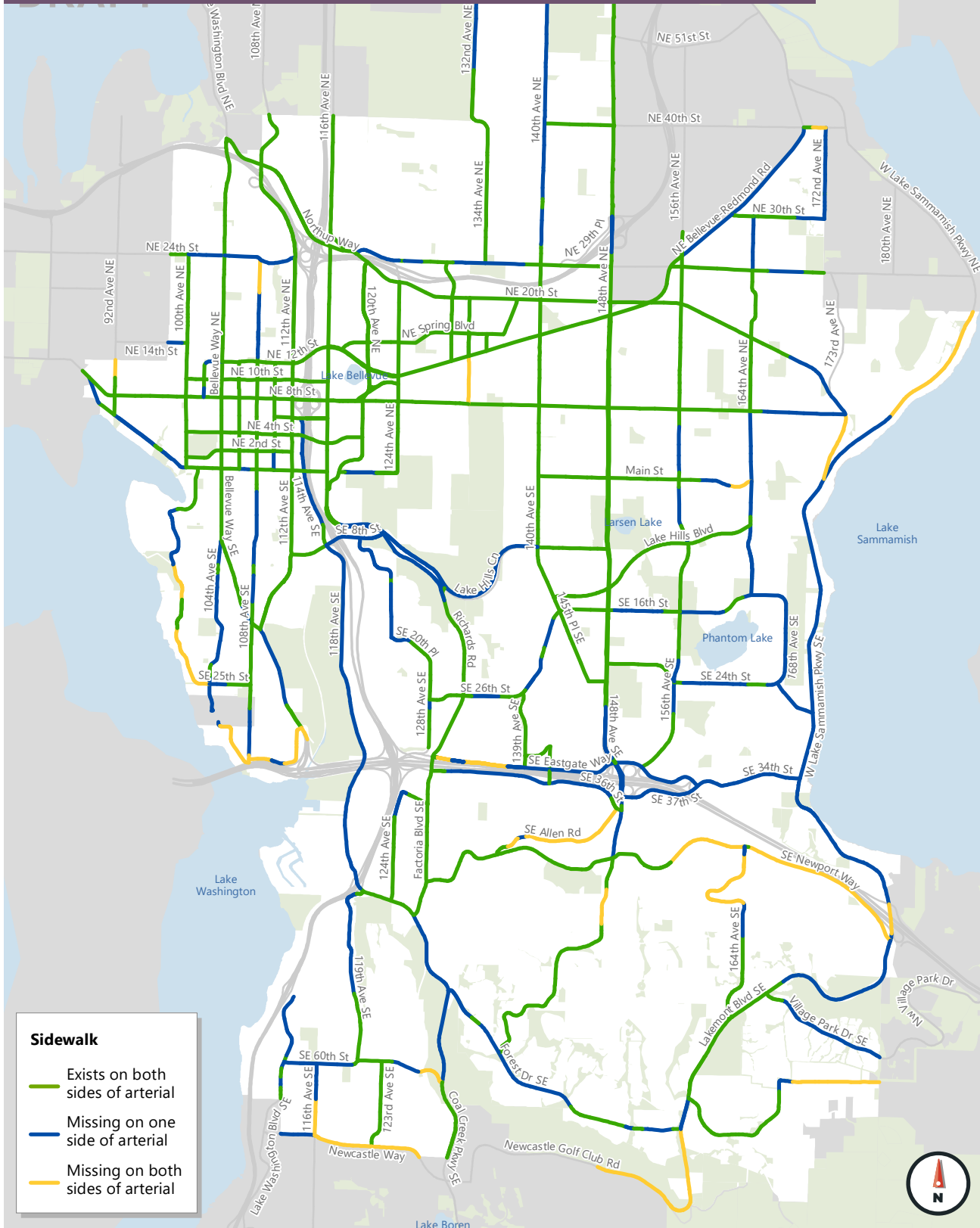


Table 10: 2033 Pedestrian Network Performance Target Results

Citywide		Sidewalk on Both Sides	Sidewalks on One Side	Sidewalk Gaps
Miles		82	45	12
Proportion of Total		59%	33%	8%

Locations within the PMA		Sidewalk on Both Sides	Sidewalks on One Side	Sidewalk Gaps
Type 1 High Density Mixed-Use	Downtown	95%	5%	0%
	BelRed	98%	1%	1%
	Wilburton/East Main	75%	25%	0%
Type 2 Medium Density Mixed-Use	Crossroads	100%	0%	0%
	Eastgate	29%	65%	6%
	Factoria	70%	28%	2%
Type 3 Residential		50%	38%	12%

The TFP also includes a funding reserve for the implementation of priority pedestrian and bicycle projects to be determined by the City's Pedestrian & Bicycle Implementation Initiative and other programs. This funding reserve has potential projects listed within the TFP, but specific projects have not been identified and the specific impact on addressing the pedestrian network Performance Target gaps is not known. However, given the \$21 million

reserve funding identified in the TFP and other citywide programs to build sidewalks, substantial progress can be expected to fill in Performance Target gaps on the arterial network. It is worth noting that Bellevue has implemented about three miles of pedestrian facilities per year over the past decade through large-scale multimodal corridor improvement projects and stand-alone sidewalk and pathway projects.*

* Neighborhood sidewalks, while important for access and mobility, are not considered part of the arterial sidewalk network. City programs support building neighborhood sidewalks as well as the arterial sidewalk network.



Bicycle Network Performance

As shown in **Table 9**, roughly 52% of the citywide bicycle network currently meets the intended LTS Performance Target, 24% of the network has a facility that does not meet the intended LTS Performance Target, and 24% of the network has a Performance Target gap. The 2022-2033 TFP includes projects that would construct new bicycle network facilities assumed to

meet the intended LTS. With those projects in place by 2033, it is expected that roughly 63% of the citywide bicycle network would meet the intended LTS, 19% of the network would not meet the intended LTS, and 18% of the network would have a Performance Target gap. The results are shown in **Table 11** and **Figure 22**.

