



CITY OF MILWAUKIE

AGENDA

June 25, 2024

PLANNING COMMISSION

milwaukieoregon.gov

Hybrid Meeting Format: The Planning Commission will hold this meeting both in person at City Hall and through Zoom video. The public is invited to watch the meeting in person at City Hall, online through the City of Milwaukie YouTube page (https://www.youtube.com/channel/UCRFbfaq3OnDWLQKSB_m9cAw), or on Comcast Channel 30 within city limits.

If you wish to provide comments, the city encourages written comments via email at planning@milwaukieoregon.gov. Written comments should be submitted before the Planning Commission meeting begins to ensure that they can be provided to the Planning Commissioners ahead of time. To speak during the meeting, visit the meeting webpage (<https://www.milwaukieoregon.gov/bc-pc/planning-commission-122>) and follow the Zoom webinar login instructions.

1.0 Call to Order – Procedural Matters — 6:30 PM

1.1 Native Lands Acknowledgment

2.0 Planning Commission Minutes – Motion Needed

2.1 None.

3.0 Information Items

4.0 Audience Participation — This is an opportunity for the public to comment on any item not on the agenda

5.0 Community Involvement Advisory Committee (CIAC)

6.0 Work Session Items

6.1 Draft Transportation System Plan (TSP) Goals and Policies, Performance Measures, and Livable Streets

Summary: Review of the revised Draft TSP Goals & Policies Memorandum, Draft Analysis Methodology and Performance Measures Memorandum, and Draft Livable Streets Analysis and Recommendations Memorandum

Staff: Planning Manager, Laura Weigel
Associate Planner, Ryan Dyar

7.0 Planning Department Other Business/Updates

8.0 Forecast for Future Meetings

July 9, 2024

1. Hearing Item: Clackamas County Water Environment Services (WES) Addition (DR-2024-002)
2. Work Session Item: Citizen Involvement Advisory Committee (CIAC) *Tentative*
3. Work Session Item: Natural Resources Code Amendments (Part 2, Water Quality Resource (WQR) Code) *Tentative*

July 23, 2024 *Nothing Scheduled.*

Milwaukie Planning Commission Statement

The Planning Commission serves as an advisory body to, and a resource for, the City Council in land use matters. In this capacity, the mission of the Planning Commission is to articulate the Community's values and commitment to socially and environmentally responsible uses of its resources as reflected in the Comprehensive Plan.

1. **PROCEDURAL MATTERS.** If you wish to register to provide spoken comment at this meeting or for background information on agenda items please send an email to planning@milwaukieoregon.gov.
2. **PLANNING COMMISSION and CITY COUNCIL MINUTES.** City Council and Planning Commission minutes can be found on the City website at www.milwaukieoregon.gov/meetings.
3. **FORECAST FOR FUTURE MEETINGS.** These items are tentatively scheduled but may be rescheduled prior to the meeting date. Please contact staff with any questions you may have.
4. **TIME LIMIT POLICY.** The Commission intends to end each meeting by 10:00pm. The Planning Commission will pause discussion of agenda items at 9:45pm to discuss whether to continue an agenda item to a future date or finish the item.

Public Hearing Procedure

Those who wish to testify should attend the Zoom meeting posted on the city website, state their name and city of residence for the record, and remain available until the Chairperson has asked if there are any questions from the Commissioners. Speakers are asked to submit their contact information to staff via email so they may establish standing.

1. **STAFF REPORT.** Each hearing starts with a brief review of the staff report by staff. The report lists the criteria for the land use action being considered, as well as a recommended decision with reasons for that recommendation.
2. **CORRESPONDENCE.** Staff will report any verbal or written correspondence that has been received since the Commission was presented with its meeting packet.
3. **APPLICANT'S PRESENTATION.**
4. **PUBLIC TESTIMONY.** Comments or questions from interested persons and testimony from those in support or opposition of the application.
5. **QUESTIONS FROM COMMISSIONERS.** The commission will have the opportunity to ask for clarification from staff, the applicant, or those who have already testified.
6. **REBUTTAL TESTIMONY FROM APPLICANT.** After all public testimony, the commission will take rebuttal testimony from the applicant.
7. **CLOSING OF PUBLIC HEARING.** The Chairperson will close the public portion of the hearing. The Commission will then enter into deliberation. From this point in the hearing the Commission will not receive any additional testimony from the audience but may ask questions of anyone who has testified.
8. **COMMISSION DISCUSSION AND ACTION.** It is the Commission's intention to make a decision this evening on each issue on the agenda. Planning Commission decisions may be appealed to the City Council. If you wish to appeal a decision, please contact the Planning Department for information on the procedures and fees involved.
9. **MEETING CONTINUANCE.** Prior to the close of the first public hearing, any person may request an opportunity to present additional information at another time. If there is such a request, the Planning Commission will either continue the public hearing to a date certain or leave the record open for at least seven days for additional written evidence, argument, or testimony. The Planning Commission may ask the applicant to consider granting an extension of the 120-day time period for making a decision if a delay in making a decision could impact the ability of the City to take final action on the application, including resolution of all local appeals.

Meeting Accessibility Services and Americans with Disabilities Act (ADA) Notice

The city is committed to providing equal access to public meetings. To request listening and mobility assistance services contact the Office of the City Recorder at least 48 hours before the meeting by email at ocr@milwaukieoregon.gov or phone at 503-786-7502. To request Spanish language translation services email espanol@milwaukieoregon.gov at least 48 hours before the meeting. Staff will do their best to respond in a timely manner and to accommodate requests. Most Council meetings are broadcast live on the city's YouTube channel and Comcast Channel 30 in city limits.

Servicios de Accesibilidad para Reuniones y Aviso de la Ley de Estadounidenses con Discapacidades (ADA)

La ciudad se compromete a proporcionar igualdad de acceso para reuniones públicas. Para solicitar servicios de asistencia auditiva y de movilidad, favor de comunicarse a la Oficina del Registro de la Ciudad con un mínimo de 48 horas antes de la reunión por correo electrónico a ocr@milwaukieoregon.gov o llame al 503-786-7502. Para solicitar servicios de traducción al español, envíe un correo electrónico a espanol@milwaukieoregon.gov al menos 48 horas antes de la reunión. El personal hará todo lo posible para responder de manera oportuna y atender las solicitudes. La mayoría de las reuniones del Consejo de la Ciudad se transmiten en vivo en el canal de YouTube de la ciudad y el Canal 30 de Comcast dentro de los límites de la ciudad.

Milwaukie Planning Commission:

Jacob Sherman, Chair
Joshua Freeman, Vice Chair
Aaron Carpenter
Joseph Edge
Ernestina Fuenmayor
Will Mulhern

Planning Department Staff:

Laura Weigel, Planning Manager
Brett Kever, Senior Planner
Vera Koliass, Senior Planner
Adam Heroux, Associate Planner
Ryan Dyar, Associate Planner
Petra Johnson, Administrative Specialist II



CITY OF MILWAUKIE

To: Planning Commission

From: Laura Weigel, Planning Manager
Ryan Dyar, Associate Planner
Jen Garbely, City Engineer

Date: June 14, 2024, for June 25, 2024, Work Session

Subject: Transportation System Plan Project Update

ACTION REQUESTED

Review and provide feedback on the revised Vision, Goals and Policies Memorandum.¹ Commissioners should bring specific language amendments and additional policies to the meeting for discussion.

Commissioners will also review and provide feedback on the Draft Analysis Methodology and Performance Measures Memorandum, and the Draft Livable Streets Analysis and Recommendations Memorandum.

This staff report provides additional context regarding how the TSP goals and policies influence other aspects of the project, including the selection of system performance standards and project prioritization.

BACKGROUND INFORMATION

[February 7, 2023](#): Council approved the appointment of the TSP Advisory Committee, including a Planning Commission representative, Joseph Edge.

[June 20, 2023](#): Council authorized an intergovernmental agreement (IGA) with the Oregon Department of Transportation (ODOT) to update the city's Transportation System Plan (TSP) through an in-kind grant award from the transportation and growth management program.

[February 27, 2024](#): Staff provided the Commission with a TSP update including an overview of the timeline, Plan and Policy Framework, Community Profile, Engagement Plan, and the Financial Forecast.

¹ Staff have incorporated the Commission's feedback that was provided during the work session held on May 14, 2024.

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[May 14, 2024](#): Staff provided the Commission with a draft version of the TSP goals and policies. The Commission provided substantial feedback on the draft document.

ANALYSIS

Oregon's Transportation Planning Rule (TPR), which implements [Oregon's Statewide Planning Goal 12: Transportation](#) and is codified in Oregon Administrative Rule (OAR) Chapter 660, Division 12, establishes requirements for jurisdictions updating or creating a Transportation System Plan (TSP). The [Climate Friendly Equitable Communities \(CFEC\)](#) rulemaking process amended the TPR in 2022, establishing a new model for TSP development aimed at reducing transportation-related greenhouse gas (GHG) emissions and promoting more equitable planning processes and outcomes for underserved populations. Central to this model is the integration and alignment of community goals, performance standards, and a project prioritization framework, outlined below.

Goals and Policies, Performance Standards, and Project Prioritization

A key component of a TSP update includes developing the goals and policies that will be adopted in Chapter 13, Transportation, of the [City's Comprehensive Plan](#).² Collectively, the goals and policies articulate the community's desired future transportation system. Goal and policy setting is not, however, a siloed phase of TSP development but is integral to the entire planning process. Notably, the goals and policies influence the adoption of system performance measures and project evaluation criteria.

1. **Performance Standards:** As part of the performance-based approach to TSP development, jurisdictions are now required to adopt two or more performance standards ([OAR 660-012-0215](#)). A performance standard is a quantifiable indicator used to measure progress towards the goals and policies established in the TSP. Performance standards include both a specific measurement concept and a threshold target. An example of a specific measurement is Bicycle Level of Traffic Stress (BLTS); a BLTS threshold might be that 75% of all collector streets in the city have a BLTS level 1 or 2 by the year 2030.³ Performance standards are used to evaluate potential TSP projects and development proposals. They set the stage for identifying system deficiencies, and serve as accountability mechanisms to ensure local investments further state and regional performance measures related to GHG reduction, equity, safety, and connectivity. Historically, standards have mostly focused on motor vehicle congestion, but the new rules require at least one performance standard to support reducing reliance on single-occupancy vehicles.

² The Comprehensive Plan was adopted in 2020. Chapter 13: Transportation was not updated as part of this process. While the Comprehensive Plan includes many goals and policies that touch on transportation, the city opted to update the goals and policies in Chapter 13 through the TSP process.

³ Commissioners can read more about the specific methodology for determining BLTS in the ODOT's [Multimodal Analysis and Procedures Manual](#).

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The Analysis Methodology and Performance Measures Memorandum (Attachment 3) includes a list of performance standards commonly used in transportation planning. There is no limit on how many performance standards a jurisdiction may adopt, but each requires specific data collection, technical know-how, and staff capacity. Considering these constraints, the city's transportation consultant, Kittleson and Associates, Inc., has recommended adopting four performance standards that align with the city's draft goals and policies: Bicycle Level of Traffic Stress, Pedestrian Level of Traffic Stress, System Completeness, and Accessibility to Transit. This recommendation, along with additional details about performance standard requirements, is included in Attachment 3.

2. **Evaluation Framework:** [OAR 660-012-0155](#) requires jurisdictions to establish a prioritization framework for decision-making regarding transportation facilities and services. The framework must factor in various criteria such as GHG reduction, equitable outcomes for underserved populations, and economic development, while also integrating local values by adding community-specific evaluation criteria and weighting them to align with the goals and policies expressed in the plan.

This framework is used to establish both unconstrained and financially constrained lists of system improvements. The unconstrained list includes all potential system improvement projects, while the financially constrained list includes only those projects for which funding is available based on projected revenues, expenditures, and planning-level cost estimates.⁴ Additionally, the rules establish evaluation criteria and require project prioritization for each modal element (see OAR 660-012-0520, -0620, -0720, and -0820).

A sample evaluation framework is included as Attachment 5. It is a preliminary *example* (not draft) of how the city's goals and policies might be translated into an evaluation framework and does not include recent feedback on the goals and policies from the Planning Commission on May 14, 2024.

The Financially Constrained List and Project Implementation

The TSP is one of many system (formally referred to as "master") plans the city must produce to comply with state and federal requirements.⁵ Each plan analyzes existing conditions, identifies system deficiencies, and establishes priority system improvements. While funding is considered in each plan, funds are not allocated through the system planning process. Instead, top prioritized improvements from each plan often compete for discretionary funding (i.e., funds

⁴ Commissioners can refer to the [Financial Forecast Memo](#) for information about the availability of funds for capital improvements.

⁵ Additional City of Milwaukie system (master) planning documents can be found on the city's [website](#).

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that have not been earmarked for a specific purpose) in the [capital improvement planning process](#), which occurs every two years in alignment with the city's biennial budgeting process.

Although the TSP's financially constrained list represents the highest priority transportation projects for which non-restricted capital funds are available, it does not guarantee implementation. The capital improvement plan assembly is a dynamic process involving many factors, and new considerations, such as grant opportunities or coordination with other agency projects, can shift project priorities. Consequently, lower priority projects in a system plan may get built before higher priority projects. Despite this, the list is consequential as it is a required component of a TSP (OAR 660-012-0100), and inclusion makes the project eligible for inclusion in the [Regional Transportation System Plan](#) and for grant funding opportunities administered by partner agencies, such as Metro and ODOT.

Livable Streets Analysis

Separate from the above discussion, the city had its consultant review various existing city documents that provide guidance and establish standards for roadway design, including the existing TSP, the Public Works Standards, and Municipal Code. The objective of this review was to check existing standards for consistency with best practice related to creating street systems that are livable, respond to roadway constraints and environmental factors, and designed to accommodate various users and transportation modes safely and comfortably. The findings and recommendations can be reviewed in full in Attachment 4, but generally, the review found that the city's existing standards conform to best practices.

NEXT STEPS

Staff will incorporate the Commission's revisions to the goals and policies and provide an updated version for City Council to review, along with any feedback the Commission has on the draft performance standards and livable streets analysis, on August 6th.

Over the summer, staff will work with the project consultant team to analyze existing conditions and system needs and gaps. These findings will be presented to the Technical and Advisory Committees in mid-August. The Planning Commission will also have an opportunity to review this analysis sometime in late summer/early fall.

ATTACHMENTS

1. Draft Vision, Goals, and Policies Memorandum (Strikethrough Version)
2. Draft Vision, Goals, and Policies Memorandum (Clean Version)
3. Draft Analysis Methodology and Performance Measures Memorandum
4. Draft Livable Streets Analysis and Recommendation
5. Sample Project Evaluation Framework

Goal	Goal Statement	Policy #	Policies
<u>Equity</u> <u>Equitable</u> <u>Transportation</u>	New investments in Milwaukie’s transportation system are distributed fairly to reduce or eliminate transportation-related barriers and disparities, especially those experienced by marginalized or underserved populations.	1	Prioritize transportation improvements that improve access, safety, and connectivity to/from/for underserved population groups, lower-income neighborhoods, and transportation disadvantaged groups.
		2	Explore and utilize grants and other innovative funding sources to fill <u>Fill in sidewalk gaps and construct Americans with Disabilities Act (ADA) improvements in support of the Safe Routes to School Program</u> <u>Improve existing transportation facilities to meet Americans with Disabilities Act (ADA) standards.</u>
		3	Prevent and mitigate human exposure to transportation-related pollution along major transportation facilities, especially along facilities that are located near underserved populations.
<u>Climate Friendly</u> <u>Climate</u> <u>Mitigation and Adaptation</u>	Provide <u>Create</u> a transportation system that can help <u>reduces greenhouse gas pollution and positively impact the environment and is responsive to a changing climate.</u>	1	Support the transition to low and zero-emission vehicles and other emerging sustainable modes of transportation through infrastructure investments, education, and regulations.
		2	Establish land use patterns that reduce vehicle miles traveled (VMT) and greenhouse gas emissions.
		3	Prioritize transportation improvements that preserve natural resources such as trees, streams, wetlands, wildlife corridors, and endangered species.
		4 <u>3</u>	Explore establishing targets for transportation mode splits.
		5 <u>4</u>	Design and maintain transportation systems and facilities to ensure they are resilient and adaptive to a changing climate based on the best available science and technology.
<u>Healthy Environment</u>	Create a transportation system that does not further degrade, and when possible, enhances the community’s natural resources, such as clean air, clean water, and wildlife habitat.	1 <u>1</u>	Prioritize transportation improvements that preserve natural resources such as trees, streams, wetlands, wildlife corridors, and endangered species.
		2 <u>2</u>	Consider best practices for wildlife crossings where transportation facilities intersect with waterbodies and habitat areas.
		3 <u>3</u>	Minimize the impacts the transportation system has on the environment through the use of green infrastructure.
		4 <u>4</u>	Evaluate and mitigate how transportation facilities negatively impact environmental quality and human health outcomes.
<u>Public Transportation</u> <u>Transit</u> <u>Forward</u>	Improve public transit service to, from, and within Milwaukie.	1	Support TriMet and other transit providers in enhancing transit services and amenities, especially along congested corridors in low-income communities, and in underserved population centers.
		2	Advocate for prioritized and additional frequent transit service in areas that lack connectivity and have the potential for new growth.
		3	Work with transit agencies to identify and eliminate existing transit deficiencies and increase the accessibility of transit services to all potential users.
		4	Work with transit providers to ensure all Neighborhood transportation Hubs have adequate transit service.
		5	Coordinate <u>Support with</u> TriMet’s <u>efforts</u> to improve the safety, accessibility, and maintenance of transit stops <u>and services</u> in the city.
		6 <u>6</u>	Work to ensure that employment centers are well served by public transportation.
		7 <u>7</u>	Advocate for increased high-capacity transit options in Milwaukie and the larger region.

Goal	Goal Statement	Policy #	Policies
Mobility, Accessibility, and Connectivity	Provide an efficient and well-connected multimodal transportation system that works to connect the community to key destinations.	1	Improve existing and create new diverse, multimodal connections between neighborhoods, schools, parks, transit stops, employment centers, Neighborhood Hubs, and other key destinations.
		2	Balance <u>Prioritize</u> local connectivity and safety needs with <u>while accommodating</u> regional mobility needs.
		3	Prioritize closing gaps in the existing pedestrian and bicycle network.
		4	Improve existing transportation facilities to meet Americans with Disabilities Act (ADA) standards.
		4	Minimize the barrier effect of large transportation facilities on connectivity and accessibility for all modes by improving east-west connectivity across Highway 224 to downtown, across McLoughlin to the Willamette River and western neighborhoods, <u>across railroad facilities</u> , and across the river.
		5	Manage the right-of-way to ensure street design standards equitably and safely allocate or share space for all modes of transportation, including pedestrians, bicycles, rollers, and transit.
		6	Increase street grid connectivity to reduce out-of-direction travel and prevent neighborhoods with limited ingress and egress.
		7	Minimize cut-through traffic on local streets.
		98	<u>Explore adopting a functional classification system for all modes of travel.</u>
		10-9	<u>Improve the comfort of walking, cycling, and rolling across Highway 224 and McLoughlin Blvd by slowing traffic.</u>
Active, Healthy, Transportation Choices	Establish and/or complete a network of multimodal facilities that make walking, biking, and rolling an attractive, comfortable, healthy, and convenient choice for people of all ages and abilities.	1	Provide <u>Improve</u> and maintain walking, biking, and rolling access to key destinations such as Neighborhood Hubs, public spaces, schools, parks, commercial centers, industrial areas, transit routes/stops/centers, and recreational opportunities.
		2	Expand and improve wayfinding for active modes of travel to guide people to the safest and most efficient ways to actively navigate the transportation system.
		3	Identify and prioritize projects that close gaps in the existing active transportation network and support a street grid that provides options for transit, pedestrians, and bicyclists.
		4	Implement transportation demand management strategies, such as incentivizing employers to encourage active transportation and transit.
		5	Support the creation of valuable public and private space that is first-and-foremost designed for people, not automobiles, that prioritizes and enhances the experience for people walking, biking, and rolling, and is safe for users of all ages and abilities.
		6	Improve connections between the city's multimodal network and the regional trail system to promote active transportation and recreational opportunities.
		7	Prioritize a complete, connected <u>neighborhood</u> greenway network for pedestrians, cyclists, and rollers.
		8	<u>Prioritize neighborhood greenways over other functional classifications.</u>

Goal	Goal Statement	Policy #	Policies
Coordination with Local, Regional, and State Partners	Foster and maintain relationships with public and private partners in the common interest of enhancing the city's transportation network.	1	Advocate for city priorities while coordinating city projects, policies, development actions, and mobility targets with partner agencies.
		2	Coordinate with emergency service providers to design streets to accommodate emergency service vehicles while ensuring city streets support active transportation.
		3	Ensure consistency with federal, state, regional, and local planning rules, regulations, and standards.
		4	Work with regional partners to build support for the improvement of regional connections for all modes.
		5	Collaborate with other agencies to efficiently fund transportation improvements and programs.
		6	<u>Advocate for low-stress pedestrian and cyclist crossings across Highway 224, McLoughlin Blvd, and railroad crossings.</u>
Resiliency Emergency Preparedness	Develop a multimodal transportation system that provides travel options during normal conditions, natural disasters, or emergencies.	1	Identify transportation improvements that increase the diversity and number of travel routes between key destinations
		2	Design and maintain transportation systems and facilities to ensure that they are sustainable and resilient and utilize the best available science and technology.
		2	Coordinate with the Regional Disaster Preparedness Organization, Metro, and Clackamas County to improve designated emergency routes to aid in responding to natural disasters or weather-related events for all modes of transportation.
		3	Require facilities in the <u>FEMA-designated special flood hazard area 100-floodplain</u> be designed for resiliency.
Fiscal Stewardship and System Management	Make the most of transportation resources by leveraging available funding opportunities, preserve existing infrastructure, and reduce system maintenance costs.	1	Identify diverse and stable funding sources, <u>including grant opportunities</u> , to implement multimodal transportation improvement projects.
		2	Improve the efficiency of the existing transportation network before adding <u>additional vehicular travel lanes, capacity.</u>
		3	Invest in the maintenance of the transportation system.
		4	Utilize Identify low cost, quick-to-implement solutions to address identified transportation issues and monitor the results of those solutions.
		4	<u>Utilize safety and engineering best practices to identify low-cost, quick-to-implement, and effective treatments that can be implemented systematically in shorter timeframes than large capital projects.</u>
		5	Require that new development citywide improves the quality and connectivity of the transportation system proportionate to its impacts.
		6	Account for rapidly changing technologies such as autonomous vehicles and other intelligent transportation systems while managing the transportation system.
7	Identify opportunities to make transportation investments that complement and leverage other public and private capital investments.		

