

City of
Bellevue



Transportation Commission Study Session

DATE: April 4, 2024

TO: Chair Stash and Members of the Transportation Commission

FROM: Kevin McDonald, Principal Transportation Planner, 425-452-4558
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SUBJECT: Mobility Implementation Plan: Performance Target Gaps, Project Concepts and Prioritization to Inform the Transportation Facilities Plan Update

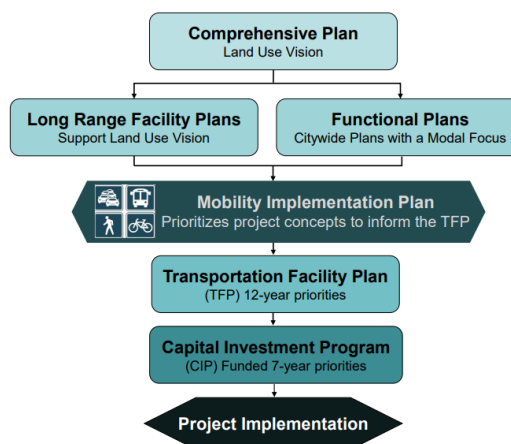
DIRECTION REQUESTED

Action

Discussion/Direction

X Information

The Transportation Commission meeting on April 11, 2024 will kick off the process to use the Mobility Implementation Plan (MIP) to prepare a prioritized project list to inform the upcoming update of the Transportation Facilities Plan (TFP). For the April 11 Transportation Commission meeting, staff will present information on the Performance Target gaps and project concepts to address those gaps for the vehicle mode at System Intersections. We will prepare a similar analysis for Primary Vehicle Corridors and the pedestrian network and bicycle network at the June meeting.



In the transportation planning process, the MIP now plays an essential role to identify and prioritize project concepts that address Performance Target gaps to help inform the Transportation Facilities Plan. The next update of the TFP is scheduled to commence in September 2024.

Purpose of the Mobility Implementation Plan

On April 18, 2022, on recommendation from the Transportation Commission, the City Council adopted the [Mobility Implementation Plan](#) (MIP). The MIP is a quantitative and qualitative approach to assess transportation network performance, identify candidate projects to address

performance target gaps, and to prioritize associated project concepts. The MIP aligns Bellevue's transportation investments with the city's land use vision, providing the platform for Bellevue to achieve the multimodal future envisioned in the Comprehensive Plan. The MIP builds on more than a decade of work by the Transportation Commission on multimodal transportation network plans, policies, and evaluation metrics.

- The MIP defines a four-step process to identify Performance Target gaps, consider MIP goals, develop and prioritize project concepts, and advance those concepts for consideration in the update of the TFP for funding and implementation.

Prior to the MIP, staff worked to identify a mix of multimodal projects to improve mobility across the city generally, and to maintain the adopted vehicle level-of-service standards to meet concurrency requirements. Clear guidance was limited on how to quantify transportation network performance for modes other than vehicles, so the approach rather consistently supported the funding of projects to improve vehicle level-of-service, which prior to the MIP was the only quantified Performance Metric.

MIP Goals

Using the MIP to inform the TFP creates an approach to transparently address Performance Target gaps for all modes. The MIP also identifies the following four goals to further guide the Transportation Commission about which types of Performance Target gaps warrant the highest priority when being considered for advancement to the TFP:

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 network. The MIP fully embraces transportation safety and is integrated as part of Bellevue's overall Safe System approach and Vision Zero goal. Project concepts that have the potential to improve safety and which are located on the city's High Injury Network receive the greatest prioritization relative to this goal.

Equity: There is a recognition that transportation investments in Bellevue should be safe and accessible for all when viewed through a socioeconomic or demographic lens. The MIP introduces a data and analytical framework to evaluate the transportation needs from transportation-disadvantaged people and to design projects and prioritize investments that provide equitable access for everyone. When a Performance Target gap is identified for any mode, an "equity lens" will be applied to ensure the project considers equitable access for all individuals. Based on input from the Transportation Commission, areas in Bellevue that have high concentrations of low-income individuals receive the highest prioritization relative to the equity goal.