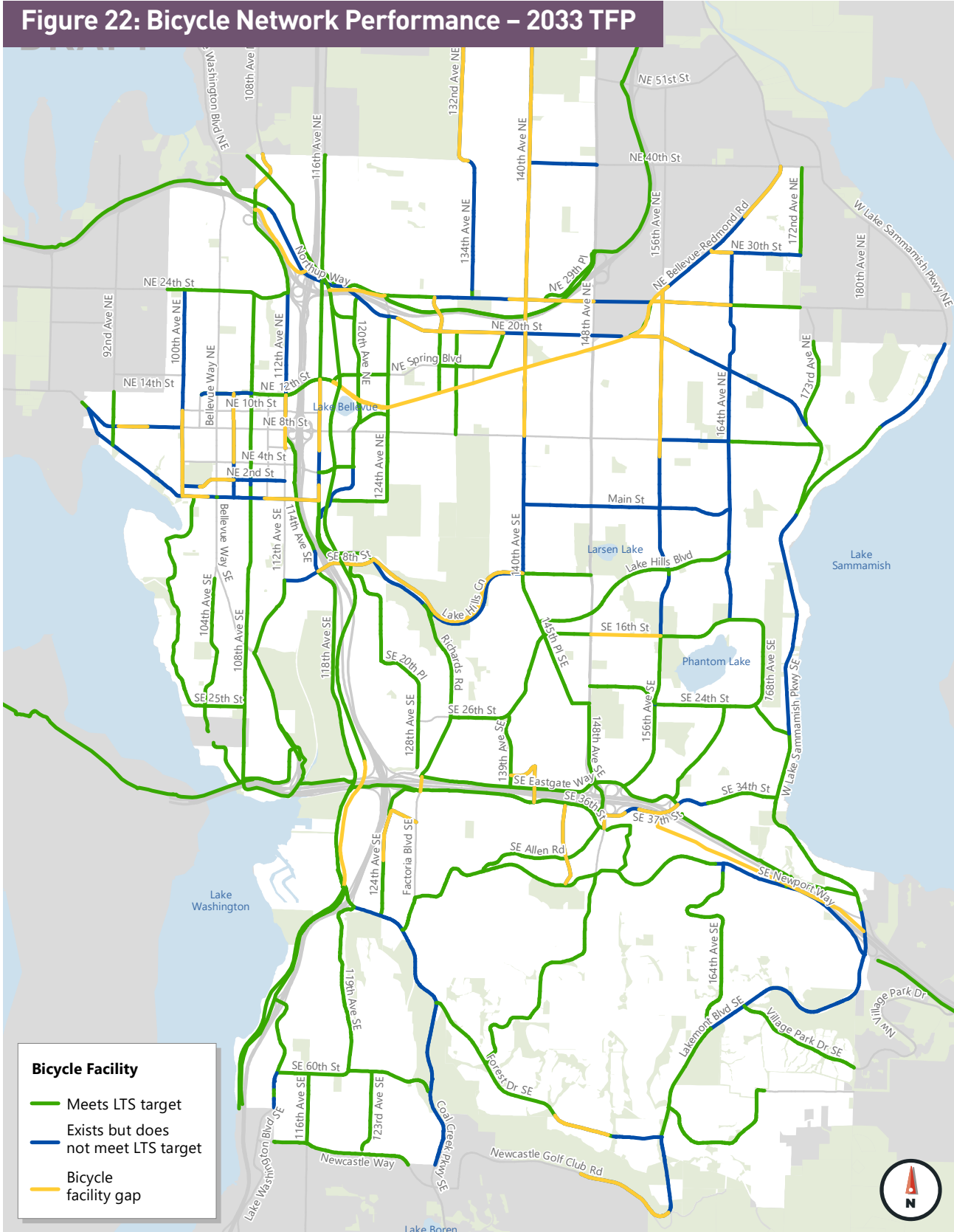


Table 11: 2033 Bicycle Network
Performance Target Results

			Bicycle Facility Meets LTS Target	Bicycle Facility Does Not Meet LTS Target	Bicycle Facility Gaps
Citywide Network	Miles		87	26	25
	Proportion of Total		63%	19%	18%
Performance Management Area	Type 1 High Density Mixed-Use	Downtown	33%	29%	37%
		BelRed	57%	5%	38%
		Wilburton/ East Main	72%	7%	21%
	Type 2 Medium Density Mixed-Use	Crossroads	1%	59%	40%
		Eastgate	74%	11%	15%
		Factoria	58%	27%	15%
	Type 3 Residential		66%	20%	14%
Priority Bicycle Corridor	Enatai-Northtowne		98%	2%	0%
	Lake Washington Loop		79%	11%	10%
	Eastrail		83%	0%	17%
	Somerset-Redmond		62%	17%	21%
	Spiritridge-Sammamish		44%	56%	0%
	West Lake Sammamish Pkwy		49%	51%	0%
	SR 520 Trail		77%	23%	0%
	Downtown-Overlake		86%	14%	0%
	Lake-to-Lake Trail		48%	21%	32%
	Mountains to Sound Greenway		48%	11%	42%
	Coal Creek-Cougar Mountain		55%	39%	6%
	Total		64%	23%	13%



Figure 22: Bicycle Network Performance – 2033 TFP



Transit Network Performance

Transit travel time vs. auto travel time was evaluated for future (2033) conditions based on forecasted corridor travel times and new operating characteristics for transit between the activity center pairs. Preliminary results are shown in **Figure 23**. Specifically, the Link 2 Line (East Link) light rail extension will shorten transit travel time between Downtown and Overlake and the RapidRide K Line bus rapid transit service will shorten transit travel time between Downtown and Eastgate. The TFP also includes the NE 6th Street extension, currently planned between I-405 and 120th Avenue NE (the eastern terminus of the NE 6th Street extension may change as a result of the Wilburton Subarea Planning process), the Bellevue College Connection, and southbound HOV lanes on a segment of Bellevue Way. These projects would improve transit travel time by providing speed and reliability improvements on existing routes or allowing more efficient routing. These reduced transit travel times were compared to the forecasted auto travel times, with the following findings:

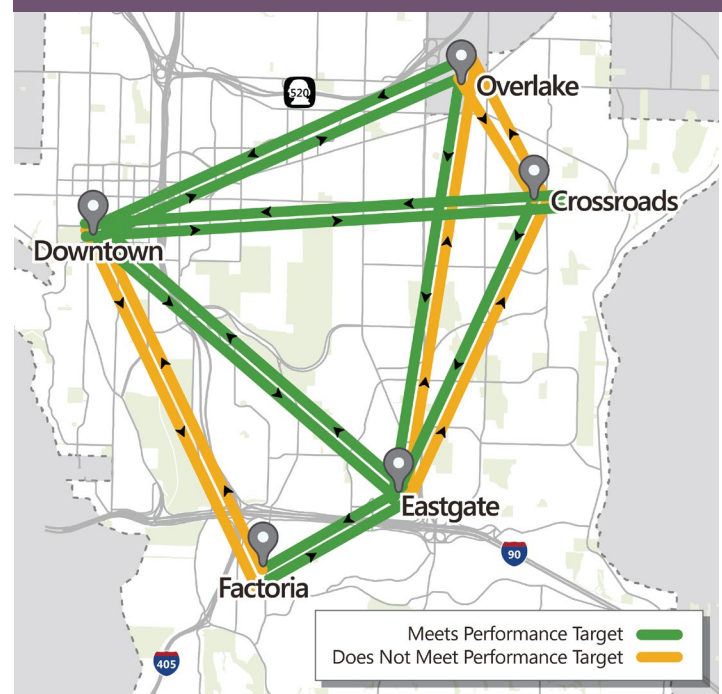
- **Downtown – Overlake:** Transit travel time vs. auto travel time ratio for both directions of travel between Downtown and Overlake would decrease to less than 1.0 indicating that a transit trip travel time is expected to be shorter than an auto trip during the PM peak period. This is a direct benefit of Link light rail investments.
- **Downtown – Crossroads:** The NE 6th Street extension across I-405 would allow buses to access the Bellevue Transit Center more efficiently by avoiding congestion along NE 8th Street.
- **Eastgate – Downtown, Overlake and Crossroads:** Transit travel time vs. auto travel time ratio between Eastgate and Downtown, Overlake, and Crossroads

would decrease with the more direct Bellevue College Connection, bringing the travel time ratio below the 2.0 Performance Target on some activity center pairs.