Goal	Goal Statement	Policy #	Policies
Economic Vitality	Develop a transportation system that supports and facilitates economic activity through the efficient movement of people, goods, and services.	1	Identify new projects and improve the existing transportation infrastructure throughout the city that facilitates greater economic development, within commercial and industrial areas the Urban Renewal Area, Neighborhood Hubs, North Milwaukie Innovation Area, the Business Industrial area, and other potential areas.
		2	Build low stress multimodal connections to and through designated Neighborhood Hubs and Milwaukie's 2040 Town Center to support business activity.
		3	Ensure a safe and efficient freight system that facilitates the movements of goods to, from, and through Milwaukie, the region, and the state while minimizing conflicts with other transportation modes and impacts to surrounding areas.
		4	Partner with Metro and TriMet to increase transit service, particularly to underserved employment areas.
		5	Coordinate with regional rail providers to preserve rail freight service to businesses that depend on railroad service.
		6	Plan for light vehicle and human powered goods delivery throughout the city.
Parking <u>Management</u>	Reduce land used for parking to achieve local, state and regional parking goals while also managing parking impacts.	1	Promote the conversion of existing underused private and public parking areas to other uses.
		2	Facilitate shared parking agreements.
		3	Employ parking management measures as needed to address the impacts of new infill development.
		4	Develop parking management plans when warranted for major employment districts, downtown and key destinations.
		5	Ensure bicycle and micro-mobility parking is provided and unobstructed in and between neighborhoods, schools, parks, transit facilities, employment centers, Neighborhood Hubs, and other key destinations.
		6	Reduce the negative environmental and human health impacts of large parking lots, such as degradation of water quality, the heat island effect, and reduced pedestrian connectivity and safety.
<u>Safety</u> Safe System	Improve the safety and comfort of the multimodal transportation network.	1	Coordinate with Advocate for ODOT and Clackamas County to create safe and comfortable pedestrian and bicycle movement on State/County-owned and operated facilities, especially Highway 224, McLoughlin Boulevard, and Johnson Creek Boulevard.
		2	Prioritize the safety of vulnerable system users over on-street parking convenience and when improving the public right of way.
		3	Improve safety for more vulnerable system users, including pedestrians, bicyclists, transit users, rollers and those who need special accommodations under the Americans with Disabilities Act.
		4	Prioritize sidewalk and bikeway improvements that provide safe access to/from schools, parks, neighborhood hubs, activity centers, transit centers/stops, and Downtown Milwaukie.
		5	Coordinate with local and regional agency partners to develop street design standards that equitably balance the needs of emergency vehicles, freight vehicles, and multimodal users.
		6	Improve circulation around schools to minimize pedestrian, automobile, and cyclist conflicts.
		7	Monitor the system to identify, prioritize and mitigate safety issues at high crash locations for all modes to move the City toward zero traffic deaths or serious injuries on the roadway network. Realize zero traffic deaths or serious injuries on the roadway network.
		8	Monitor the system to identify, prioritize, and mitigate safety issues at high crash locations for all modes.
		9	Maintain a neighborhood traffic management program to address issues of excessive speeding and manage the use of the public right-of-way on local residential streets.
		10	Reduce speeds systemwide to improve safety.
		11	Implement educational campaigns to increase safety awareness, especially near high crash locations, along Safe Routes to Schools school routes, and Neighborhood Greenways.

Goal	Goal Statement	Policy #	Policies
Equitable Transportation	New investments in Milwaukie’s transportation system are distributed fairly to reduce or eliminate transportation-related barriers and disparities, especially those experienced by marginalized or underserved populations.	1	Prioritize transportation improvements that improve access, safety, and connectivity to/from/for underserved population groups, lower-income neighborhoods, and transportation disadvantaged groups.
		2	Improve existing transportation facilities to meet Americans with Disabilities Act (ADA) standards.
		3	Prevent and mitigate human exposure to transportation-related pollution along major transportation facilities, especially along facilities that are located near underserved populations.
Climate Mitigation and Adaptation	Create a transportation system that reduces greenhouse gas pollution and is responsive to a changing climate.	1	Support the transition to low and zero-emission vehicles and other emerging sustainable modes of transportation through infrastructure investments, education, and regulations.
		2	Establish land use patterns that reduce vehicle miles traveled (VMT) and greenhouse gas emissions.
		3	Explore establishing targets for transportation mode splits.
		4	Design and maintain transportation systems and facilities to ensure they are resilient and adaptive to a changing climate based on the best available science and technology.
Healthy Environment	Create a transportation system that does not further degrade, and when possible, enhances the community’s natural resources, such as clean air, clean water, and wildlife habitat.	1	Prioritize transportation improvements that preserve natural resources such as trees, streams, wetlands, wildlife corridors, and endangered species.
		2	Consider best practices for wildlife crossings where transportation facilities intersect with waterbodies and habitat areas.
		3	Minimize the impacts the transportation system has on the environment through the use of green infrastructure.
		4	Evaluate and mitigate how transportation facilities negatively impact environmental quality and human health outcomes.
Public Transportation	Improve public transit service to, from, and within Milwaukie.	1	Support TriMet and other transit providers in enhancing transit services and amenities, especially along congested corridors in low-income communities, and in underserved population centers.
		2	Advocate for prioritized and additional frequent transit service in areas that lack connectivity and have the potential for new growth.
		3	Work with transit agencies to identify and eliminate existing transit deficiencies and increase the accessibility of transit services to all potential users.
		4	Work with transit providers to ensure all Neighborhood Hubs have adequate transit service.
		5	Support TriMet’s efforts to improve the safety, accessibility, and maintenance of transit stops and services in the city.
		6	Work to ensure that employment centers are well served by public transportation.
		7	Advocate for increased high-capacity transit options in Milwaukie and the larger region.

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		2	Prioritize local connectivity and safety needs while accommodating regional mobility needs.
		3	Prioritize closing gaps in the existing pedestrian and bicycle network.
		4	Minimize the barrier effect of large transportation facilities on connectivity and accessibility for all modes by improving east-west connectivity across Highway 224 to downtown, across McLoughlin to the Willamette River and western neighborhoods, across railroad facilities, and across the river.
		5	Manage the right-of-way to ensure street design standards equitably and safely allocate or share space for all modes of transportation, including pedestrians, bicycles, rollers, and transit.
		6	Increase street grid connectivity to reduce out-of-direction travel and prevent neighborhoods with limited ingress and egress.
		7	Minimize cut-through traffic on local streets.
		8	Explore adopting a functional classification system for all modes of travel.
		9	Improve the comfort of walking, cycling, and rolling across Highway 224 and McLoughlin Blvd by slowing traffic.
Active, Healthy, Transportation Choices	Establish and/or complete a network of multimodal facilities that make walking, biking, and rolling an attractive, comfortable, healthy, and convenient choice for people of all ages and abilities.	1	Improve and maintain walking, biking, and rolling access to key destinations such as Neighborhood Hubs, public spaces, schools, parks, commercial centers, industrial areas, transit routes/stops/centers, and recreational opportunities.
		2	Expand and improve wayfinding for active modes of travel to guide people to the safest and most efficient ways to actively navigate the transportation system.
		3	Identify and prioritize projects that close gaps in the existing active transportation network and support a street grid that provides options for transit, pedestrians, and bicyclists.
		4	Implement transportation demand management strategies, such as incentivizing employers to encourage active transportation and transit.
		5	Support the creation of valuable public and private space that is first-and-foremost designed for people, not automobiles, that prioritizes and enhances the experience for people walking, biking, and rolling, and is safe for users of all ages and abilities.
		6	Improve connections between the city's multimodal network and the regional trail system to promote active transportation and recreational opportunities.
		7	Prioritize a complete, connected neighborhood greenway network for pedestrians, cyclists, and rollers.
		8	Prioritize neighborhood greenways over other functional classifications.

Goal	Goal Statement	Policy #	Policies
Coordination with Local, Regional, and State Partners	Foster and maintain relationships with public and private partners in the common interest of enhancing the city's transportation network.	1	Advocate for city priorities while coordinating city projects, policies, development actions, and mobility targets with partner agencies.
		2	Coordinate with emergency service providers to design streets to accommodate emergency service vehicles while ensuring city streets support active transportation.
		3	Ensure consistency with federal, state, regional, and local planning rules, regulations, and standards.
		4	Work with regional partners to build support for the improvement of regional connections for all modes.
		5	Collaborate with other agencies to efficiently fund transportation improvements and programs.
		6	Advocate for low-stress pedestrian and cyclist crossings across Highway 224, McLoughlin Blvd, and railroad crossings.
Emergency Preparedness	Develop a multimodal transportation system that provides travel options during normal conditions, natural disasters, or emergencies.	1	Identify transportation improvements that increase the diversity and number of travel routes between key destinations
		2	Coordinate with the Regional Disaster Preparedness Organization, Metro, and Clackamas County to improve designated emergency routes to aid in responding to natural disasters or weather-related events for all modes of transportation.
		3	Require facilities in the FEMA-designated special flood hazard area be designed for resiliency.
Fiscal Stewardship and System Management	Make the most of transportation resources by leveraging available funding opportunities, preserve existing infrastructure, and reduce system maintenance costs.	1	Identify diverse and stable funding sources, including grant opportunities, to implement multimodal transportation improvement projects.
		2	Improve the efficiency of the existing transportation network before adding additional vehicular travel lanes..
		3	Invest in the maintenance of the transportation system.
		4	Utilize safety and engineering best practices to identify low-cost, quick-to-implement, and effective treatments that can be implemented systematically in shorter timeframes than large capital projects.
		5	Require that new development citywide improves the quality and connectivity of the transportation system proportionate to its impacts.
		6	Account for rapidly changing technologies such as autonomous vehicles and other intelligent transportation systems while managing the transportation system.
		7	Identify opportunities to make transportation investments that complement and leverage other public and private capital investments.

Goal	Goal Statement	Policy #	Policies
Economic Vitality	Develop a transportation system that supports and facilitates economic activity through the efficient movement of people, goods, and services.	1	Identify new projects and improve the existing transportation infrastructure throughout the city that facilitates greater economic development, within commercial and industrial areas.
		2	Build low stress multimodal connections to and through designated Neighborhood Hubs and Milwaukie's 2040 Town Center to support business activity.
		3	Ensure a safe and efficient freight system that facilitates the movements of goods to, from, and through Milwaukie, the region, and the state while minimizing conflicts with other transportation modes and impacts to surrounding areas.
		4	Partner with Metro and TriMet to increase transit service, particularly to underserved employment areas.
		5	Coordinate with regional rail providers to preserve rail freight service to businesses that depend on railroad service.
		6	Plan for light vehicle and human powered goods delivery throughout the city.
Parking Management	Reduce land used for parking to achieve local, state and regional parking goals while also managing parking impacts.	1	Promote the conversion of existing underused private and public parking areas to other uses.
		2	Facilitate shared parking agreements.
		3	Employ parking management measures as needed to address the impacts of new infill development.
		4	Develop parking management plans when warranted for major employment districts, downtown and key destinations.
		5	Ensure bicycle and micro-mobility parking is provided and unobstructed in and between neighborhoods, schools, parks, transit facilities, employment centers, Neighborhood Hubs, and other key destinations.
		6	Reduce the negative environmental and human health impacts of large parking lots, such as degradation of water quality, the heat island effect, and reduced pedestrian connectivity and safety.
Safe System	Improve the safety and comfort of the multimodal transportation network.	1	Advocate for ODOT and Clackamas County to create safe and comfortable pedestrian and bicycle movement on State/County-owned and operated facilities, especially Highway 224, McLoughlin Boulevard, and Johnson Creek Boulevard.
		2	Prioritize the safety of vulnerable system users over on-street parking convenience and when improving the public right of way.
		3	Improve safety for more vulnerable system users, including pedestrians, bicyclists, transit users, rollers and those who need special accommodations under the Americans with Disabilities Act.
		4	Prioritize sidewalk and bikeway improvements that provide safe access to/from schools, parks, neighborhood hubs, activity centers, transit centers/stops, and Downtown Milwaukie.
		5	Coordinate with local and regional agency partners to develop street design standards that equitably balance the needs of emergency vehicles, freight vehicles, and multimodal users.
		6	Improve circulation around schools to minimize pedestrian, automobile, and cyclist conflicts.
		7	Realize zero traffic deaths or serious injuries on the roadway network.
		8	Monitor the system to identify, prioritize, and mitigate safety issues at high crash locations for all modes.
		9	Maintain a neighborhood traffic management program to address issues of excessive speeding and manage the use of the public right-of-way on local residential streets.
		10	Reduce speeds systemwide to improve safety.
		11	Implement educational campaigns to increase safety awareness, especially near high crash locations, along school routes, and Neighborhood Greenways.

DRAFT ANALYSIS METHODOLOGY AND PERFORMANCE MEASURES MEMORANDUM

Date: May 9, 2024

To: TSP Advisory and Technical Committees

From: Kittelson & Associates, Inc.

Project: Milwaukie Transportation System Plan

Subject: Analysis Methodology and Performance Measures Memorandum

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INTRODUCTION

Oregon Administrative Rule (OAR) 660-012, also known as the Transportation Planning Rule (TPR) provides requirements for Oregon jurisdictions creating and updating transportation system plans. The TPR was updated by the Oregon Department of Land Conservation and Development (DLCD) in 2022 and 2023 to implement the Climate-Friendly and Equitable Communities (CFEC) program. The CFEC program expanded upon the previous transportation system planning requirements, placing new emphasis on equity-based engagement efforts, and requiring a new performance-based transportation planning approach to help Oregon achieve its climate pollution goals.

As a component in the development of a new Milwaukie Transportation System Plan (TSP), this memorandum contains the following:

- Summation of the new performance-based planning requirements contained within the new CFEC rules. In particular, the new rules require the selection of performance standards for selecting and prioritizing the various modal-based transportation planning projects.
- Preliminary recommendations for specific performance standards that should be considered as part of the new TSP.
- Documentation of the intended methodology and assumptions that will be used to complete the various technical components of the TSP. This information is summarized primarily for review purposes by partnering agencies prior to beginning the technical analysis in the upcoming Transportation System Conditions and Needs/Gaps Analysis. Given the mainly informative and technical nature of this information, the methodology and assumptions are included in *Appendix A*.

PERFORMANCE-BASED APPROACH TO TSP DEVELOPMENT

Recent changes to the (TPR) ([OAR 660-012](#)) require a performance-based approach to TSP development in metropolitan areas. The performance-based approach is rooted in the need to ensure local and regional transportation planning efforts are helping Oregon achieve its goals for reducing climate pollution. For Milwaukie’s new TSP, this includes:

1. Supporting the performance measures and targets from an approved regional scenario plan developed to address [OAR 660-044](#) greenhouse gas reduction target requirements. Cities, counties and Metro must report progress towards achieving the targets. ([-0900](#), [0905](#) and [-0910](#))
2. Identifying and applying local performance measures and/or evaluation criteria based on the jurisdiction’s goals and objectives to identify needs, evaluate alternatives, and develop the modal plans. These should include performance measures the jurisdiction is considering to adopt as performance standards.
3. Adopting two or more performance standards to apply to subsequent comprehensive plan amendments (including TSP updates) and land use decisions (including site development). These shall be supportive of achieving the performance targets from the approved regional scenario plan.
4. Prioritizing projects utilizing a framework that incorporates prioritization factors established in the TPR and considering local evaluation criteria. ([-0155](#), [-0520](#), [-0620](#), [-0720](#), [-0820](#))

Table 1 defines terms related to the performance-based approach for implementing the TPR. Following the table definition summary is a more detailed explanation of the terms and how they apply to the Milwaukie TSP update effort. Appendix B includes the OARs most frequently referenced in this memorandum.

Table 1. Definitions for the Performance-Based Approach to TSP Development

Term	Definition	Application to the Milwaukie TSP
Performance Measures	Indicators used to evaluate the performance of the transportation system under existing and future conditions. They can be used to establish baselines, forecast performance of the planned system, and to track progress over time.	Milwaukie will be required to report progress on performance measures identified in Metro’s <i>2023 Regional Transportation Plan under the Climate Smart Strategy performance measures</i> . The required performance measures can be supplemented with local performance measures and/or evaluation criteria based on TSP goals and objectives to inform development of the TSP.
Performance Targets	Future year targets set for performance measures to compare against reported annual progress.	Performance targets must be set by Milwaukie at levels that are reasonably likely to achieve the regional greenhouse gas (GHG) reduction targets. In Milwaukie’s case, the Metro 2023 <i>Regional Transportation Plan</i> has already identified targets for each of the selected performance measures. These are identified later in this memorandum (see Table 2).

Term	Definition	Application to the Milwaukie TSP
Performance Standards	An adopted performance standard based on performance measures used to develop the TSP and containing specified thresholds that are used to determine transportation deficiencies and to review comprehensive plan and land use regulation amendments.	Milwaukie must adopt at least two transportation performance standards. At least one transportation performance standard must support increasing transportation options and avoiding principal reliance on the automobile. Performance standards can be selected by the City, but shall be supportive of achieving the Metro performance measures and targets in the <i>Metro 2023 Regional Transportation Plan</i> .
Thresholds	Performance level set for a Performance Standard to determine adequacy and if the standard is met.	Thresholds can be set for different facility types, location, or other factors.
Evaluation Criteria	Used to compare alternatives, select and prioritize projects	Milwaukie will set these based on TSP goals and objectives.
Prioritization Factors	Factors specified in the TPR that shall be used for prioritizing projects by mode, in specific areas, and systemwide.	Milwaukie must prioritize specific types of projects to improve access, equity, and safety, among other factors. These can be supplemented with local prioritization factors.

Performance Measures

Consistent with [-0900](#), [0905](#) and [-0910](#), the City of Milwaukie will be required to coordinate its planning process with Metro's Climate Smart Strategy performance measures documented in the [Metro 2023 Regional Transportation Plan](#). The following Table 2 documents the current implementation and performance monitoring results from the *Metro 2023 Regional Transportation Plan*.

These measures should be considered or evaluated, if needed, during the existing and future conditions analysis to establish baselines for the performance measures, establish targets for the -0905 performance measures if a target has not been set already, and identify needs. They should influence modal plan development and be used to evaluate future performance of the system.