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. Areas of the city forecast to experience the greatest amount of growth receive the highest prioritization relative to this goal.

Access and Mobility: As the city grows with a greater mix of and intensity 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 network 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 neighborhood can walk, bike, drive, or take transit to reach their destination. The MIP describes access and mobility in a multimodal environment where people have different transportation needs and expectations across diverse neighborhoods. Areas with concentrations of destinations receive the highest prioritization relative to this goal.

MIP Project Identification & Prioritization Framework : Four Steps

The MIP 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 the diagram below. 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.

The four-step project identification and prioritization framework set forth in the MIP in the graphic below and in the narrative that follows.

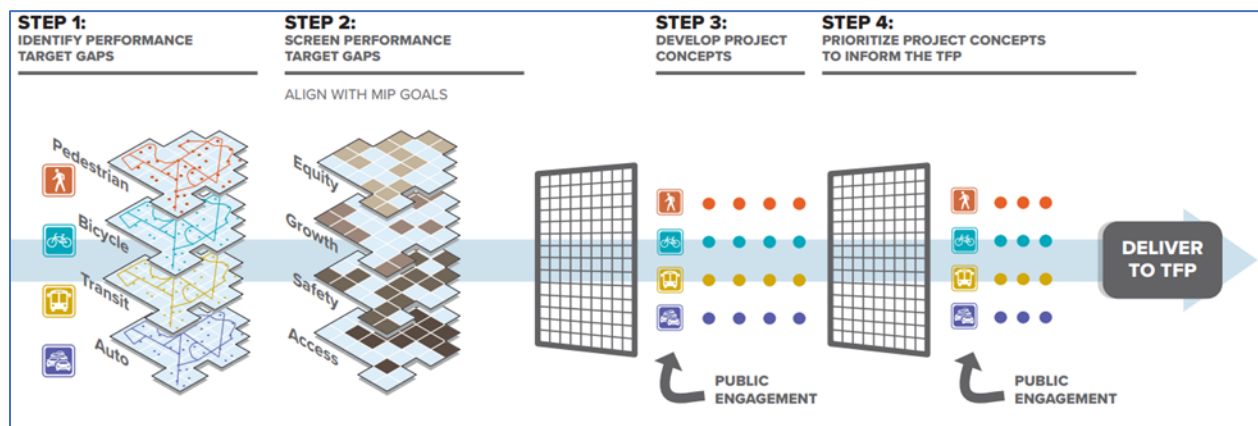


Diagram of the Project Identification and Prioritization Process

Step 1. Identify Performance Target Gaps

Identify where the documented performance of the transportation network does not meet the adopted Performance Targets for each mode. Existing Performance Target gaps are documented in the Comprehensive Plan Periodic Update in the [Final Environmental Impact Statement](#) (February 1, 2024).

Step 2. Screen Performance Target Gaps relative to the MIP Goals

Screen and score the Performance Target gaps for alignment with the four MIP goals and determine appropriateness to move forward to develop project concepts. Identify the MIP goals that could be met by project concepts that would address each Performance Target gap. Prioritization would accrue to project concepts that meet multiple MIP goals.

Step 3. Develop Project Concepts

For the higher-scoring Performance Target gaps, this step identifies project concepts intended to improve modal performance while continuing to advance MIP goals. Factors such as environmental sustainability and livability are considered. Note that it may not always be possible to meet the Performance Target due to site constraints or other factors.

Step 4. Screen Project Concepts for Delivery to the Transportation Facilities Plan (TFP)

The MIP will inform the development of the TFP by identifying Performance Target gaps, screening the Performance Target gaps based on MIP goals, and developing a set of project concepts that are prioritized for each mode and that can be considered in each update of the TFP. The MIP will inform the TFP update by providing prioritized project concepts for each mode.