All other activity center pairs would maintain existing transit service characteristics and both buses and autos would experience the same relative change in travel time. Therefore, the transit travel ratio between those activity centers is expected to stay roughly the same as existing conditions.

It is worth noting that at the time of publication, the 2044 land use forecasts were still in draft form and may be updated, which would affect the transit travel time results. The City's transportation modeling and forecasting group is also refining how it analyzes vehicle travel speed to improve forecasts, which could also influence results.

Figure 23: Transit Network Performance – 2033 TFP with 2044 Land Use





Vehicle Network Performance

The effects of the projected land use growth and continued investment in the transportation system were modeled using the City's travel demand forecasting tool, BKRCast. For this analysis, a 2044 land use growth projection is assumed along with the preliminary 2022-2033 TFP investments and other regional transit and roadway projects. As noted earlier, since both the 2044 land use growth forecast and the TFP project list are not finalized, the vehicle network Performance Targets results should be considered preliminary and subject to change. For this analysis, the BKRCast tool was used to forecast the future intersection V/C ratio for each System Intersection and the travel speed for the Primary Vehicle Corridors.

For the vehicle corridor travel speed specifically, the 2019 PM Peak hour speed data was scaled by the BKRCast tool's forecasted change in PM Peak period travel speeds. The City transportation modeling team is actively working on new tools and data to more accurately forecast this Performance Target—this is another reason the results shown in this section should be viewed as preliminary and subject to refinement.



Intersection Volume-to-Capacity (V/C) Ratio

Figure 24 displays each System Intersection and denotes whether it is projected to meet the Performance Target in 2033. A full table of results is provided in **Appendix B**. Increases in the V/C ratio at System Intersections across the city match the pattern of land use growth, but the ratio increases the most in the fastest growing Type 1 Performance Management Area (Downtown, Wilburton/East Main, and BelRed). Some intersections in the Eastgate portion of the Type 2 PMA have a slightly lower V/C ratio because of TFP projects that add vehicle capacity that would not yet be fully consumed by growth.

Corridor Travel Speed

As shown in **Figure 25**, the results of the travel speed analysis generally mirror that of the intersection V/C analysis; however, several corridors show degraded travel speed as a result of expected growth in vehicle trips. Corridors that are expected to have degraded travel speed include Bellevue Way near I-90, Richards Road and Eastgate Way near I-90, 148th Avenue SE near I-90, and West Lake Sammamish Parkway.

Preliminary Findings - Subject to Future Updates



Preliminary Findings - Subject to Future Updates

Meets urban travel speed Performance Target

Does not meet urban travel speed Performance Target

Performance Management Areas

Type 1

Type 2

Section 5.3. Monitoring Performance Targets Over Time

As a commitment to provide the community with transparent reporting on how MIP Performance Target analysis results change as the City grows, Bellevue will periodically analyze and report on MIP Performance Targets and related transportation metrics identified in the Environmental Stewardship Plan. Specific targets may include:

- **Pedestrian**

- » Percent of arterials with sidewalks on both sides
- » Percent of arterials with sidewalk on one side
- » Percent of arterials with a gap in the sidewalk network
- » Percent of arterials with designated crossings that meet MIP crossing spacing targets

- **Bicycle**

- » Percent of bicycle network and Priority Bicycle Corridors that meets intended LTS
- » Percent of bicycle network and Priority Bicycle Corridors that have bicycle facilities that do not meet intended LTS
- » Bicycle network facility gaps – overall network, Priority Bicycle Corridors

- **Transit**

- » Percent of activity center pairs that meet transit travel time ratio Performance Targets (both directions)
- » Percent of transit stops that meet passenger facility Performance Targets

- **Vehicle**

- » Percent of Primary Vehicle Corridor network that meets corridor travel speed Performance Target
- » Percent of System Intersections that meet V/C Performance Target

- **Environmental Stewardship Plan Targets**

- » Commute mode share for people who live in Bellevue to track whether the share of single-occupancy vehicles is decreasing as intended
- » Commute mode share for people who work in Bellevue to track whether the share of single-occupancy vehicles is decreasing as intended
- » Per capita vehicle miles traveled to see whether the City is tracking to reduce the total amount of driving per person as land uses become more proximate to each other and other modes become more viable
- » Pedestrian and bike counts to monitor utilization of new active mode investments

In addition to providing general information on the performance of the transportation system, the analysis of Performance Targets will inform updates to the Transportation Facilities Plan, as described in **Chapter 6**.

Project Identification & Prioritization

The Mobility Implementation Plan identifies how Bellevue measures the performance of the transportation system, the geographic areas where performance is summarized, the Performance Targets for each mode that define when the system may need an investment to accommodate growth, and a snapshot of existing and future conditions when viewed through the lens of the Performance Targets.

Based on this analytical approach, this chapter identifies how the City will address Performance Target gaps. If resources were available, Bellevue would quickly address all the Performance Target gaps so that all travelers could easily and safely get around the city in the mode of their choice in a manner that meets their expectations. However, financial, land use, and environmental constraints, and potential conflicts between modes and with other city goals limit the types of investments the City may choose to pursue. Additionally, factors such as livability, urban form, and right-of-way must be taken into consideration as the City makes choices to invest its limited transportation funding.