Table 2. Metro 2023 RTP Climate Smart Strategy Implementation and Performance Monitoring

	Climate Smart Strategy Baseline (2010)	Climate Smart Strategy Monitoring Target (2035)	2023 RTP Base Year (2020)	RTP 23 +STS Target Scenario Constrained (2045)
1. Implement the 2040 Growth Concept and local adopted land use and transportation plans				
a. Share of households living in a walkable mixed used development in the UGB	26%	37%	29%	37%
b. New residential units built through infill and redevelopment in the UGB ¹	58%	65%	TBD	75%
c. New residential units built on vacant land in the UGB ¹	42%	35%	TBD	25%
d. Acres of urban reserves ¹	Not applicable	12,000	Not applicable	TBD
e. Daily vehicle miles per capita	19	17	15	10
2. Make transit convenient, frequent, accessible and affordable				
a. Daily transit service revenue hours (excluding C-TRAN service hours)	4,900	9,400	7,390	10,192
b. Share of households within 1/4-mile all day frequent transit service	30%	37%	44%	41%
c. Share of low-income households within 1/4-mile all day frequent transit service	39%	49%	74%	82%
d. Share of employment within 1/4-mile all day frequent transit service	41%	52%	64%	67%
3. Make biking and walking safe and convenient				
a(1). Daily trips made walking	505,000	768,000	1,416,311	2,129,413
a(2). Daily trips made biking	179,000	280,000	91,000	121,552
b(1). Per capita biking miles per week	2.1	3.4	1.1	1.3
b(2). Per capita pedestrian miles per week	1.3	1.8	2.8	3.3
c(1 and 2). See 4a(2) and 4a(3) below		See 4a(2) and 4a(3) below		
d(1). New miles of bikeways ²	623 existing miles	421	626 existing miles	76
d(2). New miles of sidewalks ²	5072 existing miles	Data not available	TBD	59

	Climate Smart Strategy Baseline (2010)	Climate Smart Strategy Monitoring Target (2035)	2023 RTP Base Year (2020)	RTP 23 +STS Target Scenario Constrained (2045)
d(3). New miles of regional trails ²	229 existing miles	140	247 existing miles	80
4. Make streets and highways safe, reliable				
a(1). Fatal and severe injury crashes - motor vehicles ³	398	199	433	No forecast data
a(2). Fatal and severe injuries – pedestrians ³	63	32	78	No forecast data
a(3). Fatal and severe injuries - bicyclists ³	35	17	26	No forecast data
b. Change in travel time and reliability in regional mobility corridors	Data not available	Not evaluated	Data not available	No forecast data
c. Share of freeway lanes blocking crashes cleared within 90 minutes	Data not available	100%	Data not available	No forecast data
5. Use technology to actively manage the transportation system				
a. Share of arterial delay reduced by traffic management strategies	10%	35%	Data not available	No forecast data
b. Share of regional transportation system covered with system management/TSMO	Data not available	Data not available	Data not available	No forecast data
6. Provide information and incentives to expand the use of travel options				
a. Share of households participating in individual marketing	9%	45%	0.3%	0.6%
b. Share of workforce participating in commuter programs	20%	30%	17%	14%
7. Manage parking to make efficient use of vehicle parking and land dedicated to parking				
a(1). Share of work trips occurring in areas with actively managed parking	13%	30%	TBD	TBD
a(2). Share of non-work trips occurring in areas with actively managed parking	8%	30%	TBD	TBD
8. Support transition to cleaner low carbon fuels, efficient fuels and pay-as-you-go insurance				
a(1). Share of registered passenger cars that are electric or plug-in-hybrid electric	1%	8%	3%	48%

	Climate Smart Strategy Baseline (2010)	Climate Smart Strategy Monitoring Target (2035)	2023 RTP Base Year (2020)	RTP 23 +STS Target Scenario Constrained (2045)
a(2). Share of registered light trucks that are electric or plug-in-hybrid electric	1%	2%	2%	9%
b. Share of households using pay-as-you-go insurance	1%	40%	6%	91%
9. Secure adequate funding for transportation investments				
a. Address local, regional, and state transportation funding gap	Not evaluated		Regional funding discussions are ongoing	
10. Demonstrate leadership on climate change				
a. Region-wide annual tons per capita greenhouse gas emissions (MTCO ₂ e) from household light-duty vehicles within the Target Rule area	Not evaluated		2.3	0.36
b. Region-wide annual tons per capita greenhouse gas emissions (MTCO ₂ e) from all vehicles within the Target Rule area	Not evaluated		TBD	

Table Notes:

1. Data is derived from the 2018 Urban Growth Report adopted by the Metro Council in Dec. 2018.
2. Climate Smart Strategy target reflects number of miles of new bikeways, sidewalks and trails for projects in the 2014 RTP. 2023 RTP values reflect number of miles of new bikeways, sidewalks and trails for projects on planned regional networks in the 2023 RTP.
3. Climate Smart Strategy target reflects the 50 percent reduction target adopted in 2014 RTP. The 2023 RTP includes a target of zero fatal and severe injury crashes by 2035. The region does not currently have a safety predictive model to forecast this information, but will track progress toward the target through periodic RTP updates as required by federal transportation performance management requirements. Data shown for 2023 RTP Base Year (2020) reflects the annual average number of fatal and severe injury crashes reported by the Oregon Department of Transportation for the years 2016-2020.

Source: Metro 2023 Regional Transportation Plan Draft Climate Smart Strategy Implementation and Performance Monitoring

Performance Standards

Performance standards are selected from performance measures used to develop the TSP and contain specified thresholds. Performance standards are adopted metrics used to review comprehensive plan and land use regulation amendments and analyze transportation impacts as part of development review.

[OAR 660-012-0215\(3\)](#) requires Milwaukie to adopt at least two transportation performance standards. Historically, performance standards have been heavily focused on the accommodation of vehicular travel such as level of service (a vehicular delay-based standard) or volume to capacity (a roadway/intersection-based capacity standard). Under the new rules, at least one of the new transportation performance standards must support increasing transportation options and avoiding principal reliance on the automobile. The performance standards must also support achieving the targets for the performance measures from the Climate Smart Strategy section of the Metro 2023 Regional Transportation Plan developed to address OAR 660-044 greenhouse gas reduction requirements. Additionally, the performance standards must evaluate at least two of the following objectives for the transportation system, for any or all modes of transportation:

1. Reducing climate pollution: creating feasible transportation options that reduce carbon emissions
2. Equity: consideration for existing or proposed transportation-related disparities and barriers experienced by historically underserved populations
3. Safety: providing a transportation system that reduces injuries and fatalities and that people feel comfortable using
4. Network connectivity: modal networks that provide route options to users and minimize out-of-direction travel
5. Accessibility: the ease of reaching (and interacting with) destinations or activities distributed in space
6. Efficiency: the maximization of transportation services at the lowest possible cost
7. Reliability: dependably provides users with a consistent range of predictable travel times
8. Mobility: the ability to move freely and easily

The performance standards could be based on a measure from the Metro Climate Smart Strategy or measures identified based on the city's TSP goals and objectives. While multiple performance measures will be considered during the development of the TSP, two or more need to be adopted as standards.

Table 3 shows the performance measures that have been included in a toolkit in ODOT's Analysis Procedures Manual to identify and select performance standards to meet the TSP requirements in [OAR 660-12-0215](#). Jurisdictions may adopt performance standards based on different measures; however, these have been identified as good candidates for the City of Milwaukie based on their ability to document incremental changes impacted by projects, plan amendments, site developments and mitigations, their overall flexibility, ease of application and potential data availability. Table 3 also identifies the [OAR 660-012-0215\(3\)](#) objectives that the potential performance standards could have a primary impact upon (the two adopted standards must collectively address two or more of these) and which potential performance

standards would support increasing transportation options and avoiding principal reliance on the automobile (at least one performance standard must meet this criteria). Additional information on each of these potential performance standards is included in ODOT's Analysis Procedures Manual.

Table 3. Candidate Performance Measures for Adopting as Performance Standards

Performance Measures	OAR 660-012-0215(3) Objectives with Primary Impact	Supports increasing transportation options and avoiding principal reliance on the automobile?
Accessibility to key destinations	Accessibility, Equity	Yes
Accessibility to employment	Accessibility, Equity	Yes
Accessibility to transit	Accessibility, Equity	Yes
Bicycle level of traffic stress (BLTS)	Accessibility	Yes
Pedestrian level of traffic stress (PLTS)	Accessibility	Yes
System completeness	Network Connectivity, Accessibility	Yes
Bicycle crash risk	Safety	Yes
Pedestrian crash risk	Safety	Yes
Walking and biking facility condition	Accessibility	Yes
Pedestrian crossing spacing	Network Connectivity, Accessibility	Yes
AADT/capacity	Efficiency, Mobility	No
Hours of congestion/Duration of congestion	Efficiency, Reliability, Mobility	No
Level of service	Efficiency, Reliability, Mobility	No
Queuing	Mobility	No
Existing and predicted total crashes	Safety	No
Travel speed	Efficiency, Mobility	No
Vehicle hours traveled (VHT)	Reducing Climate Pollution	No
Household-based vehicle miles traveled (VMT) per capita	Reducing Climate Pollution	No
Volume-to-capacity ratio (V/C) at Intersections	Efficiency, Mobility	No
V/C for roadway links	Efficiency, Mobility	No

When selecting measures to adopt as performance standards, the City of Milwaukie needs to consider the following criteria:

- Does the standard help support progress for at least one of the [OAR 660-012-0215\(3\)](#) objectives? If so, which ones?
- Does the standard support increasing transportation options and avoiding principal reliance on the automobile? (One of the two measures must meet this criterion.)
- Can the City support the staff time or consultant time and expense to report on the standard or review the impact of the standard for transportation projects and land use and development applications?
- Does the City have the data available? If not, can they collect the necessary data and will they have the resources needed to do so?
- Does the standard support progress towards the TSP goals and objectives and support achieving the targets for the performance measures from the Metro Regional Transportation Plan? If so, which ones? Greater consideration could be given to standards that address multiple goals and performance measures.
- What will the thresholds be for the standard and will they create outcomes desired by the community?
- What standards do partner and neighboring agencies use and is there a benefit in coordinating standards? How will the two or more selected standards work together? Per [OAR 660-012-0215\(3\)](#), updated Transportation System Plans “must clearly establish how to apply the multiple performance standards to a proposal that meets some, but not all, of the transportation performance standards.”

Recommended City of Milwaukie Performance Standards

The City of Milwaukie currently has a level of service (LOS) D standard¹ during the peak operating conditions for all intersections that fall within the City’s jurisdiction. Keeping LOS as a performance standard or switching to a volume to capacity-based standard² will help the City to continue to support the goals of efficiency, reliability, and mobility by monitoring the degradation of intersection delay/capacity and identify the need for future development projects to maintain that standard.

The non-vehicular-based performance measures documented in Table 4 are recommended for consideration as part of development of the new TSP process. These performance standards would equip the city with tools to review and address comprehensive plan amendments, land use regulation amendments, and development applications while supporting the broader goals of network connectivity, accessibility, and equity.

¹ LOS D refers to a stable flow of traffic where vehicular volumes are near capacity at an intersection and the density of traffic restricts maneuverability and slows speeds. A LOS D standard indicates that intersections must be designed to operate at this level or better during peak traffic conditions.

² Volume to capacity standards compare how many vehicles use an intersection compared to how many vehicles could use the intersection over a time period.

Table 4. Potential Performance Standards Supporting Increasing Transportation Options

Potential Performance Standard	OAR 660-012-0215(3) Objectives with Primary Impact	Key Considerations
System Completeness	Network Connectivity, Accessibility	<p>System completeness is often reviewed at the system-wide level but can be viewed at the facility level. This metric is easily understood by the public and can support a broad range of goals.</p> <p>The TSP will include modal maps and identify gaps in the system as well as information about total miles of pedestrian and bicycle facility and the number of transit routes and stops in the City.</p>
Bicycle Level of Traffic Stress (BLTS)	Accessibility	<p>BLTS is well suited for high-level plans and has a direct connection to roadway characteristics. Most of the data points needed to calculate BLTS are readily available in the City's dataset for most roads. Data collection overlaps with PLTS and could be completed in tandem.</p> <p>BLTS 2 is often used as a target because it appeals to the majority of the potential bike-riding population. BLTS 1 is desired within ¼ mile of schools,</p> <p>The TSP will evaluate the percentage of collector and arterial streets that are rated BLTS 1 or 2.</p>
Pedestrian Level of Traffic Stress (PLTS)	Accessibility	<p>PLTS is well suited for high-level plans and has a direct connection to roadway characteristics. Most of the data points needed to calculate PLTS are readily available in the City's dataset for most roads. Data collection overlaps with BLTS and could be completed in tandem.</p> <p>PLTS 2 is often used as a target because it appeals to the majority of users. PLTS 1 is the preferred target within ¼ miles of schools and in land uses including downtown cores, medical facilities, areas near assisted living/retirement centers, and within ¼ mile of transit stops.</p> <p>The TSP will evaluate the percentage of collector and arterial streets that are rated PLTS 1 or 2.</p>
Accessibility to Transit	Accessibility, Equity	<p>Accessibility to transit helps to compare transit system alternatives. Developing a complete and usable and that includes scheduling and routing data can be cumbersome, so partnership with TriMet would be needed to establish base data for evaluation.</p> <p>Common distances used as analysis factors for walking and biking to/from transit stops are ¼ mile and 1 mile, respectively.</p> <p>The TSP will evaluate the percentage of the City that is within ½ and ¼ mile of transit.</p>

Additional details on the strength and limitations of these, and other, potential performance standards are included in *Appendix C: Draft Performance Measure and Performance Standard Application Guidance*.

Prioritization Framework

In Milwaukie, the TPR includes requirements for how to prioritize projects within each modal plan, in specific areas, and for the system as a whole. An approach is to prioritize the projects in each modal plan first, assess whether the required priorities in specific areas are met, and then develop the financially-constrained project list for all modes and verify that it prioritizes the required systemwide outcomes.

Step 1: Mode Specific Prioritization Factors

Pedestrian and Bicycle System Prioritization Factors (-0520 and -0620)

When prioritizing pedestrian and/or bicycle system projects systemwide, higher prioritization shall be given to projects that:

- Are located in climate-friendly areas.
- Are located in areas with concentrations of underserved populations.
- Are located in areas with pedestrian and/or bicycle safety risk factors such as roadways with high speeds and high traffic volumes.
- Are located in areas with reported crashes involving serious injuries and deaths to pedestrians and/or people riding bicycles.
- Provide access to key pedestrian and/or bicycle destinations identified as provided in OAR 660-012-0360.
- Connect to, fill gaps in, and expand the existing pedestrian and/or bicycle system networks.
- Implement, where applicable, the adopted regional scenario plan developed to address OAR 660-044 greenhouse gas reduction targets.

Transit System Prioritization Factors (-0720)

When prioritizing transit system projects, higher prioritization shall be given to projects that:

- Are located in climate-friendly areas
- Are located in areas with concentrations of underserved populations
- Provide access to key public transportation destinations identified as provided in OAR 660-012-0360
- Connect to, fill gaps in, and expand the existing public transportation network
- Implement, where applicable, the adopted regional scenario plan developed to address OAR 660-044 greenhouse gas reduction targets.

Street and Highway System Prioritization Factors (-0820)

When prioritizing street and highway system projects, higher prioritization shall be given to projects that:

- Reallocate right-of-way from facilities dedicated to moving motor vehicles to those for use by the pedestrian, bicycle, and public transportation systems, particularly in climate-friendly areas, areas with concentrations of underserved populations, and areas with reported crashes involving serious injuries and deaths.
- Fill gaps in the existing street network.
- Implement, where applicable, the adopted regional scenario plan developed to address OAR 660-044 greenhouse gas reduction targets or help meet the performance targets per -0910.

Step 2: Area Specific Prioritization Factors

Jurisdictions should review the priority projects in the areas described below to verify that the required priorities for these areas and priority users are addressed.

- Within CFA's
 - Agencies shall prioritize pedestrian, bicycle, and public transportation facilities and services and ensure planned facilities are safe, low stress, and comfortable for people of all ages and abilities.
- In areas with concentrations of underserved populations
 - Agencies shall prioritize projects addressing historic and current marginalization and work to rectify previous harms and prevent future harms from occurring.
- In industrial areas, along routes accessing key freight terminals, and other areas where accommodations for freight are needed
 - Agencies must consider the needs of freight users. Pedestrian, bicycle, and public transportation system connections must be provided in industrial areas at a level that provides safe access for workers.
- In areas near schools or areas with expected concentrations of children, older people, or people with disabilities
 - Agencies must prioritize safe, protected, and continuous pedestrian and bicycle networks connecting to key destinations, including transit stops.

Step 3: TPR Required Prioritization Factors (-0155(3))

Jurisdictions should develop their combined prioritized project list for their financially-constrained plan and verify that it prioritizes the these systemwide outcomes

- Meeting greenhouse gas reduction targets
- Improving equitable outcomes for underserved populations
- Improving safety, particularly reducing or eliminating fatal and serious injuries
- Improving access for people with disabilities
- Improving access to key destinations
- Completing the multimodal transportation network (filling gaps, making connections)
- Supporting the economies of the community, regional, and state
- Other local factors

CONNECTION BETWEEN PRIORITIZATION FACTORS AND THE TSP GOALS

Table 5 connects the prioritization framework above to the goals identified in Milwaukie's current Vision, Goals, and Policies memorandum. These performance measures will be used to evaluate existing and future conditions, identify needs and solutions, and will influence project prioritization.

Table 5. Prioritization Factors and TSP Goals

Goal	Goal Statement	Prioritization Factor
Safety	Improve the safety and comfort of the multimodal transportation network.	<ul style="list-style-type: none"> Improve safety, particularly reducing or eliminating fatalities and serious injuries Pedestrian and/or bicycle system projects are prioritized if they are located in areas with pedestrian and/or bicycle safety risk factors such as roadways with high speeds and high traffic volumes and/or are located in areas with reported crashes involving serious injuries and deaths to pedestrians and/or people riding bicycles
Active, Healthy, Transportation Choices	Establish and/or complete a network of multimodal facilities that make walking, biking, and rolling an attractive, comfortable, healthy, and convenient choice for people of all ages and abilities.	<ul style="list-style-type: none"> Complete the multimodal transportation network, including filling gaps and making connections Projects in an industrial area create or improve pedestrian, bicycle, and public transportation system connections at a level that provides safe access for workers Pedestrian and/or bicycle projects that connect to, fill gaps in, and expand the existing pedestrian and/or bicycle system networks Projects in Climate Friendly Areas that improve existing or provide new pedestrian, bicycle, and public transportation facilities and services, or create safe, low stress, and comfortable travel via walking, rolling, cycling, and public transportation for people of all ages and abilities with minimal interference from motor vehicle traffic
Mobility, Accessibility, and Connectivity	Provide an efficient and well-connected multimodal transportation system that works to connect the community to key destinations.	<ul style="list-style-type: none"> Improve access for people with disabilities Improve access to destinations, particularly key destinations as identified in OAR 660-012-0360 Projects in areas near schools or other locations with expected concentrations of children or areas with expected concentrations of older people or people with disabilities that provide safe, protected, and continuous pedestrian and bicycle networks connecting to key destinations, including transit stops Pedestrian and/or bicycle system projects that provide access to key pedestrian and/or bicycle destinations identified as provided in OAR 660-012-0360
Coordination with Local, Regional, and State Partners	Foster and maintain relationships with public and private partners in the common interest of enhancing the city's transportation network.	<i>Prioritization factors do not directly relate to this goal, however local, regional, and state partners will be engaged in the TSP development process.</i>
Resiliency	Develop a multimodal transportation system that provides travel options during normal conditions, natural disasters, or emergencies.	
Parking	Reduce land used for parking to achieve local, state and regional parking goals while also managing parking impacts.	
Fiscal Stewardship and System Management	Make the most of transportation resources by leveraging available funding opportunities, preserve existing infrastructure, and reduce system maintenance costs.	Align with the functional classification of planned or existing transportation facilities or segments
Economic Vitality	Develop a transportation system that supports and facilitates economic activity through the efficient movement of people, goods, and services.	<ul style="list-style-type: none"> Support the economies of the community, region, and state Projects in Industrial Areas, along routes accessing key freight terminals, and other areas where accommodations for freight are needed that consider the needs of freight users
Equity	New investments in Milwaukie's transportation system are distributed fairly to reduce or eliminate transportation-related barriers and disparities, especially those experienced by marginalized or underserved populations.	<ul style="list-style-type: none"> Improve equitable outcomes for underserved populations, as identified in OAR 660-012-0125 Projects in areas with high concentrations of underserved populations that address historic and current marginalization and/or work to rectify previous harms and prevent future harms from occurring. These areas may have suffered from disinvestment or harmful investments, including transportation system investments. Such harms include but are not limited to displacement, increased exposure to pollutants,

Goal	Goal Statement	Prioritization Factor
		<ul style="list-style-type: none"> • destruction and division of neighborhoods, heat islands, and unsafe conditions for pedestrians, cyclists, transit users, and others. • Pedestrian and/or bicycle system projects that are located in areas with concentrations of underserved populations
Climate Friendly	Develop a transportation system that works to minimize pollution and reduce impacts to the environment and climate change.	<ul style="list-style-type: none"> • Support meeting greenhouse gas reduction targets, including: <ul style="list-style-type: none"> • Reduce household-based vehicle miles traveled per capita to meet greenhouse gas reduction targets provided in OAR 660-044-0020 or OAR 660-044-0025[1]; • Support compact, pedestrian-friendly patterns of development in urban areas, particularly in climate-friendly areas; • Reduce single-occupant vehicle travel as a share of overall travel; and • Support meeting performance targets set for required performances measures for reporting (see Performance Measures for Reporting). • Pedestrian and/or bicycle system projects that are located in climate-friendly areas
Transit Forward	Make public transit service more viable.	<ul style="list-style-type: none"> • Transit elements incorporated in Equity and Mobility, Accessibility, and Connectivity measures.

NEXT STEPS

This memorandum will be reviewed by the Transportation System Plan Technical and Advisory Committees, Transportation Planning Analysis Unit, and Region 1 Traffic Section. After obtaining approval of the analysis methodology the project team will begin the transportation system conditions needs analysis.

APPENDIX A – MILWAUKIE TSP METHODOLOGY AND ASSUMPTIONS

Study Area

The study area for the Milwaukie TSP update is defined as the City of Milwaukie boundaries. The study area does not include areas that are in the Urban Growth Management Areas (Figure 1).

Data

Information contained within the City GIS, Metro Regional Land Information System, or other publicly available databases and imagery will be utilized for the existing transportation system conditions analysis. No new data will be collected for this element of the TSP update.

Analysis Methodology

This section documents the analysis methodology associated with the existing and future conditions analyses.