Focusing On Step 2. Screen Performance Target Gaps relative to the MIP Goals

Having documented the Performance Target gaps, Step 2 in the process involves prioritization relative to the MIP goals. For each mode, specific prioritization criteria apply. Below are the scoring criteria for the vehicle, bicycle and pedestrian modes. Note that there are no Transit

mode scoring criteria as the MIP is not anticipated to prepare specific project concepts to address transit network performance target gaps – these will be developed in collaboration with transit service providers.

Table 1: Relationship between MIP Goals and Pedestrian, Bicycle, and Vehicle Modes

MIP Goals ¹			
Support Growth	Improve Safety	Consider Equity ²	Improve Access and Mobility
Pedestrian	Pedestrian	Pedestrian	Pedestrian
Bicycle	Bicycle	Bicycle	Bicycle
Vehicle	Vehicle		Vehicle

Table 2: Scoring for MIP Goals for Pedestrian Mode







MIP Goal Score: Pedestrian Mode Sidewalk Gaps and Crossing Spacing Gaps on Arterials							
Growth Goal Score		Access/Mobility Goal Score (see MIP Figure 30)		Equity Goal Score (see Appendix E)		Safety Goal Score (see MIP Figure 28)	
PMA 3	1		2		1	HIN	4
PMA 2	2		4		2	Not-HIN	2
PMA 1	4	For gaps in PMA 3: Proximity to pedestrian destinations on					
		MIP Figure 30: school, park, library, community center, hospital, grocery store	+2		3		
		For gaps in PMA 3: Proximity to FTN stop	+1		4		
Supplemental Score – Pedestrian Mode							
Sidewalk missing both sides				+ 4			

Table 3: Scoring MIP Goals for Bicycle Mode







MIP Goal Score: Bicycle Mode LTS Gaps on Bicycle Network							
Growth Goal Score		Access/Mobility Goal Score		Equity Goal Score		Safety Goal Score	
PMA 3	1		2		1	HIN	4
PMA 2	2		4		2	Not-HIN	2
PMA 1	4				3		
					4		
Supplemental Score – Bicycle Mode							
Physical Gap on a Bicycle Network Corridor			Network Corridor		+ 2		
			Priority Bicycle Corridor		+ 4		

Table 4: Scoring MIP Goals for Vehicle Mode







MIP Goal Score: Vehicle Mode V/C Gaps and Corridor Travel Speed Gaps							
Growth Goal Score		Access/Mobility Goal Score		Equity Goal Score		Safety Goal Score	
PMA 1	1		-1		N/A	HIN	4
PMA 2	2		-2		N/A	Not-HIN	2
PMA 3	4	Vehicle mode Performance Target gaps in these areas are a lower a priority since Bellevue seeks to focus on expanding non-vehicle mode options in these areas.			N/A	Any vehicle mode Performance Target gap that, if addressed, will result in a wider road or higher speeds	0
					N/A		
Supplemental Score – Vehicle Mode							
V/C Performance Target Gap				Travel Speed Performance Target Gap			
< 10%		+ 1		< 10%		+ 1	
10%-20%		+ 2		10%-20%		+ 2	
20%-30%		+ 3		20%-30%		+ 3	
> 30%		+ 4		> 30%		+ 4	

Table 5: Accumulating Scores for MIP Goals

Example Scoring for Each Mode

Growth Goal Score	+	Access/ Mobility Score	+	Equity Score	+	Safety Score	+	Supplemental Score	=	Final Score
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MIP Performance Metrics

The Mobility Implementation Plan defines Performance Metrics for each mode as follows:

Vehicle Mode

- Volume/Capacity Ratio (V/C) at a System Intersection in the two-hour PM Peak period (4-6 PM).

A System Intersection is one that 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.

- Primary Vehicle Corridor Travel Speed in the PM Peak hour (the single busiest hour of the day).