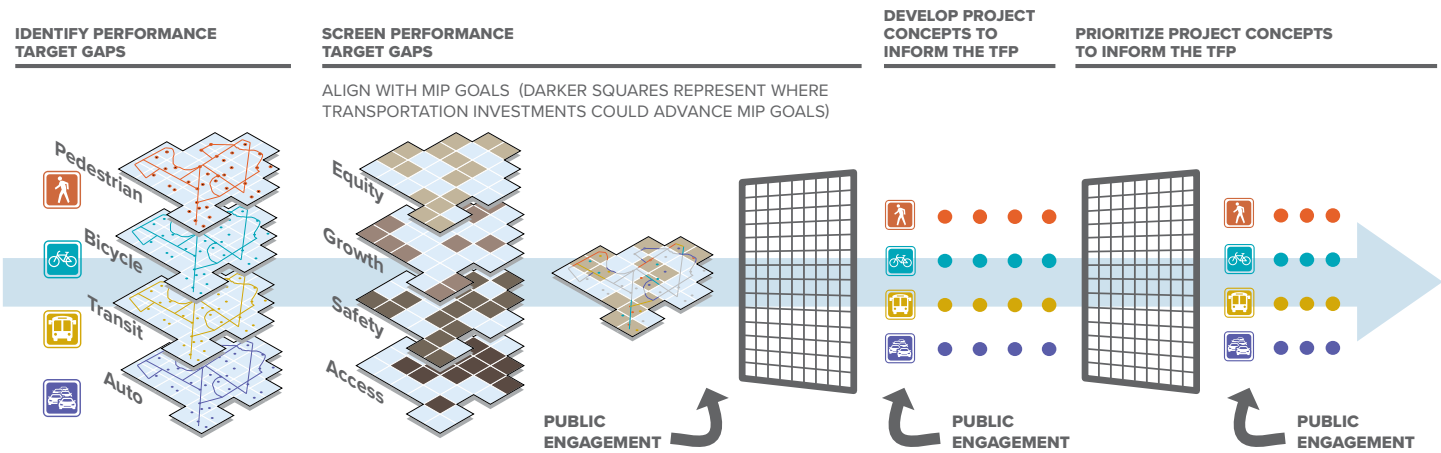
While identifying Performance Target gaps is a critical first step, advancing a project concept into project design, funding, and implementation requires additional analysis and outreach. This chapter describes a Project Identification & Prioritization framework that City staff, the Transportation Commission, and the community will use to narrow the identified Performance Target gaps to those that are most urgent, identify when to seek public

input, and align transportation investments with community goals. The framework creates a consistent and transparent process to identify, evaluate, develop/design, and advance transportation projects that address the Performance Target gaps. Objectives of this framework are to provide:

- Consistency to ensure the process uses readily available data and can be repeated,
- Transparency to ensure clear and understandable decision making, and
- Evaluation tools to assist the City to select projects that may be implemented within available funding while balancing environmental targets and other community considerations.

The framework depicted graphically in **Figure 26** uses the MIP goals of designing for safety, advancing equity, supporting growth, and aligning transportation investments with access and mobility needs. It defines a decision-making approach that will advance Bellevue's mobility objectives.

Figure 26: Project Identification and Prioritization Framework



The framework outlines a transparent, data-driven, four-step process. Each step is introduced in the chart below and further described in this chapter.

Step 1	Step 2	Step 3	Step 4
Identify Performance Target Gaps	Screen Performance Target Gaps	Develop Project Concepts	Screen for Funding and Implementation
Identify where the documented performance of the transportation system does not meet the defined Performance Targets.	Screen Performance Target gaps for alignment with MIP goals (equity, supporting growth, safety, and access/mobility) and determine appropriateness to move forward to develop project concepts that address Performance Target gaps.	Develop project concepts to address Performance Target gaps that align with MIP goals. Factors such as environmental sustainability, equity, and livability are considered.	Inform the development of the TFP by considering the outcomes of the prior steps: clearly identifying Performance Target gaps, screening the Performance Target gaps based on MIP goals, and developing a set of potential projects that can be incorporated into the TFP.



Step 1: Identify Performance Target Gaps

Purpose

Identify where the documented performance of the transportation system does not meet the Performance Targets. Performance Targets reflect the quality of the user's experience for each mode.

Step 1 begins with an assessment of each modal network (pedestrian, bicycle, transit, vehicle) to identify where the Performance Targets are not met. The MIP defines Performance Target gaps for each mode as follows:

- **Pedestrian:** Arterial segments that are missing a sidewalk, particularly where sidewalks are missing on both sides of the street; arterial segments that do not have a designated pedestrian crossing as warranted by spacing metrics and pedestrian destinations.
- **Bicycle:** Segments and intersections on the bicycle network that do not meet the Level of Traffic Stress (LTS) Performance Target, focusing particularly on segments and intersections that are completely missing infrastructure to reduce LTS..
- **Transit:** Frequent transit network routes between activity center pairs where riding a bus would take more than 2.0 times longer than driving a car; frequent transit network bus stops that do not provide the intended passenger amenities at stops or stations.
- **Vehicle:** System Intersections where the volume-to-capacity (V/C) ratio exceeds the Performance Target; segments of the Primary Vehicle Corridors where travel is slower than the Performance Target.

The segments of the multimodal transportation network that do not meet the Performance Targets will be documented by the City under existing and future (2033) conditions to inform Transportation Facilities Plan (TFP) update. See **Appendix C** for the list of existing and future Performance Target gaps.

Outcome

The outcome of Step 1 is a map and list of network Performance Target gaps by mode.

Step 2: Screen Performance Target Gaps

Purpose

Screen Performance Target gaps for alignment with MIP goals and determine appropriateness to move forward to develop project concepts that address Performance Target gaps.

A list and map of Performance Target gaps are generated by the MIP Performance Target assessment. Step 2 identifies a subset of gaps that warrant project concept development.

The screening process includes two sub-steps:

1) Engage the Transportation Commission and the public to ensure the data accurately reflects Performance Target gaps, and **2)** Screen the Performance Target gap for further project concept development if it passes through the first sub-step. The steps are further described below.

Performance Target gaps that do not pass this screening step are acknowledged and a reason for not advancing the gap to project concept development is documented. A Performance Target gap that is not addressed may be reconsidered when Performance Targets are reevaluated, which is anticipated to occur in advance of TFP updates. Specific administrative and procedural details of this screening process will be finalized as the program implementation guide is established.

Step 2.1: Assess Performance Target Gaps against MIP

Spatial representation, through GIS-based mapping, is used to assess how well network Performance Target gaps align with MIP goals of Safety, Equity, Supporting Growth, and Enhancing Access/Mobility. Each MIP goal has data that can be reviewed to identify where transportation investments could best advance the desired outcome. These “areas of need” may be used to screen Performance Target gaps, identify and design project concepts, and prioritize investments. They can be used alone or in combination to focus on addressing Performance Target gaps that advance multiple MIP goals.

In this step, it may be determined that some projects may address a performance target gap, but may be inconsistent MIP goals. In these cases, some projects may not be advanced.