Land Use and Population Analysis

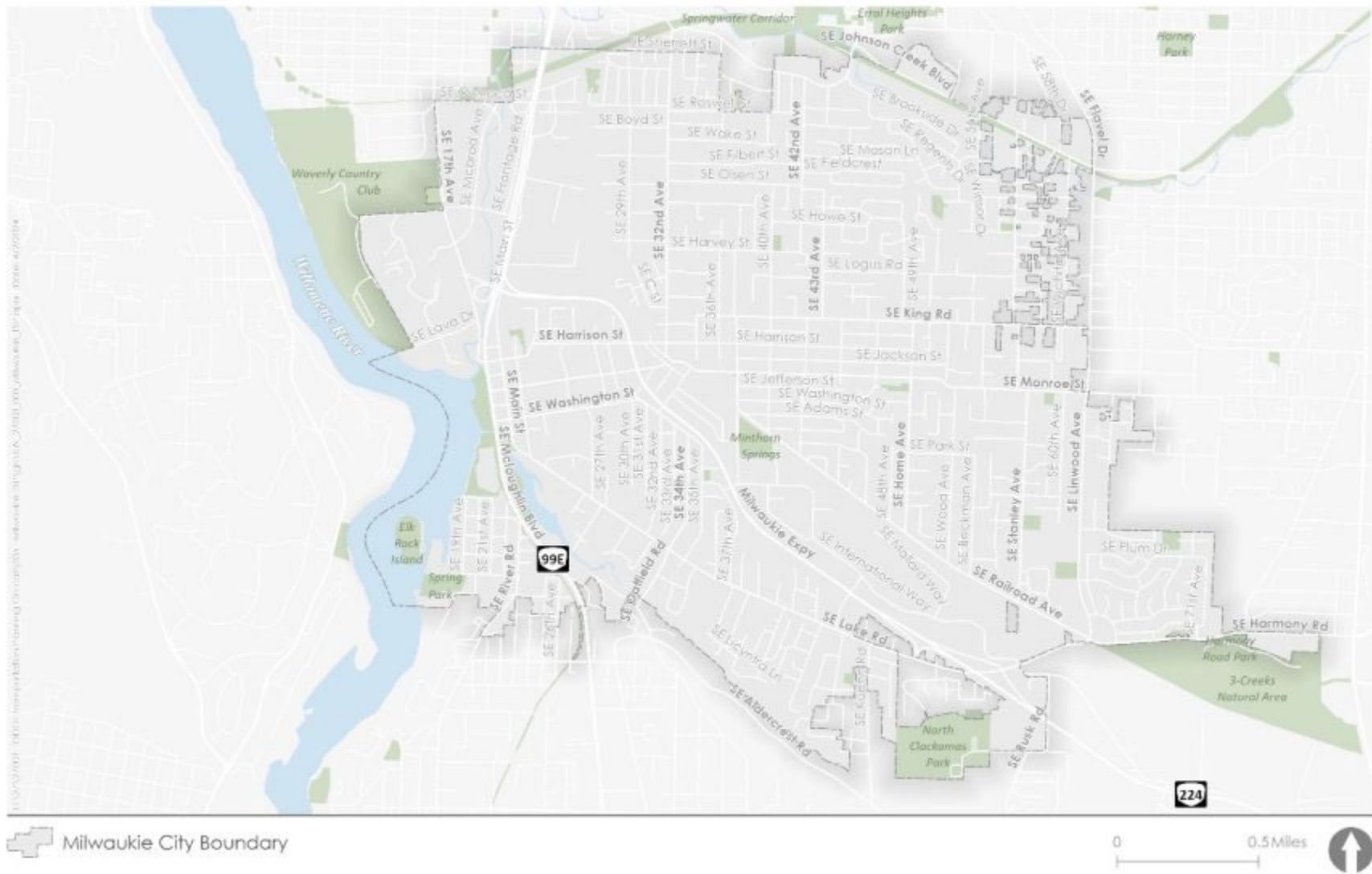
Current population locations and characteristics will be summarized according to most recent American Community Survey data and City GIS data. This will include:

9. Summaries of the locations of underserved and transportation-disadvantaged populations in Task 2.
10. Existing land uses including total land area by Comprehensive Plan Designation and Zoning and the locations and amounts of buildable lands by Comprehensive Plan Designation and Zoning.
11. Maps of identified activity centers and key destinations as identified and provided in GIS by City staff.
12. General characterization of the type of trips and seasonal variations in trips generated by activity centers.

Metro Model Versions/Assumptions

Metro, ODOT, and DKS Associates are currently working on a case study project for Milwaukie that is evaluating how to use the Metro regional travel demand model to comply with CFEC rules for jurisdictions within the region. The case study is anticipated to provide information supporting climate analyses, including greenhouse gas emissions and vehicle miles traveled. The Milwaukie TSP will document the findings of this study pending the timeframe and outcomes of that effort.

Figure 1: Study Area



Enhanced Review Process

Oregon Administrative Rule (OAR) 660-012-0830 requires enhanced review of select roadway projects when preparing a new or updated TSP. The enhanced review process applies to the City of Milwaukie as it is located within Metro. A new step in the preparation of TSPs, the enhanced review process applies specifically to existing planned TSP projects or new proposed TSP projects that fall under one of the following categories:

- New or extended arterial street, highway, or freeway projects that would carry vehicle traffic;
- New or expanded interchanges;
- An increase in the number of general purpose travel lanes for an existing arterial or collector street, highway, or freeway; and
- New or extended freeway auxiliary lanes.

If there are currently planned or anticipated new TSP projects that would meet the enhanced review criteria, the new process would require local agencies to develop new alternative projects to determine if these alternatives could substantially address the identified need without implementation of the roadway projects.

As part of this task, the Project Team, in coordination with ODOT and the Department of Land Conservation and Development (DLCDD), has reviewed the list of projects from the existing 2018 *Milwaukie TSP* and the *Metro 2023 Regional Transportation Plan (RTP)*. Based on this review, there are no currently planned projects that are likely to trigger enhanced review.

Livable Streets

The livable streets analysis and recommendations will identify standard cross-sections and right-of-way needs based on the land use context for the local street functional classifications.

Livable streets will reflect Metro's *Designing Livable Streets and Trails Guide* and ODOT's *Highway Design Manual*. Recommendations will include recommended changes to the City's Code as needed to support the local street and greenway standards.

Parking

OAR 660-012-0415 identifies that cities with populations over 25,000 within the Portland Metropolitan Area shall set parking maximums in Metro Region 2040 centers. According to the United States Census Bureau, the City of Milwaukie has a population of 21,375 (2022), therefore the requirement to identify parking maximums does not currently apply.

The TSP will include recommendations for locations of parking and charging stations for vehicles and bicycles.

Multimodal Analysis

The existing conditions inventory, needs determination, and solutions assessment will be consistent with the elements required under [OAR 600-012-0150](#). Table 6 documents the “shall” statements required for cities and counties within metropolitan areas, which will be evaluated where there is available data and ability to evaluate based on the project scope and budget. Where there is no available data (e.g. data about the condition of bicycle facilities) or the evaluation goes beyond the project scope and budget, the TSP update will identify the need for additional data collection in the future. Items **bolded** in the table below are anticipated to be evaluated as part of this TSP update based on scope, budget, and available data.

Table 6. Transportation System Needs and Gaps Analysis According to OAR 660-020-0150³

Mode	Facility Inventory	Needs Determination	Deficiencies Determination	Developing Solutions
Bicycle	<ul style="list-style-type: none"> • Identification of bicycle lanes, bicycle routes, accessways, paths, and other types of bicycle facilities, including pedestrian facilities that may be used by bicycles along bicycle boulevards and along all arterials and collectors within the planning area • Identification of bicycle facilities of all types within Climate-Friendly Areas, within Metro Region 2040 centers, within one-quarter mile of all primary and secondary schools, and on bicycle boulevards • Identification of the width, type, and condition of bicycle facilities • Identification of the consistency of bicycle facilities with applicable state, regional, and local standards • Identification of crash risk factors of inventoried bicycle facilities, including speed, volume, separation, and roadway width • Location of all reported injuries and deaths of people on bicycles from the most recent 5 years of available data • Identification of key bicycle destinations 	<ul style="list-style-type: none"> • Identification of the local, regional, and state standards for a complete bicycle system for people of all ages and abilities⁴ • Evaluation of gaps and deficiencies in the bicycle network relative to standards, including missing bike lanes, narrow bike lanes, unmarked crossings, poor surface conditions, poor street lighting, roadway hazards, etc. • Evaluation of gaps in bicycle access to/from key destinations, including transit stops, schools, shopping areas, medical facilities, civic and recreational uses, and trails • Analysis of bicycle crash data and risk-based safety issues (see ODOT's Bicycle Safety Implementation Plan for additional information) • Evaluation of high bicycle fatality and serious injury crash locations 	<ul style="list-style-type: none"> • Evaluation of gaps in bicycle access to/from key destinations, including transit stops, schools, shopping areas, medical facilities, civic and recreational uses, and trails, based on future no-build condition and future land use conditions • Analysis of bicycle risk-based safety issues (see ODOT's Bicycle Safety Implementation Plan for additional information), based on future no-build condition and future land use conditions 	<ul style="list-style-type: none"> • Completeness of the bicycle network • Gaps and deficiencies in the bicycle facilities along all arterials and collectors • Gaps and deficiencies in the bicycle facilities along all streets (including local streets) within climate-friendly areas, within Metro Region 2040 centers, within one-quarter mile of all primary and secondary schools, and along designated bicycle boulevards • Gaps in the bicycle facilities that would link key community destinations (e.g., major employment centers, schools, parks, transit stops, intermodal facilities, and recreation areas) • Known safety issues in the bicycle network (specifically, crash history, noting fatal and severe injury crashes, or roadway characteristics such as number of lanes, speed, and volume of motor vehicles) • Enhanced facilities (above the minimum bicycle system requirements) where necessary or desirable • Bicycle facility design standards for arterials, collectors, and shared-use paths • Bicycle projects identified in other relevant state, regional, and local plans • Bicycle facilities with: <ul style="list-style-type: none"> – Separated bike lanes (including cycle tracks) – Buffered bike lanes – On-street bike lanes – Shoulder bikeways – Shared roadway pavement marking and signs – Shared use paths • Enhanced bicycle crossings with: <ul style="list-style-type: none"> – Bike boxes – Two-stage turn queue boxes – Intersection crossing markings – Median diverters

³ This table was developed based on ODOT's draft Transportation System Plan Guidelines resource (<https://www.oregon.gov/odot/Planning/TSP-Guidelines/Pages/Prepare.aspx>) – the table is subject to change based on updates to the Transportation System Plan Guidelines.

⁴ The pedestrian and bicycle analyses will follow the Pedestrian Level of Traffic Stress (PLTS) and Bicycle Level of Traffic Stress (BLTS) analysis methodologies outlined in the APM. Both PLTS and BLTS methods group facilities into four different stress levels for segments, intersection approaches, and intersection crossings. Facilities with an LTS 1 rating have little to no traffic stress, require less attention, and are suitable for all users. Facilities with an LTS 2 rating have little traffic stress, but require more attention and therefore, may or may not be suitable for small children. Facilities with an LTS 3 rating have moderate traffic stress and are suitable for adults. Facilities with an LTS 4 rating have high traffic stress and are only suitable for able-bodied adults with limited options.

Mode	Facility Inventory	Needs Determination	Deficiencies Determination	Developing Solutions
Pedestrian	<ul style="list-style-type: none"> • Identification of sidewalks, crosswalks, shared-use paths, trails, and other types of pedestrian facilities along all arterials and collectors within the planning area • Identification of pedestrian facilities of all types within Climate-Friendly Areas, within Metro Region 2040 centers, and within one-quarter mile of all primary and secondary schools • Identification of the width, type, and condition of pedestrian facilities • Identification of crossing distances, type of crossing, closed crossings, curb ramps, and distance between crossings • Identification of the consistency of pedestrian facilities with applicable state, regional, and local design standards • Identification of crash risk factors of inventoried pedestrian facilities, including speed, volume, separation, and roadway width • Location of all reported injuries and deaths of people walking or using a mobility device from the most recent 5 years of available data • Identification of key pedestrian destinations 	<ul style="list-style-type: none"> • Identification of the local, regional, and state standards for a complete pedestrian system¹ • Evaluation of gaps and deficiencies in the pedestrian network relative to standards, including missing sidewalks, narrow sidewalks, curb-tight sidewalks, poor sidewalk condition, poor street lighting, unmarked crossings, wide spacing between marked crossings, etc. • Evaluation of gaps in pedestrian access to/from key destinations, including transit stops, schools, shopping areas, medical facilities, civic and recreational uses, and trails • Pedestrian crash analysis and risk-based safety analysis • Analysis of pedestrian crash data and risk-based safety issues (see ODOT's Bicycle and Pedestrian Safety Implementation Plan for additional information) • Evaluation of pedestrian fatality and serious-injury crash locations • Evaluation of marked crossings, including location, spacing, treatments, etc. 	<ul style="list-style-type: none"> • Evaluation of gaps in pedestrian access to/from key destinations, including transit stops, schools, shopping areas, medical facilities, civic and recreational uses, and trails, based on future no-build condition and future land use conditions • Analysis of pedestrian risk-based safety issues (see ODOT's Bicycle and Pedestrian Safety Implementation Plan for additional information), based on future no-build condition and future land use conditions • Evaluation of marked crossings, including location, spacing, treatments, etc., based on future no-build condition and future land use conditions 	<ul style="list-style-type: none"> - Protected intersections • Completeness of the pedestrian network • Gaps and deficiencies in the pedestrian network along all arterials and collector • Gaps and deficiencies in the pedestrian network along all streets (including local streets) within climate-friendly areas, within Metro Region 2040 centers, and within one-quarter mile of all primary and secondary schools • Gaps in the pedestrian facilities that would link key community destinations (e.g., major employment centers, schools, parks, transit stops, intermodal facilities, and recreation areas) • Known safety issues in the pedestrian network (specifically, crash history, noting fatal and severe injury crashes, or roadway characteristics such as number of lanes, speed, and volume of motor vehicles) • Enhanced facilities (above the minimum pedestrian system requirements) where necessary or desirable • Pedestrian facility design standards for arterials, collectors, and local streets • Pedestrian projects identified in other relevant state, regional, and local plans • Pedestrian facilities with: <ul style="list-style-type: none"> - Sidewalks - Landscape strips (protective buffers) - Pedestrian pathways/accessways - Pedestrian plazas - Shared-use paths and trails - Pedestrian scale lighting - Pedestrian amenities • Enhanced pedestrian crossings with: <ul style="list-style-type: none"> - High visibility pavement markings and signs - Raised median islands with pedestrian refuge - Flashing beacons (RRFBs, PHBs, etc.) - Curb extensions
Transit	<ul style="list-style-type: none"> • Identification of local and intercity transit service providers • Identification of fixed-route and dial-a-ride service areas and the location of fixed routes, major stations, and transit stops • Identification of service characteristics, such as days and hours of operation and service frequency 	<ul style="list-style-type: none"> • Identification of the local, regional, and state standards for a complete public transportation system⁶ • Evaluation of gaps in the local transit network that serve key destinations, including schools, shopping areas, medical facilities, civic and recreational uses, and trails 	<ul style="list-style-type: none"> • Evaluation of gaps in the local transit network that serve key destinations, including schools, shopping areas, medical facilities, civic and recreational uses, and trails, based on future no-build condition and future land use conditions • The item to evaluate "transit corridors, including priority and other transit corridors in areas with greater than 10,000 in population, 	<p>The project team will coordinate with TriMet in preparation of transit solutions.</p> <ul style="list-style-type: none"> • Completeness of the public transportation network • Gaps and deficiencies in the public transportation network, including transit supportive facilities (e.g., stations, hubs, stops, shelters, signs, and ancillary features) • Gaps in the public transportation network that would link key community destinations (e.g., major

⁶ The transit analysis will follow the qualitative multimodal assessment (QMA) methodology outlined in the APM. Transit QMA provides a qualitative "good", "fair", "poor" rating for transit service based on hours of service, service frequency, and service coverage.

Mode	Facility Inventory	Needs Determination	Deficiencies Determination	Developing Solutions
	<ul style="list-style-type: none"> • Identification of intercity bus and passenger rail terminals and park-and-ride stations • Identification of the location of transportation-disadvantaged and disabled populations, including areas with disproportionate concentrations of these populations • Identification of special service characteristics, such as bus rapid transit • Identification of transitways, transit lanes, transit priority signals, queue jumps, on-route charging, and other transit supportive facilities not otherwise inventoried • Identification of existing and planned transit trunk routes, exclusive transit ways, terminals and major transfer stations, major transit stops, and park-and-ride stations • The item to evaluate "the feasibility of developing a public transit system for areas within an urban area containing a population greater than 25,000 persons not currently served by transit" is not applicable⁵ • Identification of ADA accessibility to individual transit stops and services • Identification of key public transportation destinations 	<ul style="list-style-type: none"> • The item to evaluate "transit corridors, including priority and other transit corridors in areas with greater than 10,000 in population " is not applicable⁷. • Evaluation of transit supportive facilities on priority and other transit corridors, including stations, hubs, stops, shelters, signs, and ancillary features • Qualitative multimodal assessment of the public transit system (see ODOT's Analysis and Procedures Manual for technical guidance) • Assessment of transit stops for accessibility by disabled and safety for all riders, including the accessibility of amenities such as bus shelters 	<p>based on future no-build condition and future land use conditions" is not applicable⁸.</p> <ul style="list-style-type: none"> • Evaluation of transit supportive facilities on priority and other transit corridors, including stations, hubs, stops, shelters, signs, and ancillary features, based on future no-build condition and future land use conditions • Qualitative multimodal assessment of the public transit system (see ODOT's Analysis and Procedures Manual for technical guidance), based on future no-build condition and future land use conditions 	<p>employment centers, schools, parks, transit stops, intermodal facilities, and recreation areas)</p> <ul style="list-style-type: none"> • Gaps in the pedestrian and/or bicycle networks that limit access to/from existing or planned transit stops • Public transportation projects identified in other relevant transit agency plans
Roadway	<ul style="list-style-type: none"> • Document characteristics within the project limits of known roadway projects that will be moved into the updated TSP and that will be subject to an enhanced review process based on OAR 660-012-0830 (see Enhanced Review of Select Roadway Projects for more information) • Location of all publicly owned, operated, or supported streets • Identification of roadway ownership by jurisdiction • Identification of roadway classifications by jurisdiction, including federal, state, regional, and local classifications, as applicable • Identification of primary uses, and whether they serve local, regional, pass-through, or freight traffic • Identification of primary users of a facility, including whether users are primarily on 	<ul style="list-style-type: none"> • Identification of the local, regional, and state standards for a complete street and highway system • Review state, regional, and local transportation/land use plans to identify roadway projects that will be moved into the updated TSP and that will be subject to an enhanced review process based on OAR 660-012-0830 (see Enhanced Review of Select Roadway Projects for more information) • Evaluation of local street design standards according to applicable state and regional standards and guidelines • Comparison of roadway characteristics (travel lane widths, shoulder/bike lane widths, etc.) to applicable state, regional, and local standards • Evaluation of the local street network and the identification of areas where new local streets will be needed. Cities and counties 	<ul style="list-style-type: none"> • Evaluation of the local street network and the identification of areas where new local streets will be needed, based on future no-build condition and future land use conditions. Cities and counties must plan local streets in climate-friendly areas and Metro Region 2040 centers to prioritize pedestrian and bicycle systems and be limited to local access for motor vehicles. • Evaluation of the collector street network and the identification of new collector streets connected with local streets and arterials, based on future no-build condition and future land use conditions. Cities and counties must plan collectors in climate-friendly areas and Metro Region 2040 centers to prioritize pedestrian, bicycle, and public transportation systems. • Evaluation of the arterial street network, identification of new arterial streets connected with local streets and arterials, 	<ul style="list-style-type: none"> • Completeness of the roadway network and local street connectivity relative to local performance measures, standards, and targets • Gaps and deficiencies in the roadway network along arterials, collectors, and local streets • Address gaps and deficiencies in the roadway network that would link key community destinations (e.g., major employment centers, schools, parks, transit stops, intermodal facilities, and recreation areas) • Roadway design standards for arterials, collectors, and local streets that reflect the minimum size necessary for the identified function, planned land use context, and expected users of the facility (roadway design standards may be included as a reference if located in a separate manual) • Roadway projects identified in other relevant state, regional, and local plans (projects identified in other plans are also subject to the requirements of OAR 660-012-0830)

⁵ This will not be evaluated in the TSP Update because it is not applicable based on the population size of Milwaukie.

⁷ This will not be evaluated in the TSP Update because it is not applicable based on the population density along transit corridors in Milwaukie.

⁸ This will not be evaluated in the TSP Update because it is not applicable based on the population density along transit corridors in Milwaukie.

Mode	Facility Inventory	Needs Determination	Deficiencies Determination	Developing Solutions
	<p>foot, bicycle, transit, freight, or personal vehicle</p> <ul style="list-style-type: none"> • Identification of land use context for each segment of a facility, including types of planned land uses surrounding the facility • Identification of the location of key destinations • Identification of roadway characteristics: <ul style="list-style-type: none"> – For local streets include location – For collector streets include location, condition, and number of general-purpose travel lanes and turn lanes – For arterial streets include location, condition, and number of general-purpose travel lanes, turn lanes, and lane width – For expressways and other limited-access highways include location, condition, and number of general-purpose travel lanes, turn lanes, and lane width, as well as the locations and types of interchanges • An overview of pricing strategies in use, including specific facility pricing, area or cordon pricing, and parking pricing • Identification of pavement type and conditions through a windshield survey • Location of all reported serious injuries and deaths of people related to vehicular crashes from the most recent 5 years of available data 	<p>must plan local streets in climate-friendly areas and Metro Region 2040 centers to prioritize pedestrian and bicycle systems and be limited to local access for motor vehicles.</p> <ul style="list-style-type: none"> • Evaluation of the collector street network and the identification of new collector streets connected with local streets and arterials. Cities and counties must plan collectors in climate-friendly areas and Metro Region 2040 centers to prioritize pedestrian, bicycle, and public transportation systems. • Evaluation of the arterial street network, identification of new arterial streets connected with local streets and arterials, and designation of arterial streets as local access priority, through movement priority, or arterial segments in a climate-friendly area. 	<p>and designation of arterial streets as local access priority, through movement priority, or arterial segments in a climate-friendly area, based on future no-build condition and future land use conditions.</p>	
Freight	<ul style="list-style-type: none"> • Identification of Oregon Highway Plan Freight Routes and Reduction Review Routes • Identification of National Highway System (NHS) freight intermodal connectors and facilities (e.g., truck-rail intermodal yards, truck-rail reload facilities, marine terminals, pipeline terminals, air-cargo facilities, park-and-ride lots, highway-to-rail transfer facilities), including service levels and other characteristics • Identification of the National Highway Freight Network Critical Urban and/or Rural Freight Corridors • Identification of local and regional truck freight routes 	<ul style="list-style-type: none"> • No freight needs identified as shall statements 	<ul style="list-style-type: none"> • No freight deficiencies as shall statements 	<ul style="list-style-type: none"> • Known multi-modal safety issues along designated freight routes • Existing or projected future operational issues and geometric bottlenecks that impact the movement of truck freight along designated freight routes • Truck freight projects identified in other relevant state, regional, and local plans

Crash Analysis

The five most recent years of complete crash data available will be obtained from ODOT's crash database. Currently, complete crash data is available for the period from January 1, 2017 through December 31, 2021. The crash data will be analyzed according to the shall statements of OAR 660-020-0150, as documented in Table 6.