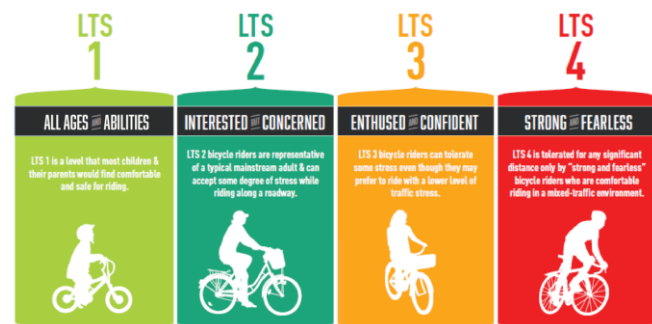
A Primary Vehicle Corridor has the following characteristics:

- 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).

Bicycle Mode

Level of traffic stress (LTS) on the bicycle network.

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.



Pedestrian Mode

- A sidewalk that is present on both sides of an arterial.
- Designated arterial crossing at intersections and mid-block locations.

Transit

- Transit Travel Time Ratio

Transit Travel Time Ratio is measured between five activity centers: Downtown, Overlake, Crossroads, Eastgate and Factoria. This metric is representative of point-to-point transit trips on frequent transit network routes (bus and light rail).

- Transit Stop Passenger Amenities

Amenities vary by type of transit stop/station and include weather protection, seating, paved bus door passenger zone, wayfinding, and bicycle parking.

MIP Performance Targets

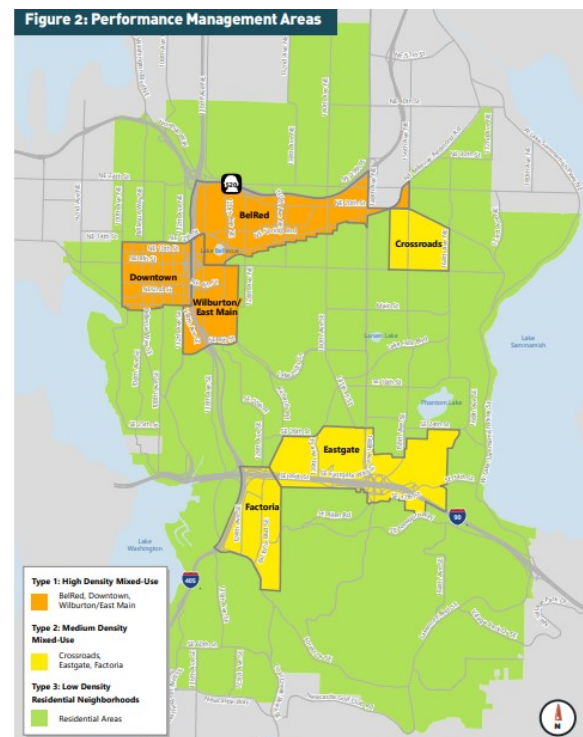
Expectations for the performance and user experience of the transportation network are expressed as “targets” to be achieved over time. Targets are related to the presence of intended facilities/infrastructure (pedestrian, bicycle, transit passenger amenities) and to the operations of the system (vehicle intersection v/c, vehicle travel speed, and transit travel time). Targets for facilities/infrastructure focus on completing the planned network infrastructure, while targets for operations relate to capacity and system performance.

MIP Performance Management Areas

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. PMAs also influence Performance Target gap prioritization, with the denser areas of the city given greater weight to pedestrian and bicycle Performance Target gaps and lower density areas given greater priority to vehicle Performance Target gaps.

- 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

Mode	Performance Target	
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 	
Bicycle	Bicycle network facilities (corridors and intersections) meet the intended LTS	
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 	
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
	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



Performance Target Gaps

The MIP defines a Performance Target gap for each mode as follows:

Vehicle Mode

- 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).

Bicycle Mode

A segment or corridor of the bicycle network in general, and the Bicycle Priority Network in particular that does not meet the Level of Traffic Stress (LTS) Performance Target.

Pedestrian Mode

- 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, including access to all types of transit stops.

Transit Mode

- Frequent transit network corridor between defined activity centers along which riding a bus would take more than twice as long as driving a car.
- Bus stop that does not provide the intended passenger amenities.