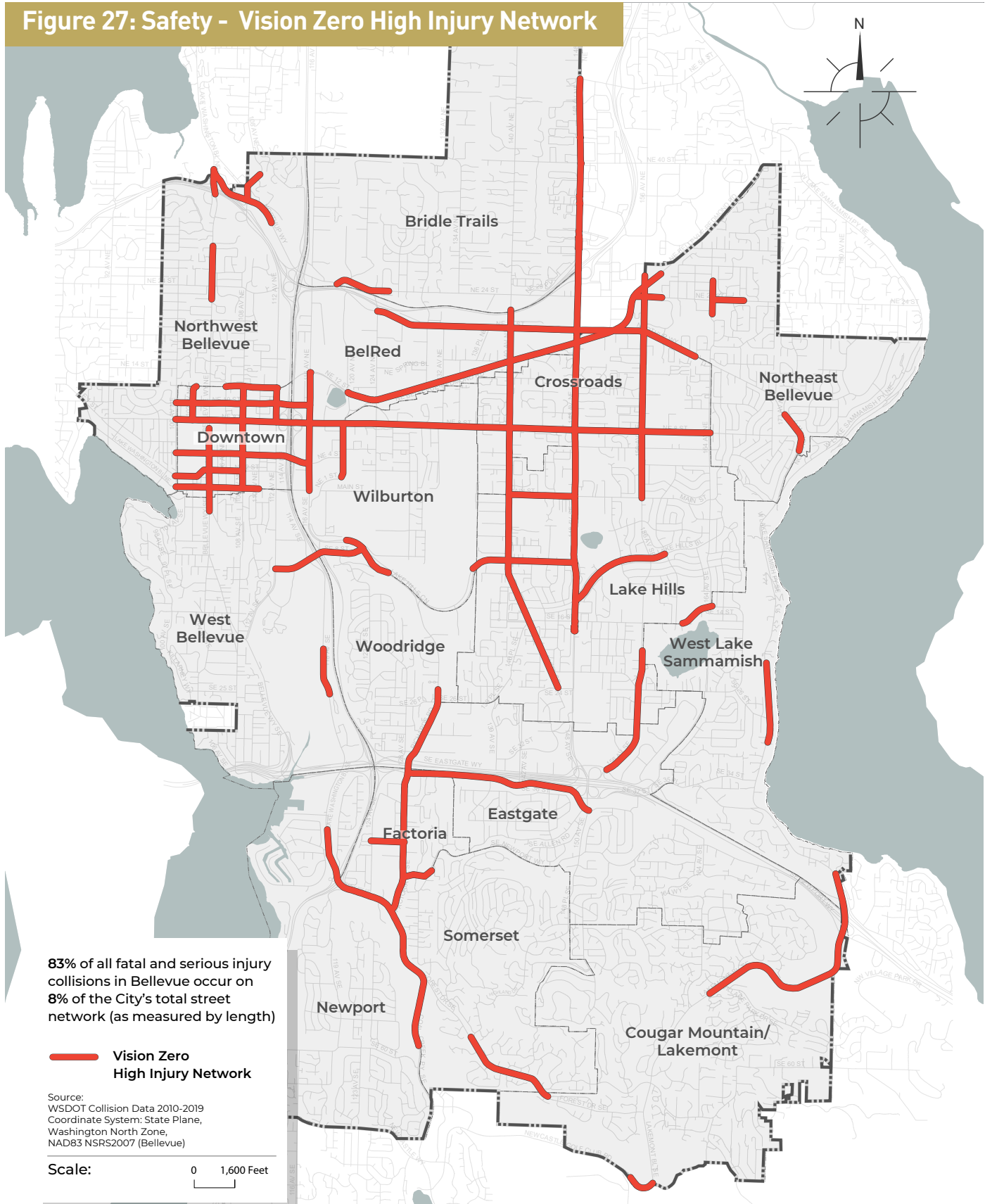
MIP Goal: Safety

Focusing on safety as a screening tool ensures alignment with Bellevue's Vision Zero goals. The City continuously analyzes traffic collision data to identify the portions of Bellevue's arterial network that have the highest proportion of fatal and serious injury crashes.

These high-crash locations are known as the High Injury Network for the 2010-2019 period and are shown on **Figure 27**. Proximity to the High Injury Network may be considered when prioritizing Performance Target gaps since a single investment may be able to add travel capacity and address a transportation safety issue.



Figure 27: Safety - Vision Zero High Injury Network





MIP Goal: Equity

The MIP integrates an equity lens into Bellevue's transportation planning and prioritization of projects. A transportation equity evaluation documents where people who may have transportation and mobility challenges live and work and where there may be an opportunity to build projects that enhance mobility and address specific access needs. The transportation equity evaluation includes traditionally underserved

or transportation-disadvantaged population groups. **Table 12** summarizes the components, which are presented in alphabetical order and are not in order of priority.

Each of these factors do not necessarily equate to a transportation disadvantage. Similar to a Performance Target gap, the presence of an Equity Index Component does not necessarily prescribe a specific type of project.

Table 12: Equity Evaluation Components

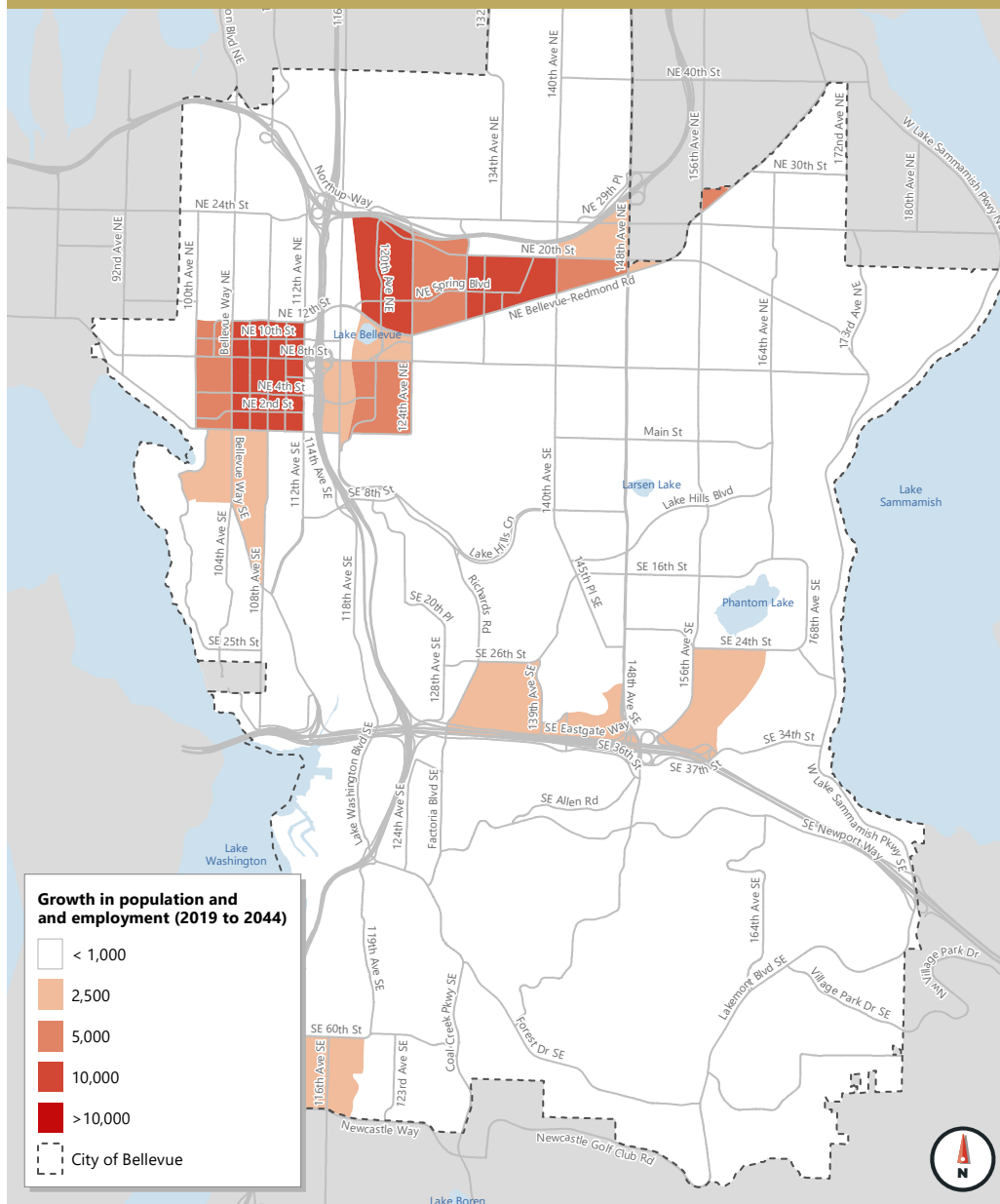
Equity Index Component	General Relationship to Transportation
Housing costs as percentage of income (renter-occupied)	People who are "housing cost burdened" tend to have less income to spend on transportation (even if they are not classified as low-income) and therefore tend to drive less and rely more on other modes.
Limited English proficiency households	Limited English proficiency households (even when controlling for income) tend to travel more by walking, biking and transit.
Low-income households	Lower income households tend to drive less as the cost of operating a vehicle presents a substantial burden; this group tends to walk, bicycle, and use transit more than higher-income households.
Low-wage jobs (based on job location)	The location of low-wage jobs tends to indicate that employees may rely more on walking, biking, and transit to reach their job since the cost of driving and parking can consume a substantial proportion of their wages.
People of color	Across the country, people of color (even when controlling for income), tend to travel more by walking, biking, and transit.
People over age 64	Older people may require additional accommodations (e.g., longer pedestrian phases at intersections) and tend to drive less than other populations.
People under age 18	16-18 year-olds tend to drive at a lower rate than other groups and use other modes more often.
People with a disability	People with a disability may require additional or specific accommodations (e.g., audible pedestrian signals or curb ramps) and tend to drive less than other populations.
Single-parent households	Single-parent households tend to have less income to spend on transportation and also tend to be more schedule constrained. These households may still own a car, but drive less to save money.
Zero-vehicle households	These households may not have regular access to a private vehicle either by choice or other factors and tend to drive less and use other modes more.