Potential countermeasures (and resulting crash percentage reductions) will be taken from the All Roads Transportation Safety (ARTS) Crash Reduction Factors (CRF) listing, the CRF Appendix, or the Crash Modification Factor (CMF) Clearinghouse; CMFs from the Clearinghouse will be three stars or better.

Planning Level Cost Estimates

Planning level cost estimates will be developed for proposed solutions to inform the identification of a fiscally constrained project list.

According to the Financial Forecast Memo, the City is projected to have approximately \$22 million available for capital projects over the next 20 years (excluding potential bonds). This amount of funding will be used to identify the fiscally constrained project list.

APPENDIX B: OREGON ADMINISTRATIVE RULES

This appendix includes the Oregon Administrative Rules (OARs) reviewed to develop the analysis methodology and performance measures. They were copied from the OAR database in February 2022.

OAR 660-012-0155

Prioritization Framework

(1) Cities, counties, Metro, and state agencies shall use the framework in this rule for decision making regarding prioritization of transportation facilities and services. Cities, counties, Metro, and state agencies shall consider the following:

- (a) Prioritization factors as provided in section (3);
- (b) Classification of facilities or segments as provided in section (4);
- (c) The planned land use context as provided in section (5); and
- (d) Expected primary users as provided in section (6).

(2) Cities, counties, Metro, and state agencies may use local values determined through engagement as provided in OAR 660-012-0120 to weight various prioritized factors when making prioritization decisions as provided in this division.

(3) Cities, counties, Metro, and state agencies shall prioritize transportation facilities and services based on the following factors:

(a) Meeting greenhouse gas reduction targets, including:

(A) Reducing per-capita vehicle miles traveled to meet greenhouse gas reduction targets provided in OAR 660-044-0020 or OAR 660-044-0025;

(B) Supporting compact, pedestrian-friendly patterns of development in urban areas, particularly in climate-friendly areas;

(C) Reducing single-occupant vehicle travel as a share of overall travel; and

(D) Meeting performance targets set as provided in OAR 660-012-0910.

(b) Improving equitable outcomes for underserved populations identified in OAR 660-012-0125;

(c) Improving safety, particularly reducing or eliminating fatalities and serious injuries;

(d) Improving access for people with disabilities;

(e) Improving access to destinations, particularly key destinations identified as provided in OAR 660-012-0360;

(f) Completing the multimodal transportation network, including filling gaps and making connections;

(g) Supporting the economies of the community, region, and state; and

(h) Other factors determined in the community.

(4) Cities, counties, Metro, and state agencies shall consider the functional classification of planned or existing transportation facilities or segments when making decisions about appropriate transportation facilities and services. Cities, counties, Metro, and state agencies may establish mode-specific functional classifications for each mode on any facility or segment that they own and operate.

(5) Cities, counties, Metro, and state agencies shall consider the planned land use context around an existing or planned transportation facility or segment when making decisions about appropriate transportation facilities and services.

(a) Within climate-friendly areas, cities, counties, Metro, and state agencies shall prioritize pedestrian, bicycle, and public transportation facilities and services. Cities, counties, Metro, and state agencies shall ensure facilities are planned for these modes to experience safe, low stress, and comfortable travel for people of all ages and abilities within climate-friendly areas with minimal interference from motor vehicle traffic.

(b) In areas with concentrations of underserved populations, cities, counties, Metro, and state agencies shall prioritize transportation projects addressing historic and current marginalization. Proposed transportation projects in these areas must work to rectify previous harms and prevent future harms from occurring. These areas may have suffered from disinvestment or harmful investments, including transportation system investments. Such harms include but are not limited to displacement, increased exposure to pollutants, destruction and division of neighborhoods, heat islands, and unsafe conditions for pedestrians, cyclists, transit users, and others.

(6) Cities, counties, Metro, and state agencies shall consider the expected primary users of an existing or planned transportation facility or segment when making decisions about appropriate transportation facilities and services. In particular:

(a) In areas near schools or other locations with expected concentrations of children, or areas with expected concentrations of older people or people with disabilities, cities, counties, Metro, and state agencies must prioritize safe, protected, and continuous pedestrian and bicycle networks connecting to key destinations, including transit stops.

(b) In industrial areas, along routes accessing key freight terminals, and other areas where accommodations for freight are needed, cities, counties, Metro, and state agencies must consider the needs of freight users. Pedestrian, bicycle, and public transportation system connections must be provided in industrial areas at a level that provides safe access for workers.

Statutory/Other Authority: ORS 197.040

Statutes/Other Implemented: ORS 197.012, ORS 197.180, ORS 197.712 & ORS 468A.205

History:

[LCDD 9-2023, amend filed 11/07/2023, effective 11/07/2023](#)

[LCDD 3-2022, adopt filed 08/17/2022, effective 08/17/2022](#)

[LCDD 2-2022, temporary adopt filed 06/01/2022, effective 06/01/2022 through 11/27/2022](#)

OAR 660-012-0160

Reducing Vehicle Miles Traveled

(1) The following jurisdictions are exempt from the requirements of this rule:

(a) Cities under 5,000 population;

(b) Counties under 5,000 population within urban growth boundaries but outside of incorporated cities; and

(c) Counties under 10,000 population within urban growth boundaries but outside of incorporated cities.

(2) When a city or county, makes a major update to a transportation system plan as provided in OAR 660-012-0105, or Metro makes an update to a regional transportation plan as provided in OAR 660-012-0140, they shall use the following requirements to project vehicle miles traveled per capita for the planning period.

(a) The city, county, or Metro must prepare a projection that estimates changes between vehicle miles traveled per capita from the base year and vehicle miles traveled per capita that would result from all projects on the financially-constrained project list prepared as provided in OAR 660-012-0180; and

(b) Projections of vehicle miles traveled per capita must incorporate the best available science on latent and induced travel of additional roadway capacity.

(3) The projections prepared as provided in section (2) must be based on:

(a) Land use and transportation policies in an acknowledged comprehensive plan and in the proposed transportation system plan;

(b) Local actions consistent with the adopted performance targets under OAR 660-012-0910, or OAR 660-044-0110; and

(c) Forecast land use patterns as provided in OAR 660-012-0340.

(4) Cities and counties may only adopt a transportation system plan if the projected vehicle miles traveled per capita at the horizon year using the financially-constrained project list is lower than estimated vehicle miles traveled per capita in the base year scenario.

(5) A city or county is not required to meet the requirements in sections (2) through (4) of this rule if the city or county has selected a financially-constrained project list that does not contain any project that would require review as provided in OAR 660-012-0830(1).

(6) Metro shall adopt a regional transportation plan in which the projected vehicle miles traveled per capita at the horizon year using the financially-constrained project list is lower than the estimated vehicle miles traveled per capita at the base year by an amount that is consistent with the metropolitan greenhouse gas reduction targets in OAR 660-044-0020. Metro may rely on assumptions on future state and federal actions, including the following state-led actions that affect auto operating costs:

(a) State-led pricing policies, and energy prices; and

(b) Vehicle and fuel technology, including vehicle mix, vehicle fuel efficiency, fuel mix, and fuel carbon intensity.

Statutory/Other Authority: ORS 197.040

Statutes/Other Implemented: ORS 184.899, ORS 197.012, ORS 197.712 & ORS 486A.205

History:

[LCDD 3-2022, adopt filed 08/17/2022, effective 08/17/2022](#)

[LCDD 2-2022, temporary adopt filed 06/01/2022, effective 06/01/2022 through 11/27/2022](#)

OAR-660-012-0215

Transportation Performance Standards

(1) This rule applies to transportation performance standards that cities and counties use to review comprehensive plan and land use regulation amendments as provided in OAR 660-012-0060. If a city or county requires applicants to analyze transportation impacts as part of development review in acknowledged local land use regulations, then that review must include evaluation of the performance standards established under this rule. This rule applies to transportation performance standards that Metro uses to review functional plan amendments as provided in OAR 660-012-0060.

(2) Cities and counties shall adopt transportation performance standards. The transportation performance standards must support meeting the targets for performance measures set as provided in OAR 660-012-0910. The transportation performance standards must include these elements:

(a) Characteristics of the transportation system that will be measured, estimated, or projected, and the methods to calculate their performance;

(b) Thresholds to determine whether the measured, estimated, or projected performance meets the performance standard. Thresholds may vary by facility type, location, or other factors. Thresholds shall be set at the end of the planning period, time of development, or another time; and

(c) Findings for how the performance standard supports meeting the targets for performance measures set as provided in OAR 660-012-0910.

(3) Cities, counties, Metro, and state agencies shall adopt two or more transportation performance standards. Metro may adopt regional performance standards in a functional plan for use across regional and local plans. At least one of the transportation performance standards must support increasing transportation options and avoiding principal reliance on the automobile. The transportation system plan must clearly establish how to apply the multiple performance standards to a proposal that meets some, but not all, of the transportation performance standards. The transportation performance standards must evaluate at least two of the following objectives for the transportation system, for any or all modes of transportation:

(a) Reducing climate pollution;

(b) Equity;

(c) Safety;

(d) Network connectivity;

(e) Accessibility;

(f) Efficiency;

(g) Reliability; and

(h) Mobility.

Statutory/Other Authority: ORS 197.040

Statutes/Other Implemented: ORS 197.012, ORS 197.180 & ORS 197.712

History:

[LCDD 9-2023, amend filed 11/07/2023, effective 11/07/2023](#)

[LCDD 3-2022, adopt filed 08/17/2022, effective 08/17/2022](#)

[LCDD 2-2022, temporary adopt filed 06/01/2022, effective 06/01/2022 through 11/27/2022](#)

OAR 660-012-0905

Land Use and Transportation Performance Measures

(1) Cities, counties, and Metro that have a land use and transportation scenario approved by the commission as provided in OAR 660-044-0050 or OAR 660-044-0120 shall report on the performance measures from the approved regional scenario plan.

(2) Cities and counties that do not have a land use and transportation scenario approved by the commission as provided in OAR 660-044-0120 shall report on the specific actions, including capital improvements and the adoption of policies or programs that they have or will undertake to reduce pollution and increase equitable outcomes for underserved populations. At a minimum, this report must include the following performance measures:

(a) Compact Mixed-Use Development

(A) Number of publicly supported affordable housing units in climate-friendly areas.

(B) Number of existing and permitted dwelling units in climate-friendly areas and percentage of existing and permitted dwelling units in climate-friendly areas relative to total number of existing and permitted dwelling units in the jurisdiction.

(C) Share of retail and service jobs in climate-friendly areas relative to retail and service jobs in the jurisdiction.

(b) Active Transportation

(A) Percent of collector and arterial streets in climate-friendly areas and underserved population neighborhoods with bicycle and pedestrian facilities with Level of Traffic Stress 1 or 2.

(B) Percent of collector and arterial streets in climate-friendly areas and underserved population neighborhoods with safe and convenient marked pedestrian crossings.

(C) Percent of transit stops with safe pedestrian crossings within 100 feet.

(c) Transportation Options

(A) Number of employees covered by an Employee Commute Options Program.

(B) Number of households engaged with Transportation Options activities.

(C) Percent of all Transportation Options activities that were focused on underserved population communities.

(d) Transit

(A) Share of households within one-half mile of a priority transit corridor.

(B) Share of low-income households within one-half mile of a priority transit corridor.

(C) Share of key destinations within one-half mile of a priority transit corridor.

(e) Parking Costs and Management: Average daily public parking fees in climate-friendly areas.

(f) Transportation System

(A) Vehicle miles traveled per capita.

(B) Percent of jurisdiction transportation budget spent in climate-friendly areas and underserved population neighborhoods.

(C) Share of investments that support modes of transportation with low pollution.

Statutory/Other Authority: ORS 197.040

Statutes/Other Implemented: ORS 197.012, ORS 197.712 & ORS 468A.205

History:

[LCDD 9-2023, amend filed 11/07/2023, effective 11/07/2023](#)

[LCDD 3-2022, adopt filed 08/17/2022, effective 08/17/2022](#)

[LCDD 2-2022, temporary adopt filed 06/01/2022, effective 06/01/2022 through 11/27/2022](#)

APPENDIX C: DRAFT PERFORMANCE MEASURE AND PERFORMANCE STANDARD APPLICATION GUIDANCE

DRAFT LIVABLE STREETS ANALYSIS AND RECOMMENDATIONS

Date: May 10, 2024

To: TSP Advisory and Technical Committees

From: Kittelson & Associates, Inc.

Project: Milwaukie Transportation System Plan

Subject: Livable Streets Analysis and Recommendations Memorandum

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PURPOSE OF THIS MEMORANDUM

As one of several steps in the development of Milwaukie's new Transportation System Plan (TSP), this memorandum focuses on Milwaukie's existing street design policies and standards. These policies and standards guide the planning, design, and construction of the public roadways in the City. The purpose of this memorandum is to review the documents that support and contain the street design policies and standards and assess their content against regional guidance, best practices, and adherence to modern design principles. Of particular focus are the principles contained within Livable Streets design concepts.

Following advisory committee and public review/feedback, the assessment findings and recommendations will be incorporated into the preparation of the new Milwaukie TSP.

WHAT IS A LIVABLE STREET?

Historically, many transportation systems were built before the adoption of modern roadway design standards or planned and built based on a rigid set of standards that did not consider the land use context, instances of constrained rights of way, and the needs of the neighborhoods that they served. The result was an underbuilt travel corridor, a corridor that prioritized motor vehicles, and/or a corridor that lacked multimodal accommodations.

In more recent years, jurisdictions have started to move away from these rigid design standards in favor of planning and design parameters that are flexible and compatible with the unique characteristics of the adjacent land uses. Commonly referred to as Livable Streets, this design concept focuses on the planning and design of roadways that are¹:

- Safe and comfortable places to travel for people of all ages and abilities
- Designed to encourage slower travel speeds
- Welcoming, spaces for people of all backgrounds
- Places to interact and linger
- Designed to foster a sense of community, ownership, and responsibility
- Designed to protect the environment
- Able to adapt to new mobility technologies
- Resilient to changing climates and the impacts of weather events

Livable Streets Assessment

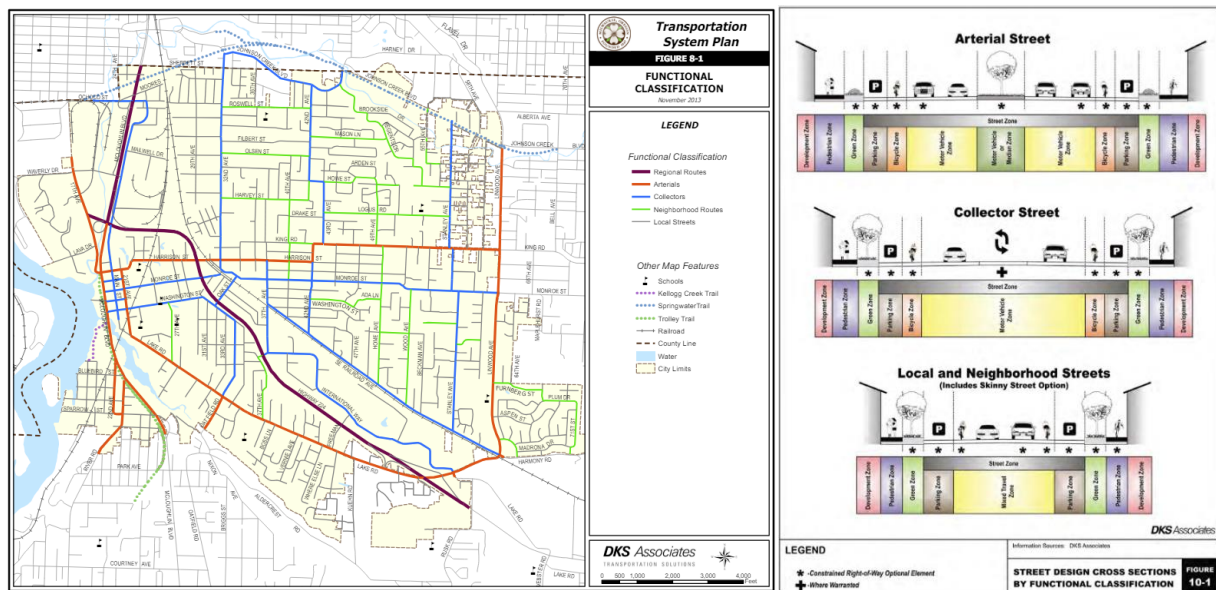
To ensure Milwaukie's streets are more "livable" in the context of creating "safe and comfortable places to travel for people of all ages and abilities", the assessment initially focuses on those documents relevant to the planning, design, and implementation of the transportation system including Milwaukie's adopted TSP, its Public Works Standards, and its Municipal Code. A summary of the assessment findings and recommended changes for local consideration are presented in the following sections of this memorandum.

¹ Source: Metro 2019. *Designing Livable Streets and Trails Guide*.

MILWAUKIE TRANSPORTATION SYSTEM PLAN

The adopted Milwaukie TSP, among many things, guides street design decisions through the establishment of a functional classification plan for City roadways. The functional classification plan establishes “a hierarchy of streets ranging from those that are primarily for travel mobility (arterials) to those that are primarily for access to property (local streets). The functional classification system is developed with the recognition that individual streets do not act independently of each other but form a network of streets that work together to serve travel needs”. The TSP also sets street design policy by defining the typical elements of the different street types, provides guidance on typical widths for these elements, and outlines alternative design treatments that can be considered in various circumstances and constrained environments. Snapshots of the roadway functional classification map and street design cross section details are provided for visual context in Exhibit 1 below. A more detailed explanation and summary of these elements are included in Appendix A of this memorandum.

Exhibit 1 – Milwaukie TSP Functional Classification Map and Street Design Details



TSP Assessment Findings and Recommendations

In general, the adopted TSP’s policy guidance is consistent with the overall principles of the Livable Streets design concepts. Specifically, it already identifies a flexible set of high-level roadway design guidelines, and in most cases, establishes the general parameters for when flexible design treatments should be considered. These design guidelines and parameters have been found to be consistent with modern best practices, they advance Livable Streets design concepts through a recognition and emphasize on flexibility and context sensitive design, and as such, no major overhaul is recommended.

While no major changes are recommended, it is anticipated that as part of the new Milwaukie TSP, the street design policies and design principles in the current adopted TSP will undergo a general update and refresh per additional input from City planning/engineering staff, advisory

committees, and public feedback. As part of this general update/refresh, it recommended that the following elements be added and reorganized.

Neighborhood Greenways

Discussion on the concept of neighborhood greenways is included in the adopted TSP in the Bicycle Element (Chapter 6). Neighborhood greenways are a design concept that primarily benefits bicyclists and other wheeled devices, but their design treatments also provide a more comfortable street environment for other users such as pedestrians.

Neither the adopted TSP nor the *Public Works Standards* (see following section) outline specific performance guidelines for when to consider or apply a neighborhood greenway overlay according to motor vehicle speeds and traffic volumes. To help guide future decision making, it is recommended that the following neighborhood greenway performance guidelines be incorporated into both the new Milwaukie TSP and *Public Works Standards*. These vehicle speed and volume performance guidelines are consistent with application guidelines used in neighboring cities including the City of Portland:

- Vehicle speeds should be no more than 20 mph on all neighborhood greenways.
- The ideal neighborhood greenway has a target volume of 1,000 motor vehicles a day or less.
- Neighborhood greenways can function effectively with added design features with an average of 1,500 motor vehicles per day.

Woonerfs

The adopted TSP does not discuss the street design concept known as a woonerf.

A woonerf is a type of road design that blends the vehicular and pedestrian spaces into one shared space. Typically, there is no formal division between the pedestrian zones and the mixed travel way zones, creating a pedestrian-focused space that is open for vehicles but with the expectation that vehicular travel will be minimal and at much slower speeds. Woonerfs have the following benefits:

- Creates a community-oriented space that is not dominated by vehicular travel.
- Encourages multimodal travel.
- Incorporates outdoor furnishings, landscaping, on-street parking, and lighting. These elements act as traffic calming devices to ensure slow travel speeds.