Identifying Performance Target Gaps - Comprehensive Plan Periodic Update FEIS

The Final Environmental Impact Statement (FEIS) for the Comprehensive Plan Periodic Update documents the existing and 2044 forecast performance – and the Performance Target gaps - for each mode relative to the Performance Targets adopted in the Mobility Implementation Plan. The FEIS analyzed existing conditions and two scenarios for 2044, Full Buildout and 2044 Land Use Forecast. This MIP work will focus on the existing conditions for which a Performance Target gap has been identified and on the 2044 Land Use Forecast to identify where investments may be needed to support growth.

The table below documents the System Intersections that do not currently (as of 2019) meet the Performance Target as documented in the FEIS. Note that there are two system intersections that do not already have an associated TFP project concept.

Existing System Intersection Gap				TFP Project	
N/S Street	E/W Street	Performance Management Area and Performance Target	Existing 2019 Base Year	TFP	TFP Description
148th Ave NE	NE 8th St	PMA 3: V/C = 0.85	0.99	TFP 263	This project will widen all four approaches to provide a second left turn pocket serving each direction.
148th Ave	Main St	PMA 3 V/C = 0.85	0.95	TFP 278	This project will improve intersection delay at 148th Ave SE/Main St. and access to and from the shopping center from 148th Avenue SE by adding a new traffic signal and a southbound left turn lane accessing the south driveway and a left turn lane accessing southbound 148th Avenue SE from the driveway.
148th Ave SE	Lk Hills Blvd	PMA 3 V/C = 0.85	0.97	TFP 279	This project will add a second westbound left turn pocket to increase the queuing space for this movement and to allow the eastbound and westbound through movements to run concurrently, reducing the overall intersection delay.
148th Ave SE	SE 16th St	PMA 3 V/C = 0.85	0.88		
Lakemont Blvd SE	SE Newport Wy	PMA 3 V/C = 0.85	0.86	TFP 288	Un-split the southbound and northbound traffic signal phasing by changing the center lane on the southbound approach to a dedicated left turn lane instead of a shared left/through lane, subject to further analysis.
150th Ave SE	SE Eastgate Wy	PMA 2 V/C = 0.90	1.01	TFP 253	This project will add a second northbound left turn lane with a short westbound receiving lane and a third southbound through lane starting north of Eastgate Way and extending across the I-90 overpass. The southbound left turn lane will also be extended.
Lk Hills Connector	SE 7th Pl	PMA 1 V/C = 1.00	1.03	TFP 276	This project will add a second northbound left turn pocket to increase the queuing space for this movement and will convert the existing dedicated eastbound left turn lane to a westbound through lane to receive traffic from the new northbound left turn pocket.
118th Ave SE	SE 8th St	PMA 1 V/C = 1.00	1.02	TFP 274	This project will widen the intersection to add a second southbound left turn lane and dedicated space for bicycles in the northbound and southbound directions.
115th Pl NE	Northup Wy	PMA 3 V/C = 0.85	0.95		

Prioritizing Performance Target Gaps for System Intersections

Staff applied the MIP prioritization framework to the list of intersections above; the results are shown in the table below. To understand how the scoring works, below is the scoring for the Performance Target gap at the intersection of 148th Ave NE and NE 8th Street:

- **Growth Goal Score:** This intersection is in PMA 3, so it gets a growth goal score of 4, as vehicle Performance Target gaps in the lower density PMA 3 receive a higher prioritization as other modes are less available to access destinations.
- **Access/Mobility Goal Score:** This intersection is not in an area where Bellevue is seeking to aggressively expand non-vehicle access capacity. Therefore, the intersection gets a neutral score of zero.
- **Equity Goal Score:** As noted in the MIP Implementation Guide, vehicle Performance Target Gaps are not prioritized relative to equity since vehicle access is not as critical to transportation disadvantaged populations relative to pedestrian and bicycle access.
- **Safety Goal Score:** This intersection is on the city's High Injury Network, so it is initially eligible for a score of 4. However, the proposed TFP project would require that the intersection be widened, which increases the exposure for pedestrians and bicycles crossing the street and might also increase vehicle speeds, so the score is zero.
- **Supplemental Score:** The Performance Target gap at this intersection is 16% above the Target. Therefore, the intersection receives a score of 2.