MIP Goal: Support Growth

A focus of the MIP is to identify and prioritize transportation investments that support growing travel demands from new development. When evaluating Performance Target gaps for the vehicle mode in the PM peak period, growth is summarized as the projected growth in vehicle trips and the impact of those trips added to the System

Intersections and along Priority Vehicle Corridors. Greater expected demand from planned land use is particularly important when evaluating Performance Target gaps for pedestrian, bicycle, and transit modes to help determine where project concepts will address the greatest need and result in the greatest utilization. **Figure 28** shows the areas of the city that are expected to grow the most by 2044.

Figure 28: Growth - Forecast Growth in Population and Employment 2019 to 2044



Step 2.2 Engage the Public

Public engagement, including the discussions and deliberations of the Transportation Commission, is critical in this stage to confirm Performance Target gaps and to understand local transportation needs. Questions the community may consider include the following:

- Relative to other Performance Target gaps, what are the Performance Target gaps you are most interested having the City invest in?
- Relative to the goals of the MIP, are there other transportation needs that are not being considered when Performance Target gaps are being screened?

Step 2.3 Screen Performance Target Gaps

To screen Performance Target gaps, staff will review the data to indicate where investments could advance MIP goals and also review public feedback to determine whether the Performance Target gap warrants further investigation to be considered for project development. The Performance Target gaps that will not have a project concept developed will be documented so that they may be considered in the future as projects are completed and priorities are reconsidered.

Questions to consider during screening include the following:

- Does the Performance Target gap overlap with an area of need to advance one or more MIP goals?
- Why is a certain Performance Target gap not being evaluated to develop a project concept? Will it likely be evaluated in the future?
- Are there impacts outside of transportation if a project concept is not being developed at this time?
- Which Performance Target Gaps affect the most users of the transportation system?

Outcome

The outcome of **Step 2** is a narrowed-down list of network Performance Target gaps for which project concepts would be developed.

Any Performance Target gaps that are not advanced to project concept development would be documented and could be reconsidered by City staff at a later date.





Step 3: Develop Project Concepts

Purpose

Develop project concepts to address Performance Target gaps that most align with MIP goals, community input, environmental targets, and other City goals.

Following the Performance Target gap screening in Step 2, the Performance Target gaps in the top tier (i.e., those that most align with MIP goals) are evaluated to identify project concepts. The project concept development step is consistent with existing City programs that consider design standards, existing and future travel needs, environmental constraints, the number of potential users, and overall costs. The MIP enhances the project concept development process by bringing forward new data sources for consideration, specifically the identification of Performance Target gaps for all modes and reviewing those gaps in the context of the MIP goals.

Project concept development is often an iterative process; therefore, a second round of public engagement is also critical to this stage. Questions to consider during engagement include the following:

- Does the project concept effectively address the Performance Target gap?
- Is the project concept consistent with Bellevue's environmental and land use goals?
- Is the project concept consistent with the MIP goals of Safety, Equity, Supporting Growth, and Improving Access/Mobility?
- Can the project concept be incorporated as part of other investments (e.g., implement

a bicycle facility with a utility project, or build an arterial crossing when a new school is constructed)?

- Are there secondary positive benefits or adverse impacts of the project concept on other modes (e.g., a wider intersection that would increase vehicle capacity but make it harder or less safe to walk across the street, or a transit travel time project that would also reduce vehicle delay)?
- Is there a better or alternative way to address the Performance Target gap by providing a project for an alternative mode or travel route? Are there programmatic or operational interventions that could address the gap at a lower cost or with better effectiveness than a capital project?
- Is the project concept in alignment with input and feedback from the community?
- What other community considerations could influence the project concept?
- When considering potential utilization, would an interim improvement be better suited, or is a more extensive permanent improvement a better fit?

Outcome

The outcome of Step 3 is a list of project concepts that address Performance Target gaps, achieve MIP goals, are consistent with community feedback, are environmentally sustainable, are implementable, and can be incorporated into future funding decisions and planning projects.

Project concepts that advance through **Step 3** are candidates for the TIP.

Step 4: Screen Project Concepts for Implementation

Purpose

Inform the development of the Transportation Facilities Plan (TFP) by considering the outcomes of the prior steps: clearly identifying Performance Target gaps, screening the Performance Target gaps based on MIP goals, and developing a set of potential projects that can be incorporated into the TFP.