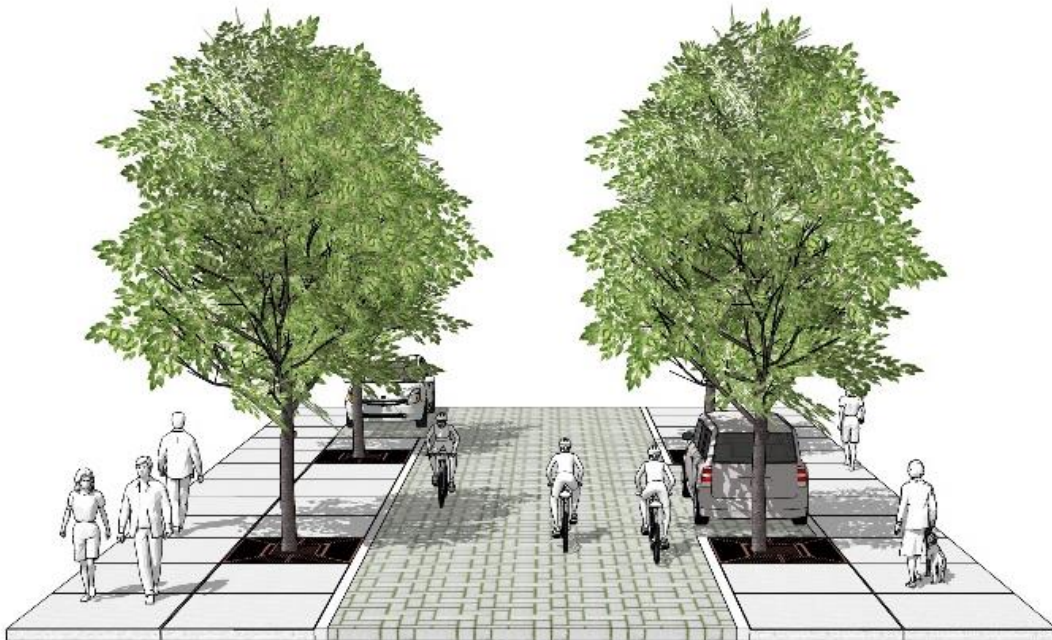
Woonerf treatments should follow the following general design parameters:

- Have a clear and distinct entrance with appropriate signing
- Incorporate different surface treatments
- Eliminate the continuous curb, creating a uniform surface that has no vertical separation between zones
- Incorporate traffic calming measures such as street furniture, landscaping, on-street parking
- Use a design speed for all wheeled vehicles of 10 mph.

- Seating, recreation, and other pedestrian-only areas within the woonerf are delineated and protected by a pavement change, planters, decorative bollards, and/or similar features.
- Do not incorporate speed bumps, humps, or tables; traffic signals; medians; pedestrian crossings; bike lanes
- Automobile parking spaces, if any, are dispersed within the woonerf
- Parking spaces are delineated by physical features such as landscaping, different paving materials

The descriptive inclusion of this design concept along with the visual representation shown in Exhibit 3 is recommended for the new TSP as it will provide policy-based direction for City staff to consider and implement this unique and transformative roadway design concept when appropriate.

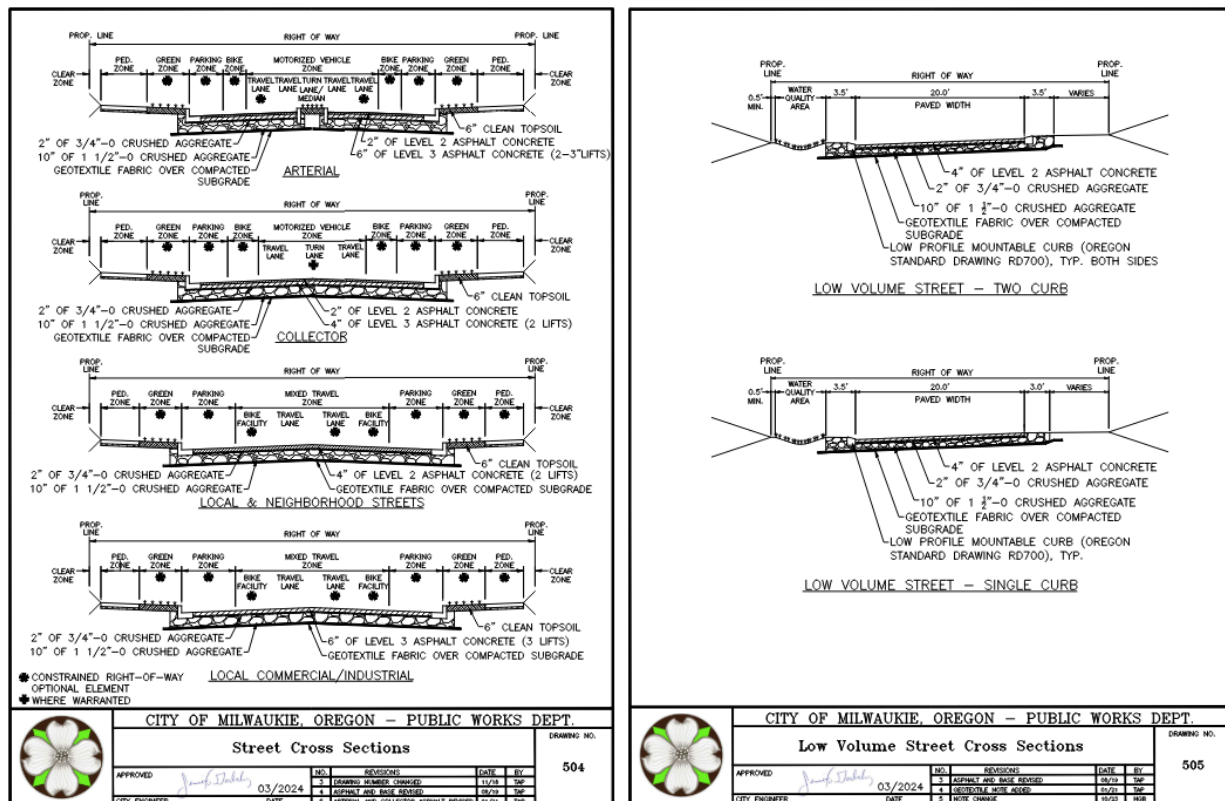
Exhibit 2 – Woonerf Design Concept



MILWAUKIE PUBLIC WORKS STANDARDS

Milwaukie's Public Works Standards, last revised March 2024, include detailed design-based street standards. *Section 5 Street Standards* outline the specific design requirements for street design and are used and referred to by City staff, developers, and roadway design professionals in the process of building and retrofitting streets in the City. Snapshots of the roadway cross section design details are included in Exhibit 3 for visual context. A more detailed explanation of the street design standards and other affiliated design details contained within Section 5 are provided in *Appendix B of this memorandum*.

Exhibit 3 – Public Works Street Cross Sections Design Details



Public Works Standards Assessment Findings and Recommendations

In general, the street standards are rooted in a structured but flexible set of guidelines that ensure all street designs will:

- Provide for safe and efficient travel of the public.
- Be designed to carry the appropriate traffic volumes for each street classification.
- Be designed to meet or exceed minimum guidelines set forth in the American Association of State Highway and Transportation Officials' (AASHTO) latest edition of *A Policy on Geometric Design of Highways and Streets*.
- Facilitate local circulation and discourage nonlocal, through traffic.

- Be designed to the full width cross section (the widest dimension of all individual street elements) as specified by functional classification.
- Be modified only when a full width cross section is not appropriate or feasible. These considerations include:
 1. Options and/or needs for environmentally beneficial and/or green street designs.
 2. Multimodal street improvements identified in the TSP.
 3. Street design alternative preferences identified in Chapter 10 of the adopted TSP, specifically regarding sidewalk and landscape strip improvements.
 4. Existing development pattern and proximity of existing structures to the right-of-way.
 5. Existing right-of-way dimensions and topography.
- Facilitate in-fill development by allowing for the reduction of standards on certain low volumes streets.

These guidelines are generally consistent with the Livable Street design concept and do not require modifications.

At a more detailed level, the design elements of these standards were reviewed and compared to best practices and local/regional guidance documents such as ODOT's *Highway Design Manual*, and Metro's *Designing Livable Streets and Trails Guide*. As shown in Table 1, Milwaukie's current design standards for local and collector streets² fall within the range of ideal dimensions for the various street elements. In one case, recommendations for future modifications are identified in order to provide additional clarity and flexibility.

² Additional facility types and context for application are provided in the background documents and public works standards, however the table focuses on key elements appropriate for local, neighborhood, and collector streets.

Table 1 Public Works Street Design Guidance Findings and Recommendations for Local and Neighborhood Routes

Element	Ideal Dimensions from Regional Guidance and Best Practices	Milwaukie Public Works Standards	Findings	Recommendations
Clear Zone	0.5 – 4 ft. on both sides of the roadway	Minimum of 6 inches	Milwaukie's public works standards offer flexibility within this ideal range.	No changes are recommended.
Pedestrian Zone	5 – 10 ft. with an additional 0.5 – 2 ft. of curb/gutter	<ul style="list-style-type: none"> • 6 ft. sidewalk when curb tight (no adjacent green zone) • 5 ft. when separated by a green zone 	<p>Milwaukie's public works standards for sidewalks fall within this ideal range.</p> <p>The sidewalk standard in the Section 5.0030 design standards table identifies sidewalks will be 6 ft. in width for local and neighborhood collectors. However, the supplemental language identifies a minimum of 5 ft.</p>	The supplemental language should be clarified to indicate local and neighborhood route sidewalks should be 6 ft. in width and can be reduced to 5 ft. when separated from travel lanes by a green zone.
Green Zone	0 – 6 ft. landscape strip	3 - 5 ft.	Milwaukie's public works standards offer flexibility within this range.	No changes are recommended.
Parking Zone	7 - 8 ft. on street parking	6 – 8 ft.	Milwaukie's public works standards generally fall within this ideal range. Flexibility provisions that allow 6 ft. parking lanes in residential zones where needed to accommodate constrained environments.	No changes are recommended.
Mixed Travel Zone	5 – 9 ft. bike lane 10 – 12 ft. travel lanes	<ul style="list-style-type: none"> • Travel lane - 8 ft. or 10 ft for local streets • Travel lane - 10 ft. for neighborhood streets • Bike Lane: 5 ft. 	Milwaukie's public works standards fall within this range and offer flexibility within this ideal range for the accommodation of narrower bike and travel lane widths.	No changes are recommended.

Local/Neighborhood Street and Collector Design Illustrations

While the *Section 5 Street Design Standards* table and the accompanying Street Cross Sections identify a range of design guidelines for local, neighborhood, and collector streets, it is recognized that these particular street types often require the greatest level of flexibility and creativity given the unique travel needs and right of way constraints in the City. Based on recent and on-going street improvement projects, a visualization of several ideal local, neighborhood, and collector street cross sections have been prepared for potential inclusion in the new Milwaukie TSP. These visual cross sections are not meant to replace the street design cross sections/policy guidance in the TSP, nor are they meant to replace the more detailed street design standards in the Section 5 of the Public Works Standards. They are however presented to visually illustrate a range of design treatments that could be considered by City staff when planning for and designing different local street, neighborhood street, and collector street improvement projects. These design treatments have been prepared to be in alignment with the City's general design principles, but they are also rooted in the Livable Streets design concepts which focus on the provision of flexible, safe, comfortable, and inclusive spaces for travelers of all abilities.

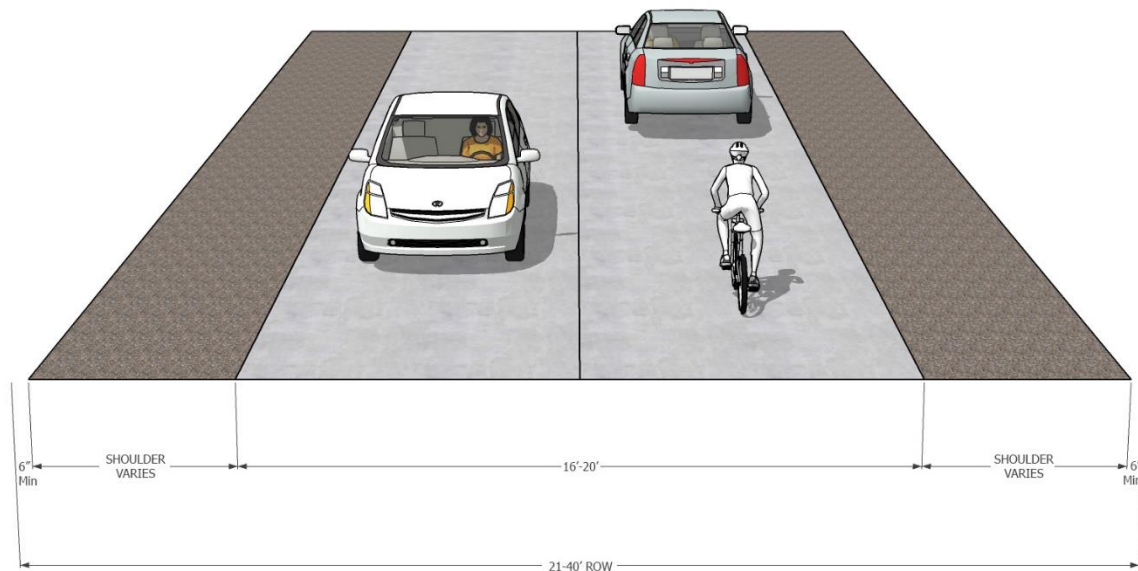
Local and Neighborhood Street Cross-Sections

The cross sections below (Figure 1 through Figure 5) build on the standard cross sections included in the Public Works Standards to provide illustrative examples of local and neighborhood street cross sections that the City can consider for planning and implementation purposes.

Unenhanced Local Street

Figure 1 illustrates an unimproved local street cross section that would apply to existing streets in the City. This cross section recognizes a minimum design allowance for specific situations where a full local street upgrade is not feasible or necessary and overall traffic volumes and speeds are very low.

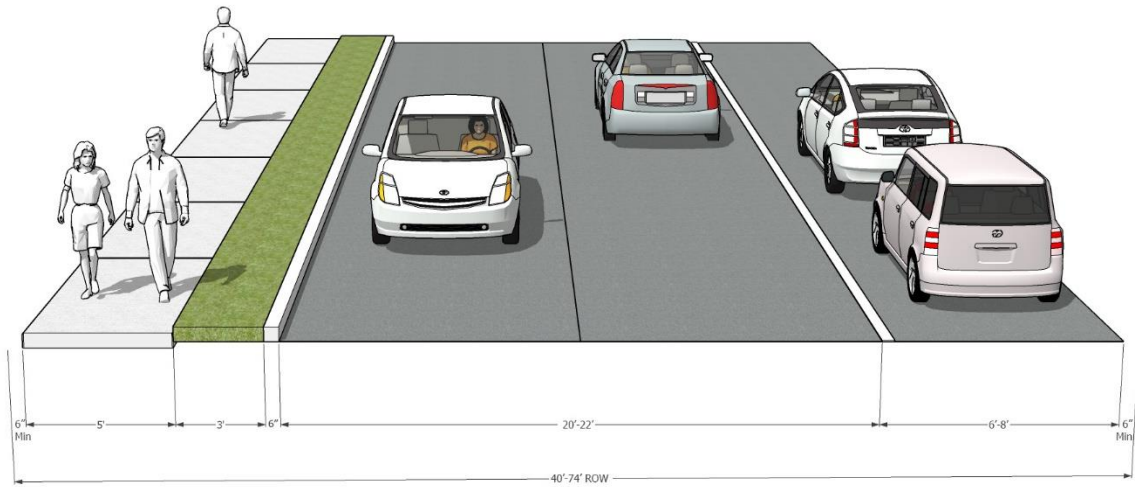
Figure 1 Local Street - Unimproved



Local/Neighborhood Street with Sidewalks on One Side

Figure 2 illustrates a local/neighborhood street cross section with a sidewalk on one side of the roadway and the accommodation of on-street parking on the other side. Bicyclists would share the roadway with vehicles. This cross section is appropriate for low traffic volumes and speeds. It could be a design application for a neighborhood greenway.

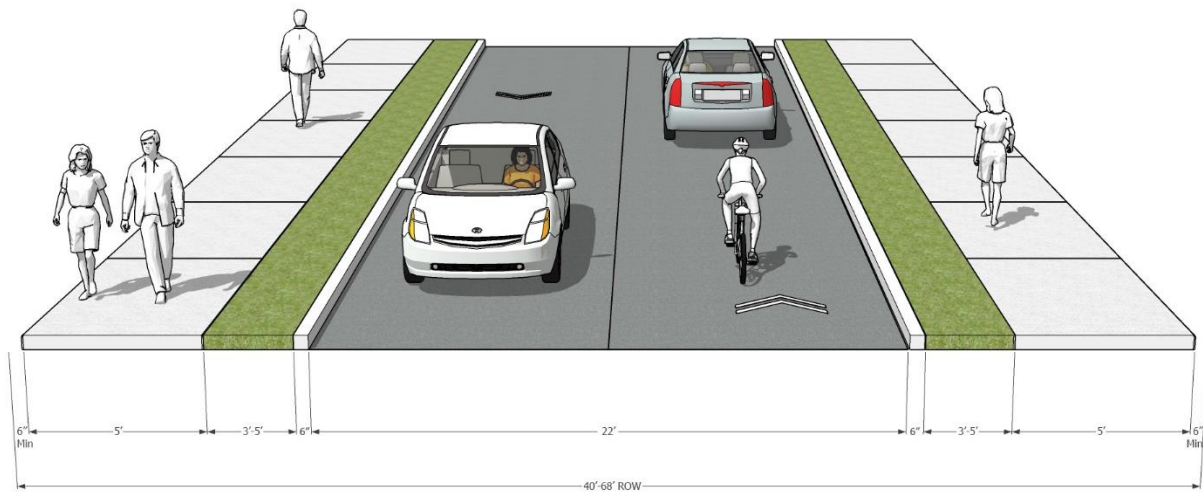
Figure 2. Local/Neighborhood Streets with Sidewalks on One Side



Local/Neighborhood Street with Sidewalks on Both Sides

Figure 3 illustrates a local/neighborhood street cross section, enhanced to provide separate sidewalk facilities for people walking. Bicyclists would share the roadway with vehicles. This cross section does not include on-street parking and would therefore only be appropriate on certain neighborhood streets that are not anticipated to have on-street parking needs. This cross section is appropriate for low traffic volumes and speeds. It could be a design application for a neighborhood greenway.

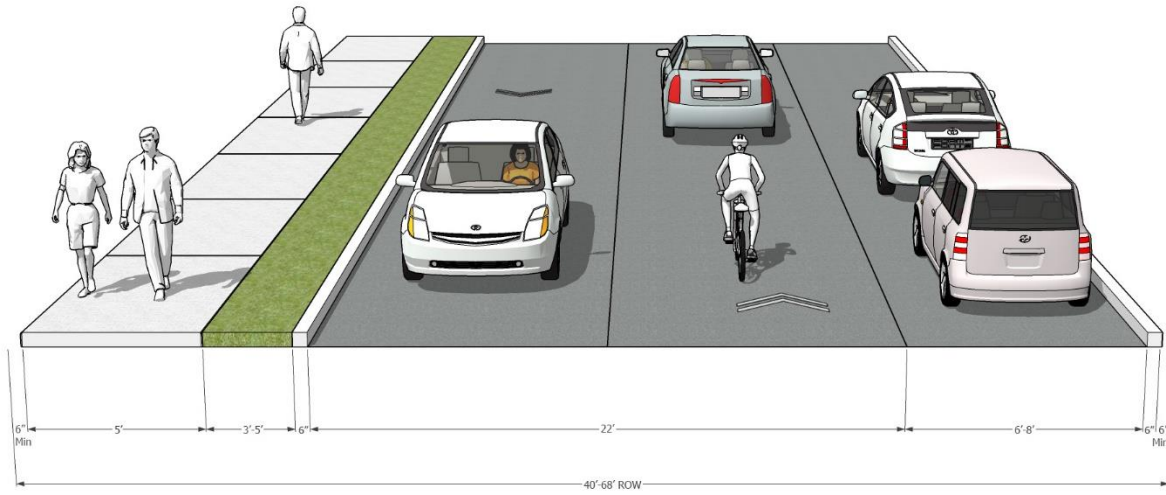
Figure 3. Local/Neighborhood Streets with Sidewalks on Both Sides



Local/Neighborhood Streets with Sidewalks and On-Street Parking

Figure 4 illustrates a local/neighborhood street cross section, enhanced to provide on-street parking and separate facilities for people walking. Bicyclists would share the roadway with vehicles. This cross section is appropriate for local and neighborhood streets with low traffic volumes and speeds. It could be a design application for a neighborhood greenway.