Existing System Intersection Gap				MIP Prioritization Score				
N/S Street	E/W Street	Performance Management Area and Performance Target	Existing 2019 Base Year	Growth Goal Score	Access/Mobility Goal Score	Safety Goal Score	Supplemental Score	Composite Score
148th Ave NE	NE 8th St	PMA 3: V/C = 0.85	0.99	4	0	0	2	6
148th Ave	Main St	PMA 3 V/C = 0.85	0.95	4	0	4	2	10
148th Ave SE	Lk Hills Blvd	PMA 3 V/C = 0.85	0.97	4	0	0	2	6
148th Ave SE	SE 16th St	PMA 3 V/C = 0.85	0.88	4	0	0	1	5
Lakemont Blvd SE	SE Newport Wy	PMA 3 V/C = 0.85	0.86	4	0	4	1	9
150th Ave SE	SE Eastgate Wy	PMA 2 V/C = 0.90	1.01	2	-1	0	2	3
Lk Hills Connector	SE 7th Pl	PMA 1 V/C = 1.00	1.03	1	-2	4	1	4
118th Ave SE	SE 8th St	PMA 1 V/C = 1.00	1.02	1	-2	4	1	4

Existing System Intersection Gap				MIP Prioritization Score				
N/S Street	E/W Street	Performance Management Area and Performance Target	Existing 2019 Base Year	Growth Goal Score	Access/Mobility Goal Score	Safety Goal Score	Supplemental Score	Composite Score
115th Pl NE	Northup Wy	PMA 3 V/C = 0.85	0.95	4	0	0	2	6

Intersection Performance Target Gap Scoring Summary

The intersection Performance Target gap scoring ends up clustering into three groups or tiers:

Higher scoring (score of 7 through 10):

- 148th Ave and Main St
- Lakemont Blvd SE and SE Newport Way

Mid scoring (score of 5 or 6):

- 148th Ave NE and NE 8th St
- 148th Ave SE and Lake Hills Blvd
- 148th Ave SE and SE 16th St
- 115th Pl NE and Northup Way

Lower scoring (score of 3 or 4):

- 150th Ave SE and SE Eastgate Way
- Lake Hills Connector and SE 7th Place
- 118th Ave SE and SE 8th St

It is worth noting that the higher scoring projects are in PMA 3 and receive a positive safety score because they are on the High Injury Network (HIN) (see p. 57, 58 in MIP) and do not widen the roadway without also providing some potential benefit for vulnerable road users (pedestrians and bicyclists). The lower scoring projects are all in either PMA 1 or 2, which is consistent with the city's intent to balance investments in vehicle capacity relative to investments to expand capacity for other modes. The lower prioritization rating is not a suggestion that these project concepts should be excluded from the TFP, but that they might need to be deferred in favor of higher priority project concepts if funding is limited.

Project Concept Considerations

The TFP identifies a project concept to address the V/C Performance Target gaps at seven of the nine intersections. For the purposes of the April 11 Transportation Commission meeting, we have also identified project concepts at the other two intersections:

- 148th Ave SE and SE 16th St: Widen the east curb line of 148th Ave SE from approximately 300 feet south of SE 16th St to Lake Hills Blvd

- 116th Ave NE and Northup Way: Widen southbound approach to add a dedicated right turn lane

With project concepts identified for each of the System Intersections that have a Performance Target gap, consideration must be given to whether the project concept is feasible to implement from the perspective of environmental impact, cost, land use impact, and impact to other modes. We will bring this question back to the Transportation Commission at later meetings, but we wanted to introduce the concept as part of this memo.

NEXT STEPS

During the next several study sessions, the Transportation Commission will be asked to work through the Performance Target gaps for the vehicle mode, the bicycle mode and the pedestrian mode to apply the scoring criteria and “deliver” a prioritized project list to inform the update of the Transportation Facilities Plan.

Staff will provide initial scoring and preliminary planning-level cost estimates for project concepts.

ATTACHMENT

1. Linked here: [Mobility Implementation Plan](#)