Bellevue has an established process to allocate funding for transportation projects and programs. This process is the periodic update of the City’s 12-year Transportation Facilities Plan (TFP).

The data in the MIP enhances the TFP update process by providing more contextual information to select the project concepts to advance to funding. For example, equity screening could elevate the priority of a bicycle network Performance Target gap project that connects to Crossroads. The MIP data demonstrate the area’s lower income, high proportion of zero-car households, and high proportion of low-English proficiency households.

Public engagement, including engagement

with the Transportation Commission, is embedded in the TFP update process to confirm that project concepts align with community feedback.

In addition to using MIP data to inform the update of the TFP, Bellevue would continue to work with private developers to implement mobility improvements and to address off-site impacts, as appropriate. The Performance Metrics and Performance Targets will help to ensure these private contributions to Bellevue’s transportation network are also in alignment with the public investments identified in the TFP.

Outcome

The outcome of Step 4 is a project list for consideration in the TFP update process that has been informed by Performance Target gaps, MIP goals, and additional public feedback.

Summary

The transparent, data-driven Project Identification and Prioritization framework in the Mobility Implementation Plan will help Bellevue identify the Performance Target gaps that should be prioritized for project concept development and funding. The screening of Performance Target gaps is centered around the MIP goals of improving the transportation system in a way that is safe, equitable,

supports planned growth, and considers the access and mobility context of adjacent land uses. Public engagement is included at key steps of the framework to understand community sentiment, ensure project concepts support City goals, and confirm that project concepts align with community feedback.

Transportation Concurrency

Transportation Concurrency is a fundamental concept embedded in the Washington State Growth Management Act (GMA). The State Legislature passed the GMA in 1990 to address a misalignment between rapid land use growth and the lack of transportation investments needed to support the new growth. Concurrency requires that cities and counties define a specific level of transportation investment or performance at a given level of growth and to ensure that the transportation improvements are funded and built concurrently with new development.

To implement the multimodal transportation system envisioned in the Mobility Implementation Plan, Bellevue uses a “plan-based” transportation concurrency system to ensure that the implementation of the multimodal transportation system proceeds at a pace that equals or exceeds the pace of growth.

Multimodal Concurrency & Level of Service Standard

A modern transportation concurrency approach for Bellevue incorporates all the elements of the MIP to identify and implement a multimodal transportation network that supports growth. Transportation projects and programs are intended to serve all modes of travel and to support the land use vision articulated in the Comprehensive Plan. Informed by Transportation Commission study sessions from 2014 through 2021 and based on

the policy direction in the Comprehensive Plan, Bellevue has adopted a plan-based “system completeness” approach to multimodal concurrency that requires the “supply” of transportation to equal or exceed the “demand” for transportation. In this system, the level-of-service standard is defined as the supply of mobility units equals or exceeds the demand for mobility units generated by new development.

Multimodal Concurrency Policy

The 2021 policy amendments to the Bellevue Comprehensive Plan and the development of the Mobility Implementation Plan establish the framework for this multimodal concurrency system. Specifically, Transportation Element policy TR- 28 directs the City to “Employ a citywide multimodal level-of-service concurrency standard that provides facilities that meet the demand from new development.”

Concurrency Evolution in Bellevue

This multimodal plan-based approach succeeds the decades-old concurrency system in Bellevue that relied on measuring and addressing only vehicle-related congestion issues. A volume-to-capacity ratio at “system intersections” was the metric used, and the level-of-service standard to which the city was held typically required expansion of the capacity of a system intersection to accommodate an increasing volume of traffic, often without regard to the consequences to other modes, to urban livability or to the environment. The City Council determined that this approach was not sustainable, not aligned with the City’s transportation vision, and did not meet the mobility needs of the increasingly diverse community.

Multimodal concurrency in Bellevue now relies on a plan-based “system completeness” strategy to develop a transportation system that is complete and connected for all modes, using person trips* rather than vehicle trips, and on a citywide concurrency standard based on “supply” and “demand” to ensure that the planned and funded transportation system [supply] accommodates planned land use [demand].

System Completeness

Many communities in Washington employ transportation “system completeness” to determine whether their 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. System completeness is not complicated. It requires that a community define a set of transportation capacity 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. Concurrency is achieved and maintained when the supply of transportation created by implementing projects for all modes is greater than the demand for mobility created by the person trips from new development.

In system completeness, 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 including the process identified in the previous chapter (this is why these types of concurrency programs are called “plan-based”). The ability to meet concurrency is entirely within the City’s control and it is straightforward to calculate and to track concurrency. Performance Targets for each mode may be tracked and used to help refine the multimodal plans and identify/prioritize projects for implementation, but the Performance Targets are not the concurrency standard.

Mobility Units: Supply & Demand

In this multimodal approach to concurrency in Bellevue, the plan-based concurrency system relies on a mode-neutral measure known as the “mobility unit”. Mobility units are measured in terms of person trips rather than the traditional method in Bellevue of measuring only vehicle trips.

Both the “supply” provided by transportation system projects and the “demand” upon that system created by land use are expressed in terms of mobility units. The specific definitions of supply and demand follow.

- **Mobility Units of Supply:** The supply of mobility units is considered in two timeframes – the total pool of planned supply over the long-term, and what

* A person trip travel made by any mode, for example, walking, biking, taking transit or driving.



is available to be “consumed” by new demand.

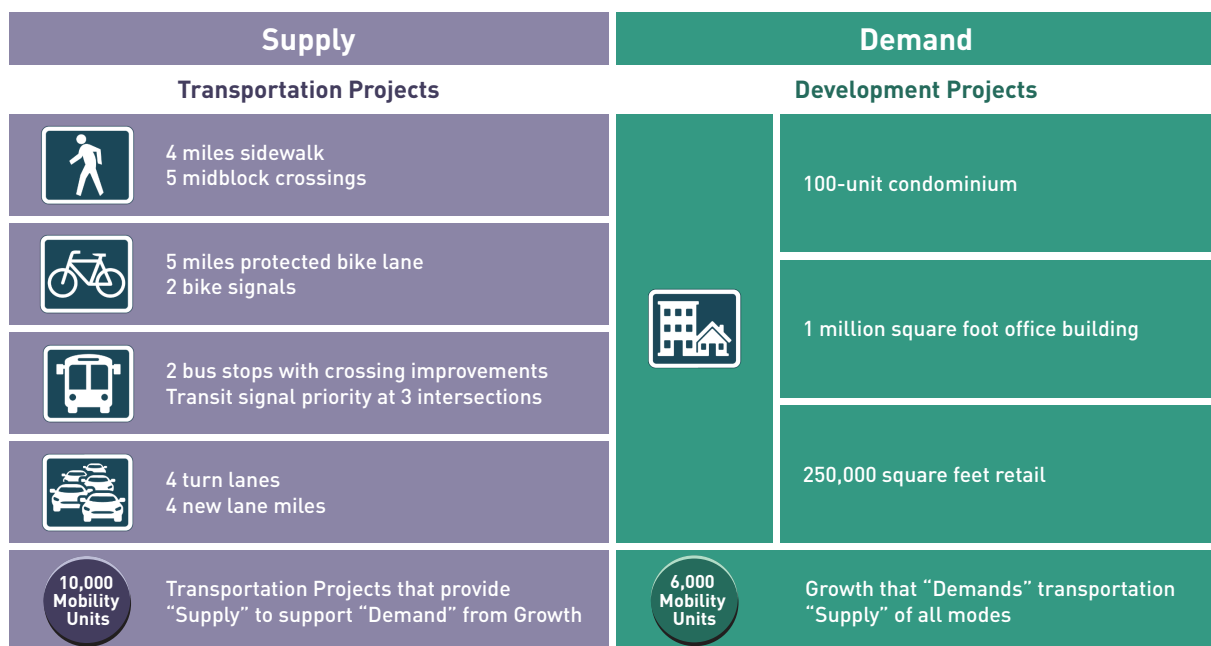
- » **Planned:** The initial supply of mobility units is planned for based on the City’s long-term (~20-year forecast) transportation funding and land use growth forecast. This planned supply must be made “available” before it can be applied to meet demand.
- » **Available:** Supply becomes available when the City obligates funds through the Capital Investment Program (CIP) to build new transportation facilities that support growth. Supply is also available from “running start” projects that the City has already built and that can still accommodate new person trips. Supply can be created by investments in any mode that serves to address Performance Target gaps.
- **Mobility Units of Demand:** Demand is the number of PM peak hour person