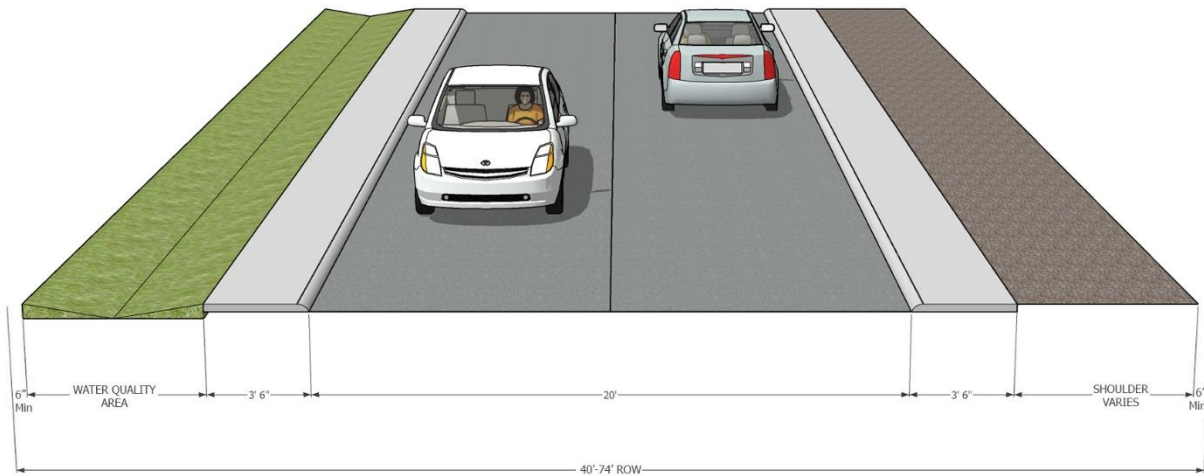
Figure 4. Local/Neighborhood Street with Sidewalks and On-Street Parking



Low Volume/Shared Street

Figure 5 illustrates a low volume street cross section. The Low Volume Street (LVS) standard is not intended to be used in lieu of one of the City's local street standard, but is intended to facilitate infill development in situations where development to the assigned standard would likely preclude such development. Appropriate for situations where traffic volumes and speeds should be considerably lower than the standards that allow 20 MPH streets.

Figure 5. Low Volume Street



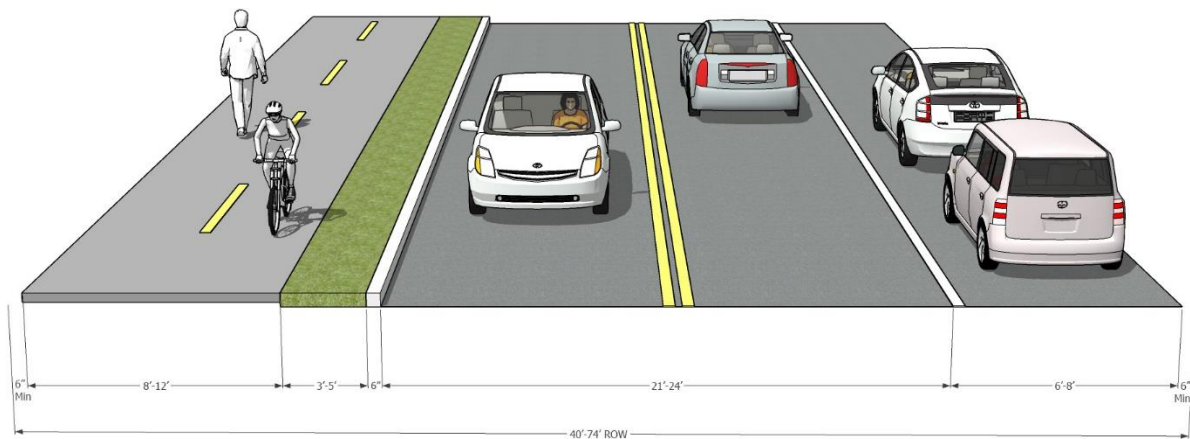
Collector Street Cross-Sections

The cross sections below (Figure 6 through Figure 9) build on the standard cross sections included in the Public Works Standards to provide illustrative examples of potential collector street cross sections.

Collector Street with Multiuse Use Path

Error! Reference source not found. Figure 6 illustrates a collector street, enhanced to provide separate facilities for people walking and biking on one side of the roadway while maintaining one lane of on-street parking. This cross section is appropriate for collector streets with moderate traffic volumes and speeds. It could be a design application in a constrained right of way setting when there is a need for enhanced bicycle accommodations.

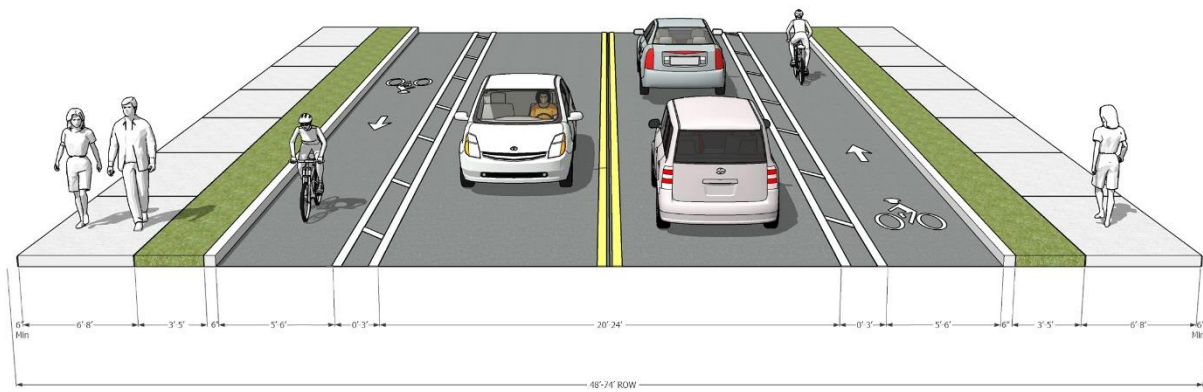
Figure 6. Collector Street with a Shared Use Path



Collector Street with Pedestrian and Bicycle Facilities

Figure 7 illustrates a collector street cross section, enhanced to provide more traditional sidewalk and bicycle facilities for multimodal travel. Right of way permitting, the bicycle lanes could be designed as buffered bicycle lanes. It does not include on-street parking. This cross section is appropriate for collector streets (and arterials in some settings) with moderate traffic volumes and speeds.

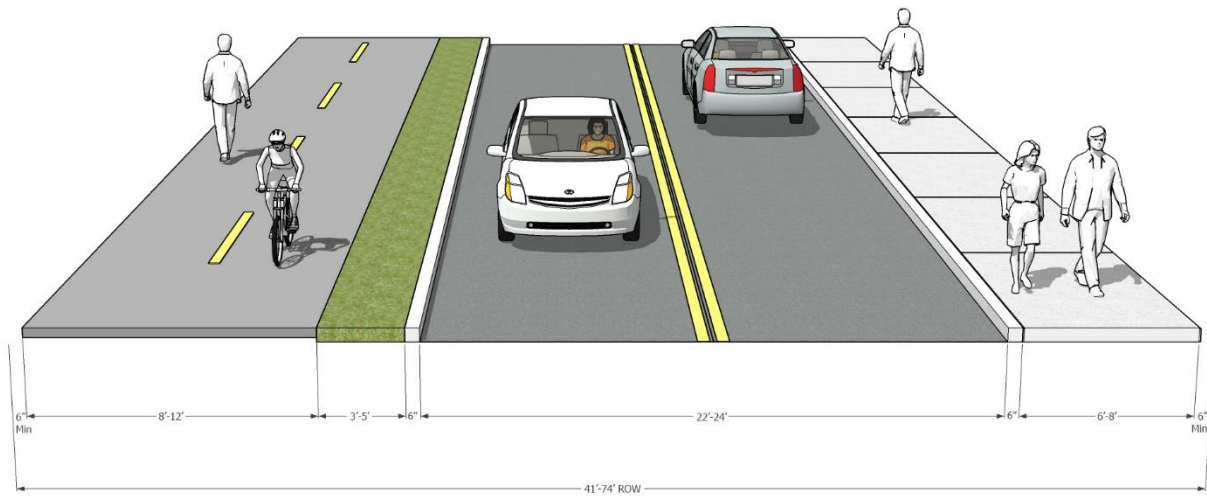
Figure 7. Collector Street with Separate Pedestrian and Bicycle Facilities



Collector Street with Multiuse Path on One Side

Figure 8 illustrates a collector street cross section, enhanced to provide a separate multiuse path for walking and biking on one side of the roadway and a simple sidewalk on the other. This cross section is appropriate for collector streets with moderate traffic volumes and speeds when there is a need for enhanced bicycle accommodations.

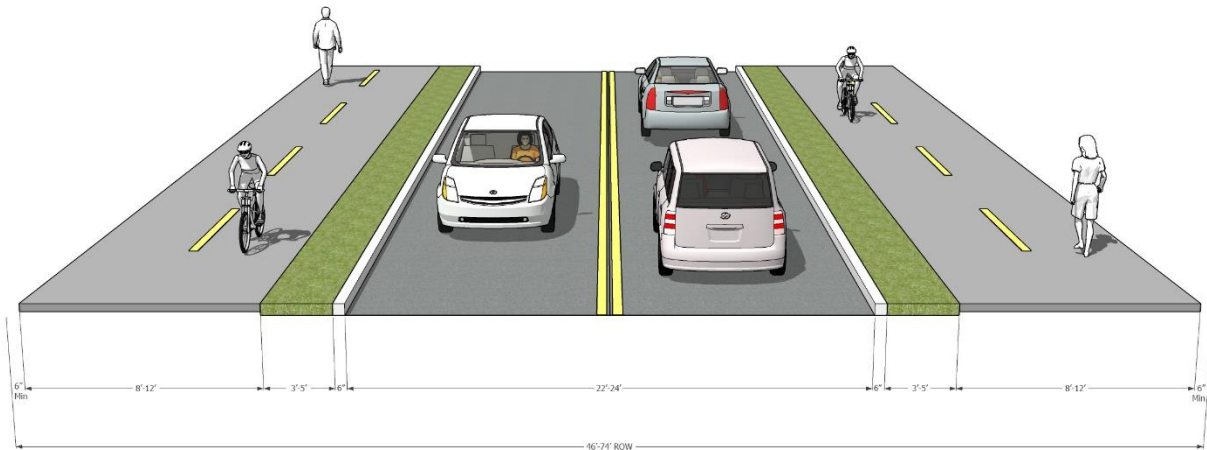
Figure 8. Collector Street with Multiuse Path on One Side



Collector Street with Multiuse Path on Both Sides

Figure 9. illustrates a collector street cross section, enhanced to provide separate facilities for people walking and biking on both sides of the roadway. This cross section is appropriate for collector streets (and arterials in some settings) with moderate to high traffic volumes/speeds and where there is a need for enhanced bicycle accommodations.

Figure 9. Collector Street with Multiuse Paths on Both Sides



Code Modifications

This is a placeholder for draft code content after confirming cross sections/standards with the committees.

NEXT STEPS

This memorandum will be reviewed by the Transportation System Technical and Advisory Committees. Following acceptance of the local street design standard recommendations, the project team will begin the transportation system conditions and needs/gaps analysis.

APPENDIX A:

MILWAUKIE TRANSPORTATION SYSTEM PLAN

The adopted Milwaukie Transportation System Plan is a policy document that includes guidance on street design decisions through the establishment of a functional classification plan for City roadways; defining street elements, providing guidance on typical widths for these elements, and outlining various traffic calming and neighborhood traffic management techniques. These elements can all be found in adopted TSP: Chapter 8 Street Network, Chapter 10 Street Design, Chapter 5 Pedestrian Element, Chapter 6 Bicycle Element, and Chapter 11 Neighborhood Traffic Management.

TSP Street Design Policy/Guidance

Chapter 10 Street Design describes the importance of street design, why it matters, and the street design options available in Milwaukie. Figure 10 illustrates Milwaukie's street design cross sections. These cross sections provide a policy framework rather than specific design details. As shown, all streets are defined to include different design elements consisting of the following:

- Development Zone -The development zone is not in, but adjoins, the public right-of-way. Access to the development zone is almost always through the public right-of-way in the form of a driveway or sidewalk.
- Pedestrian Zone - The pedestrian zone is the public space between the development zone and the green zone. This area should support pedestrian activities by providing a comfortable space for walking, socializing, and accessing private property and buildings.
- Green Zone - The green zone is the public space that separates the pedestrian zone from the street zone. It functions as a buffer between pedestrians and motor vehicle, bicycle, and other street zone users. Depending on the context, it can accommodate street trees, plantings, utilities, and space to manage stormwater runoff.
- Street Zone - The street zone is the primary travel way for motor vehicles and bicycles. Depending on the classification of street, it may contain parking lanes, turning lanes, travel lanes, and bike lanes or mixed vehicle lanes that include bicycles.

While the TSP street design cross sections do not specify widths or ranges of widths for these zones (those are formally defined in the Milwaukie *Public Works Standards*), they do identify typical widths as summarized in Table 2.

Figure 10. Milwaukie TSP Street Design Cross Sections

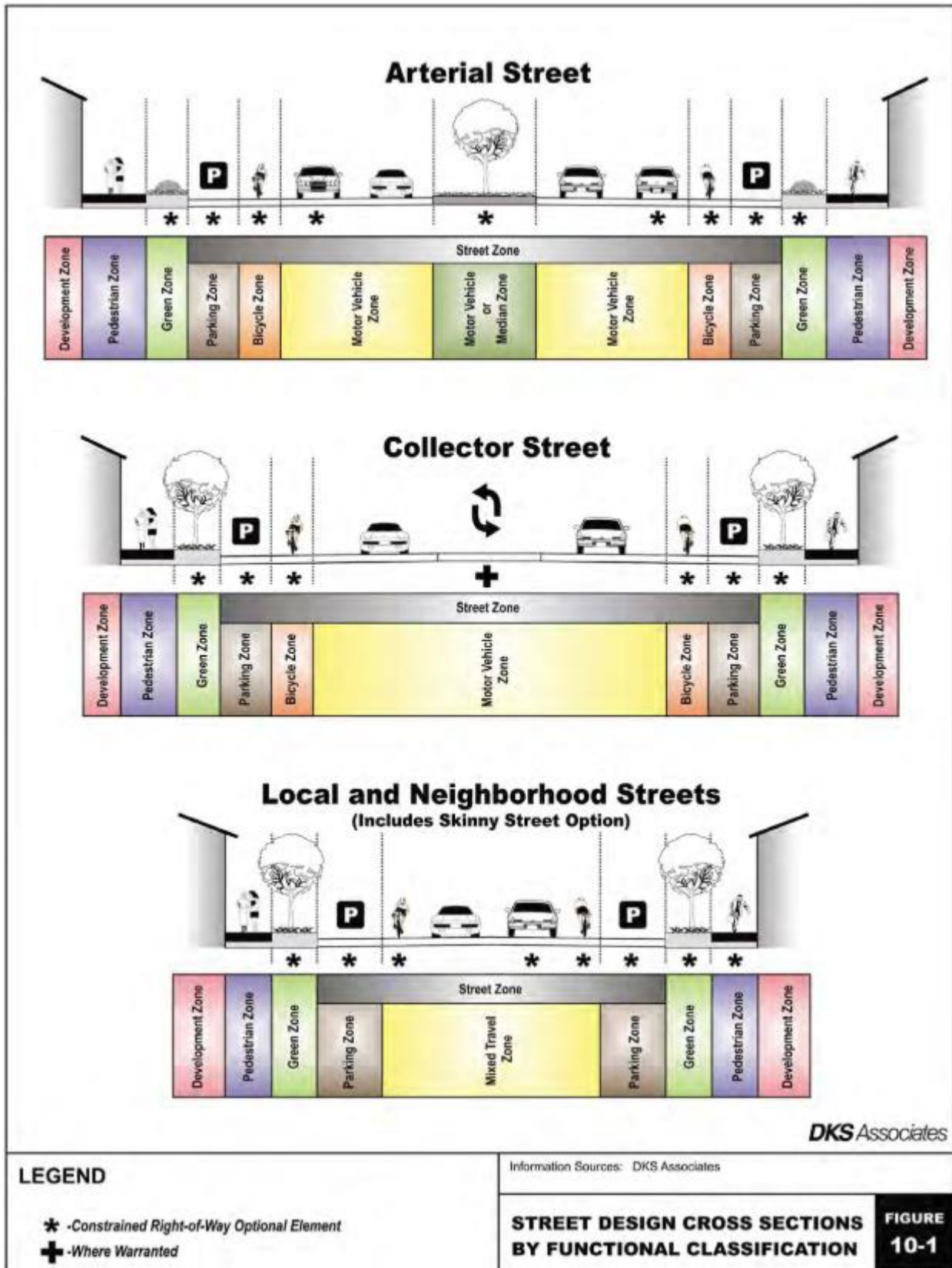


Table 2. Local Street Design Guidance from the Milwaukie TSP

Element	Typical Width	Policy Notes
Development Zone	Varies	The development zone is outside the public right of way. In commercial or industrial zones, a building face may clearly define the edge of the right-of-way. In residential zones, the outer edge of the right-of-way is often not clearly or accurately marked.
Pedestrian Zone	5 ft. when adjacent to a green zone; 6 ft. when adjacent to a street zone	Pedestrian zones should be wider in dense commercial zones and on streets with high traffic volumes and speeds and may be narrower on local streets with low traffic volumes.
Green Zone	At least 5 ft.	Green zones offers a place to locate street trees, bike racks, street furniture, transit amenities, utilities, and plantings designed to manage stormwater runoff.
Parking Zone	6 - 8 ft.	For skinny streets, streets can accommodate one-way travel at a time with parking on one or both sides of the roadway.
Street Zone (including the mixed travel zone)	Bicycle lane - 5-6 ft. Travel lane - 9-12 ft. Shared travel lane - 14-16 ft.	The street zone also contains pedestrian traffic at street intersections and midblock pedestrian crossings. The street zone may also contain green street treatments or traffic management devices to slow traffic or deter cut-through traffic.

One critical element recognized by the TSP is the importance of flexibility. Since the majority of Milwaukie's local street grid has already been developed (much of which without modern bicycle, pedestrian, or stormwater facilities), it can be difficult to upgrade streets due to insufficient right of way, cost, and topographic circumstances. The TSP therefore includes the following policy framework that allows for flexible parameters and decision-making³.

- *Maintain flexibility in street design standards to allow for local design preferences and to avoid costly and time-consuming variance process requirements.*
- *Balance citywide needs, local design preferences, and best practices when utilizing street design standards.*
- *Provide for public involvement in the utilization of street design standards and during the design phase of street-related Capital Improvement Projects.*
- *Consider maintenance costs and issues when utilizing design standards.*
- *Utilize design standards, including alternative designs, which accommodate emergency response routes and needs.*
- *Require a minimum of one-sided pedestrian facilities on all streets.*
- *Require green zones and green street treatments where appropriate and practical.*
- *Maintain design consistency along a street's length where appropriate.*

³ Source: 2018 Milwaukie Transportation System Plan, Chapter 10: Street Design

Street Design Alternatives

The TSP outlines several alternative design guidelines involving the accommodation of green streets, skinny streets, bicyclists, and green ways.

Green Streets

Green streets are special design features that accommodate stormwater management features in the roadway right-of-way where it can be treated through natural biological processes.

Green street treatments are appropriate for all levels of roadway classifications.

Finding: While limited in scope and detail, the recognition of the importance of green streets as a beneficial environmental feature is consistent with Livable Streets design concepts and should be carried forward as part of the TSP update.

Skinny Streets

The TSP recognizes the importance of allowing for narrower or skinny streets when there are areas with limited right of way or physical constraints that prevent full width accommodations. In these situations, the TSP identifies the following circumstances when skinny street accommodations are appropriate:

- Low vehicular volumes and speeds
- Limited to local or neighborhood streets
- One-way couplet situations

Finding: The recognition of the importance of skinny streets as a flexible design treatment and the circumstances in which they should be considered is consistent with Livable Streets design concepts and should be carried forward as part of the TSP update.

Bicycle Accommodations

The TSP identifies the need to accommodate the many different types of bicyclists, skill levels and trip types by providing adequate facilities for all. Different bicycle facility types recognized by the TSP include the following:

- Multi-use paths – off street routes, typically recreation focused, appropriate for all user groups
- Cycle tracks – exclusive bike facilities that are separated from vehicle traffic
- Bike lanes – striped area within the roadway right of way for exclusive bicycle use
- Shared travelways – roadways where vehicles and bicyclists share the same travel space
- Neighborhood greenways - lower-order, lower-volume streets with various treatments to promote safe and convenient bicycle travel

Finding: The TSP provides general guidance on the application and typical widths of these bicycle accommodations and should be carried forward as part of the TSP update.

Neighborhood Greenways

Within the Bicycle Element of the TSP, neighborhood greenways have been defined and designated for select roadways in Milwaukee. Neighborhood greenways are described as having the following characteristics:

- Lower-order, lower-volume streets with various treatments to promote safe and convenient bicycle travel and enhance pedestrian travel as well.
- Usually accommodate bicyclists and motorists in the same travel lanes, often with no specific vehicle or bicycle lane delineation.
- Assign higher priority to through bicyclists, with secondary priority assigned to motorists.
- Include treatments to slow vehicle traffic to enhance the bicycling environment.
- Traffic controls along a neighborhood greenway assign priority to bicyclists while encouraging through-vehicle traffic to use alternate parallel routes.
- Work best in well-connected street grids, where riders can follow reasonably direct and logical routes and where higher-order, parallel streets exist to serve through-vehicle traffic.

The TSP does not define thresholds or specific design standards for neighborhood greenways, but it does identify potential treatments falling into the following five application levels:

- Level 1: Signage (e.g., wayfinding and warning signs along and approaching the neighborhood greenway).
- Level 2: Pavement markings (e.g., directional pavement markings, shared lane markings).
- Level 3: Intersection treatments (e.g., signalization, curb extensions, refuge islands).
- Level 4: Traffic calming (e.g., speed humps, mini traffic circles).
- Level 5: Traffic diversion (e.g., choker entrances, traffic diverters).

Finding: Discussion on the concept of neighborhood greenways is currently incorporated in Chapter 6 Bicycle Element. While primarily a design concept that benefits bicyclists, the supporting policy statements and design parameters would be more visible and impactful as a component of the Street Design Alternatives section in Chapter 10 Street Design.