trips anticipated to be generated by new development. Mobility units of demand are generated when a development project seeks a permit. Through development review, a Transportation Impact Analysis defines how to calculate person trips for a given development proposal.

Measuring Concurrency: Calculating Supply & Demand

In order to ensure concurrency, Bellevue must implement new mobility units of supply at a rate that keeps up with the new person trips generated development. To equate supply and demand, the total 20-year planned transportation funding forecast is divided by the total 20-year planned growth forecast, as measured in person trips. This calculation provides an estimate of the anticipated investment per person trip of growth. By defining each new person trip as one mobility unit of demand, the mobility units of supply can be calculated using the ratio above. By tracking

Figure 30: Multimodal Concurrency System



Concurrency is achieved and the Level-of-Service Standard is met when

$$\text{Supply} \geq \text{Demand}$$

mobility units of supply and demand, they can be kept in balance; an example is shown in **Figure 30**. A simple way of thinking about this balance is that if 30% of all the planned growth was built or permitted in Bellevue, the city must have at least 30% of the planned transportation system investment built or identified in the CIP for implementation. The concurrency level-of-service standard is met when the supply of mobility units exceeds the demand for mobility units.

Concurrency Management and Development Review

As part of the development review process, each proposed land use project is analyzed to determine the number of mobility units of demand expected to be generated. This demand for mobility units is then compared to the available mobility units of supply within the six-year CIP. An available mobility unit is one that is not consumed by development proposals that are already in the City's review pipeline. If sufficient mobility units are available, then the development is considered to be concurrent and the mobility units of supply are assigned to the development and removed from the available supply for future development. If the development is deemed to be not concurrent, then the applicant has options: wait until additional mobility units of supply become available (through the City continuing to invest in the multimodal system or construction of an identified project), redesign the project to reduce the mobility units of demand, or pay the City to implement an adequate quantity of mobility units.

When concurrency is achieved by any available method, the proposed development would be required to comply with SEPA and Bellevue regulatory requirements, and to pay transportation impact fees as determined by the City Council as required by BCC 22.16.

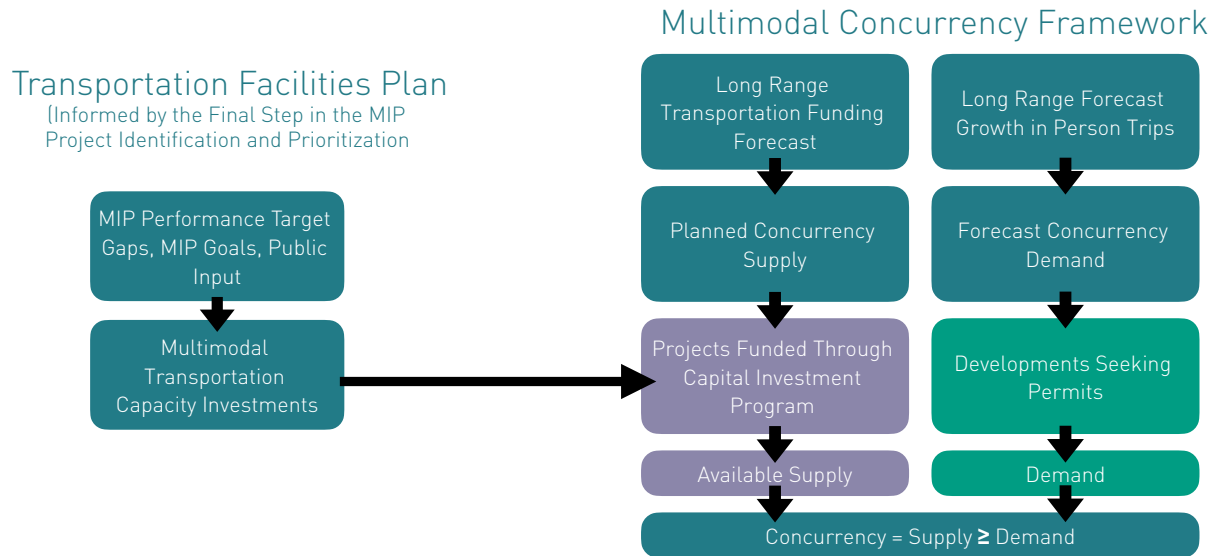
Multimodal Concurrency and Transportation Project implementation

Multimodal concurrency requires that transportation projects be funded for implementation in the CIP to generate mobility units of supply. Multimodal concurrency intentionally does not provide any guidance about the type or location of new transportation facilities. The only requirement is that Bellevue ensures that the supply of available mobility units equals or exceeds the demand for mobility units. This structure is a direct outcome of the Transportation Commission's recommendation that multimodal concurrency be transparent to the community and be simple to implement and administer. Therefore, it is the role of the community (facilitated by city staff and the Transportation Commission) to identify and prioritize projects to advance from concept to implementation.

The MIP describes how the City measures transportation system performance, identifies Performance Target gaps, aligns potential projects to address Performance Target gaps with growth (and other City goals), and ultimately promotes projects to be considered for the Transportation Facilities Plan (TFP). From the TFP, the City can implement a project through the Capital Investment Program (CIP) and thereby generate mobility units of supply. This linkage between the TFP and the CIP describes the relationship between the MIP and Bellevue's multimodal concurrency approach and is depicted in **Figure 31**.



Figure 31: Relationship between Multimodal Concurrency and the Transportation Facilities Plan





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