In addition to potential reorganization of the neighborhood greenway guidelines, it is noted that neither the TSP nor the *Public Works Standards* outline specific performance guidelines for when to consider or apply a neighborhood greenway overlay according to motor vehicle speeds and traffic volumes. To help guide future decision making, it is recommended that the following neighborhood greenway performance guidelines be incorporated into the Milwaukee TSP update. These vehicle speed and volume performance guidelines are consistent with application guidelines used in neighboring cities including the City of Portland:

- *Vehicle speeds should be no more than 20 mph on all neighborhood greenways.*
- *The ideal neighborhood greenway has a target volume of 1,000 motor vehicles a day or less.*
- *Neighborhood greenways can function effectively with added design features with an average of 1,500 motor vehicles per day.*

APPENDIX B: MILWAUKIE PUBLIC WORKS STANDARDS

Milwaukie's *Public Works Standards*, last revised March 2024, includes detailed design-based street standards for how to build and retrofit streets in the City. For reference, Figures 11-13 illustrate the street cross section graphics and street design details contained in the Public Works Standards.

Figure 11. Street Cross Sections from Public Works Standards

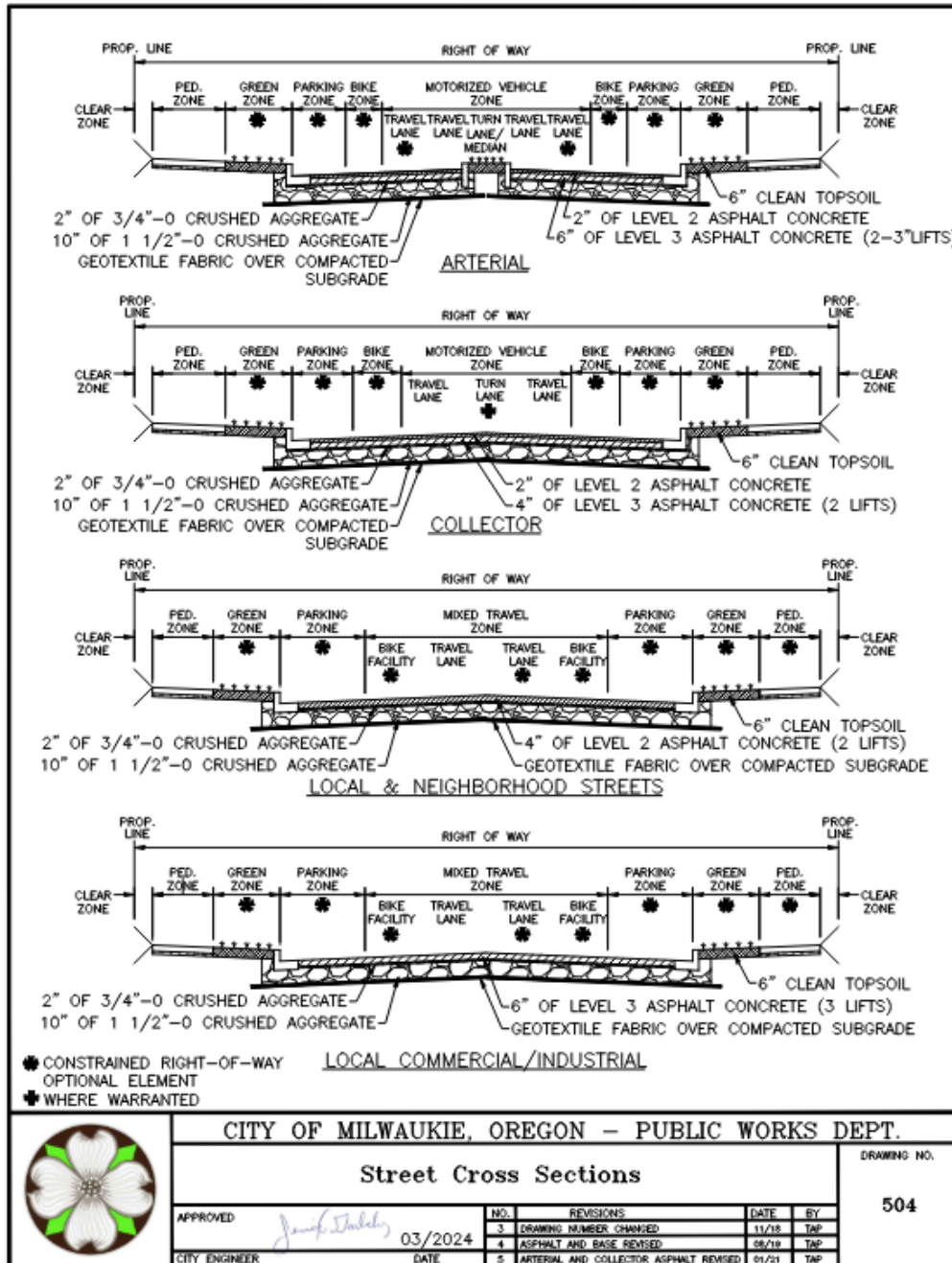


Figure 12. Low Volume Street Cross Sections from the Public Works Standards

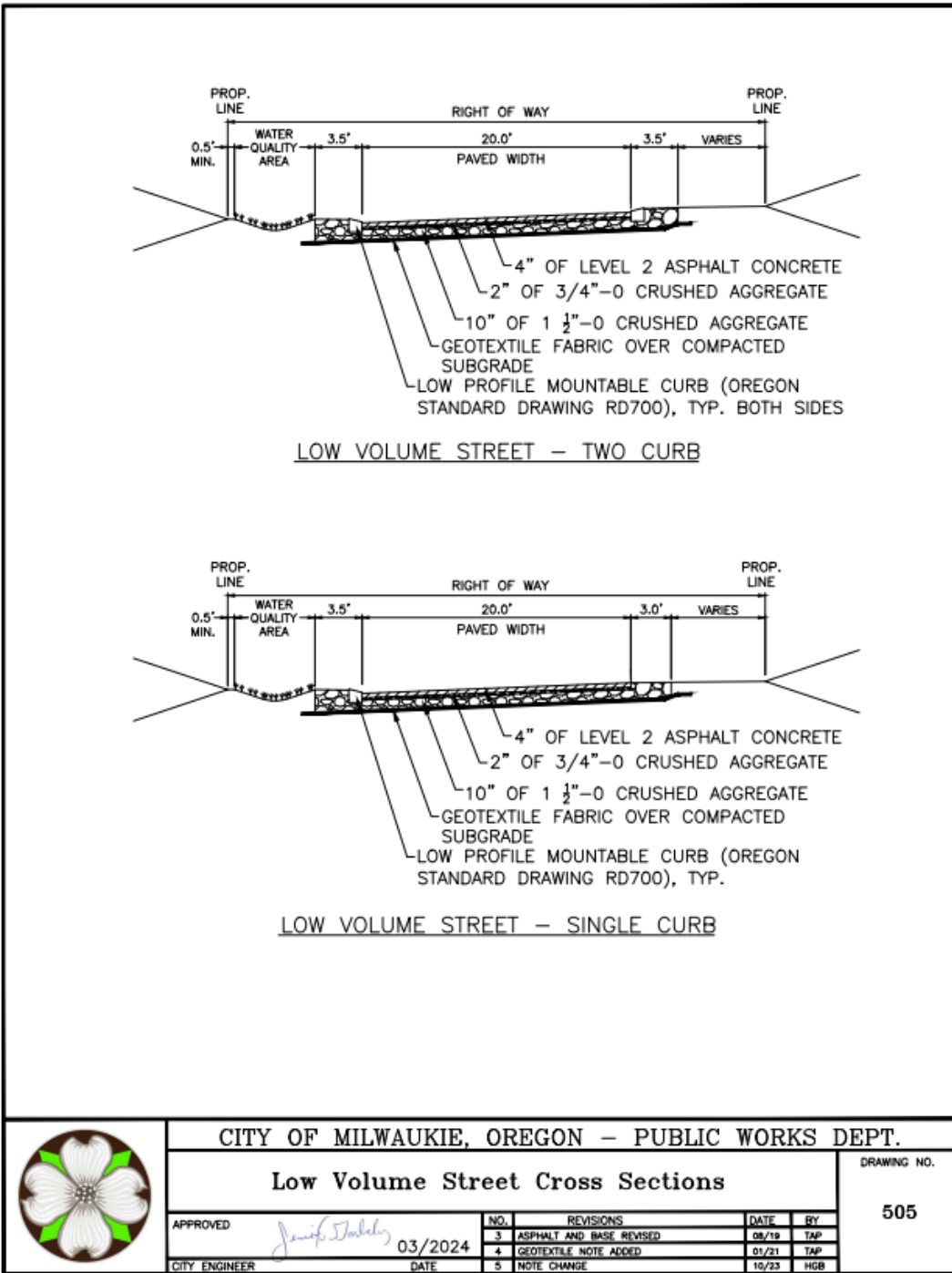


Figure 13. Street Design Elements and Dimensional Standards for Street Cross Sections by Functional Classification

Street Design Elements and Standards							
Street Classification	Full-Width Right-of-Way Dimension	Individual Street Elements					
		Travel Lane (Center Lane)	Bike Lane	On-Street Parking	Landscape Strips	Sidewalk Curb Tight	Sidewalk Setback
Arterial	54'-89'	11'-12' (12'-13')	5'-6'	6'-8'	3'-5'	8'-10'	6'
Collector	40'-74'	10'-11'	5'-6'	6'-8'	3'-5'	8'	6'
Neighborhood	20'-68'	10'	5'	6'-8'	3'-5'	6'	5'
Local	20'-68'	8' or 10'	5'	6'-8'	3'-5'	6'	5'
Truck Route	34'-89'	11'-12' (12'-13')	5'-6'	6'-8'	3'-5'	8'-10'	Per Street Classification
Transit Route	30'-89'	10'-12' (12'-13')	5'-6'	6'-8'	3'-5'	Per Street Classification	Per Street Classification

The Public Works Standards offer additional standards that supplement and support the dimensional standards shown in Figures 9 and 10 when needed for flexibility. These additional standards are summarized in Table 3.

Table 3. Local and Neighborhood Streets Design Elements According to Public Works Standards

Element	Standard Width	Notes
Clear Zone	Minimum of 6 inches	A clear zone is part of the public right of way and offers an unobstructed area beyond the edge of the multimodal travel area. A minimum of 6 inches will be required between a property line and the street element that abuts it; e.g., sidewalk or landscape strip.
Pedestrian Zone	<ul style="list-style-type: none"> • 6 ft. sidewalk when curb tight (no adjacent green zone) • 5 ft. when separated by a green zone 	<p>Sidewalk widths may be reduced to a minimum of 4 ft. for short distances for the purpose of avoiding obstacles within the public right-of-way including, but not limited to, trees and power poles.</p> <p>An 8' wide multiuse side path can be substituted for the bike lane and setback sidewalk. A 10' wide multiuse side path can be substituted for the bike lane and curb tight sidewalk.</p>
Green Zone	3 - 5 ft.	<p>Landscape strip widths will be measured from the back of curb to the front of sidewalk.</p> <p>Where water quality treatment is provided within the public right-of-way, the landscape strip width may be increased to accommodate the required treatment area.</p>
Parking Zone	6 – 8 ft.	<p>On-street parking in industrial zones will have a minimum width of 8 ft.</p> <p>On-street parking in commercial zones will have a minimum width of 7 ft.</p> <p>On-street parking in residential zones will have a minimum width of 6 ft.</p>

Element	Standard Width	Notes
Mixed Travel Zone	<ul style="list-style-type: none"> • Travel lane - 8 ft. or 10 ft for local streets • Travel lane - 10 ft. for neighborhood streets • Bike Lane: 5 ft. 	<p>A minimum of 10-foot travel lane width will be provided on local streets with no on-street parking.</p> <p>Additional width is required for travel lanes located next to a curb line (1-2 feet).</p> <p>Where shared lanes or bicycle boulevards are planned, up to an additional 6 ft of travel lane width will be provided.</p> <p>Bike lane widths may be reduced to a minimum of 4 ft where unusual circumstances exist and where such a reduction would not result in a safety hazard.</p>

In addition to this flexibility, the following language is provided that gives the City Engineer autonomy in determining when to deviate from these standards when needed to support special circumstances.

The City Engineer will determine the full-width cross section for a specific street segment based on functional classification using the dimensions and standards stated above. The full-width cross section is the sum total of the widest dimension of all individual street elements. If the City Engineer determines that a full-width cross section is not appropriate or feasible, the City Engineer may first reduce individual street elements to the minimum dimensions and standards stated above. If necessary to further reduce the street cross section width, the City Engineer may eliminate individual street elements on one or both sides of the street in accordance with Figure 10-1 of the TSP. When making a street design determination that varies from the full-width cross section, the City Engineer will consider the following:

1. Options and/or needs for environmentally beneficial and/or green street designs.
2. Multimodal street improvements identified in the TSP.
3. Street design alternative preferences identified in Chapter 10 of the TSP, specifically regarding sidewalk and landscape strip improvements.
4. Existing development pattern and proximity of existing structures to the right-of-way.
5. Existing right-of-way dimensions and topography.

Design Assessment Findings

Ideal dimensions of roadway design elements are shown in Table 4 for local and collector streets⁴ based on best practices and general guidance in ODOT's *Highway Design Manual*, and the *Designing Livable Streets and Trails Guide*. As shown in the table, Milwaukie's current design standards fall within the range of ideal dimensions and no changes are needed/recommended.

Table 4. TSP Street Design Guidance Findings

Element	Ideal Dimensions from Regional Guidance and Best Practices	Findings
Clear Zone	0.5 – 4 ft. on both sides of the roadway	Milwaukie's public works standards offer flexibility within this ideal range.
Pedestrian Zone	5 – 10 ft. with an additional 0.5 – 2 ft. of curb/gutter	Milwaukie's public works standards for sidewalks fall within this ideal range and offers flexibility when needed. However, the supplemental language emphasizes a minimum dimension versus a desired dimension.
Green Zone	0 – 6 ft. landscape strip	Milwaukie's public works standards offer flexibility within this range.
Parking Zone	7 - 8 ft. on street parking	Milwaukie's public works standards offer flexibility within this range, but do provide provisions that allow 6' parking lanes in residential zones where needed to accommodate constrained environments.
Mixed Travel Zone	5 – 9 ft. bike lane 10 – 12 ft. travel lanes	Milwaukie's public works standards fall within this range and provide flexibility for the accommodation of narrower travel lane widths. However, the supplemental language emphasizes the minimum dimension for bicycle facilities versus a desired dimension.

⁴ Additional facility types and context for application are provided in the background documents and public works standards, however the table focuses on key elements appropriate for local, neighborhood, and collector streets.

APPENDIX C:

MILWAUKIE MUNICIPAL CODE

The City's street design standards are referenced by the Milwaukie Municipal Code which is the City's main regulatory document. Code sections that regulate street design standards can be found in the following title sections:

Title 12 Streets, Sidewalks, and Public Spaces

Title 12 includes a code provision under section 12.02.010 that indicates all streets constructed in the City shall be constructed in conformance with the applicable public works standards.

Title 17 Land Division

Within this chapter, section 17.28.020 sets design standards for public facility improvements as part of land divisions and boundary changes. This section notes that all land divisions and boundary changes increasing the number of lots will be subject to Chapter 19.700 Public Facility Improvements and the Public Works Standards for improvements to streets, sidewalks, bicycle facilities, transit facilities, and public utilities.

Title 19 Zoning Ordinance

Section 19.700 ensures that development, including redevelopment, provides public facilities that are safe, convenient, and adequate in rough proportion to their public facility impacts. Section 19.701.1 provides standards for transportation facilities and states that design standards for transportation facilities must:

- Protect the functional classification, capacity, and LOS of transportation facilities;
- Ensure transportation facility improvements are provided in rough proportion to development impacts;
- Provide an equitable and consistent method of requiring transportation facility improvements; and
- Ensure that transportation facility improvements accommodate multimodal modes of travel including pedestrian, bicycle, transit, and auto.

Section 19.703.3 clarifies the approval criteria for transportation facility improvements. Either development will provide transportation improvements or mitigation at the time of development that is in rough proportion to its potential impacts (see Section 19.705 for rough proportionality definition), or pay a fee in lieu of construction as allowed by Chapter 13.32.

Section 19.708 contains the City's requirements and standards for improvements to public streets, including pedestrian, bicycle, and transit facilities. As noted in the section, *"The City acknowledges the value in providing street design standards that are both objective and flexible. Objective standards allow for consistency of design and provide some measure of certainty for developers and property owners. Flexibility, on the other hand, gives the City the ability to design streets that are safe and that respond to existing street and development conditions in a way that preserves neighborhood character."*

Section 19.708.2 “contains the street design elements and dimensional standards for street cross sections by functional classification. Dimensions are shown as ranges to allow for flexibility in developing the most appropriate cross section for a given street or portion of street based on existing conditions and the surrounding development pattern. The additional street design standards in Subsection 19.708.2.A augment the dimensional standards contained in Table 19.708.2. The Engineering Director will rely on Table 19.708.2 and Subsection 19.708.2.A to determine the full-width cross section for a specific street segment based on functional classification. The full-width cross section is the sum total of the widest dimension of all individual street elements. If the Engineering Director determines that a full-width cross section is appropriate and feasible, a full-width cross section will be required. If the Engineering Director determines that a full-width cross section is not appropriate or feasible, the Engineering Director will modify the full-width cross section requirement using the guidelines provided in Subsection 19.708.2.B.”

When making a street design determination that varies from the full-width cross section, the Engineering Director shall consider the following:

1. Options and/or needs for environmentally beneficial and/or green street designs.
2. Multimodal street improvements identified in the TSP.
3. Street design alternative preferences identified in Chapter 10 of the TSP, specifically regarding sidewalk and landscape strip improvements.
4. Existing development pattern and proximity of existing structures to the right-of-way.
5. Existing right-of-way dimensions and topography.

PROJECT EVALUATION SAMPLE

A broad set of evaluation criteria were developed based on the Milwaukie TSP Goals and Objectives and the new prioritization factors included in Oregon's Transportation Planning Rule (TPR). A preliminary sample of the evaluation criteria are listed below. Each criteria will be used to assess how the individual transportation projects support the overall goals/objectives statements and prioritization criteria.

Sample Evaluation Table

Goal Statement	Evaluation Criteria ¹	Scoring Key	
Safety System - Improve the safety and comfort of the multimodal transportation network	Improve public safety on Milwaukie's roadway network	+2	The project is expected to have a positive safety impact and is at a location with a history of serious injury crashes and fatalities.
		+1	The project is expected to have a positive safety impact.
		0	The project is expected to have no impact or measurable safety benefit.
	Improve public safety for Milwaukie's vulnerable system users, including pedestrians, bicyclists, transit users, and rollers	+2	The project is expected to have a positive safety impact and is at a location with a history of serious injury crashes and fatalities.
		+1	The project is expected to have a positive safety impact.
		0	The project is expected to have no impact or measurable safety benefit.
Mobility, Accessibility, and Connectivity - Provide an efficient and well-connected multimodal transportation system that works to connect the community to key destinations	Address existing gaps in Milwaukie's multimodal network	+2	The project will fill/partially fill an existing multimodal network gap; is located in the Milwaukie Town Center and/or serves destinations with limited or no multimodal infrastructure.
		+1	The project will fill/partially fill an existing multimodal network gap.
		0	The project is does not address an existing multimodal network gap.
	Improve connections to/from Milwaukie's neighborhoods, schools, parks, transit stops, employment centers, Neighborhood Hubs, and other key destinations	+2	The project will improve connections to/from key destinations; is located in the Milwaukie Town Center and/or serves destinations with limited or no multimodal infrastructure.
		+1	The project will improve connections to/from key destinations.
		0	The project does not involve or improve connections to/from a key destination.
Active, Healthy, Transportation Choices - Establish and/or complete a network of multimodal facilities that make walking, biking, and rolling an attractive, comfortable, healthy, and convenient choice for people of all ages and abilities.	Improve conditions for walking, biking, and rolling on Milwaukie's transportation system	+2	The project measurably improves travel for pedestrians, bicyclists, or rollers; is located in the Milwaukie Town Center or serves areas that have limited or no multimodal infrastructure.
		+1	The project measurably improves conditions for walking, biking, and rolling.
		0	The project does not involve or improve the multimodal infrastructure network.

¹ (PR Prioritization Rewritten in Tone of Milwaukie TSP Goals and Objectives Statements)

Goal Statement	Evaluation Criteria ¹	Scoring Key	
Equitable Transportation - New investments in Milwaukie's transportation system are distributed fairly to reduce or eliminate transportation-related barriers and disparities, especially those experienced by marginalized or underserved populations.	Improve multimodal access and connections to/from Milwaukie's underserved population groups, lower-income neighborhoods, and/or transportation disadvantaged groups.	+2	The project improves access connections to/from underserved population groups, lower-income neighborhoods, and/or transportation disadvantaged groups; and is located in the Milwaukie Town Center or serves areas that have limited or no multimodal infrastructure.
		+1	The project improves access and connections to/from underserved population groups, lower-income neighborhoods, and/or transportation disadvantaged groups.
		0	The project does not involve or impact underserved population groups, lower-income neighborhoods, and/or transportation disadvantaged groups.
Public Transportation - Improve public transit service to, from, and within Milwaukie.	Improve Milwaukie's access to transit service	+2	The project measurably improves access to transit service; is located in the Milwaukie Town Center or an area with limited or no multimodal infrastructure.
		+1	The project measurably improves access to transit service.
		0	The project does not involve or improve access to transit service.
	Improve Milwaukie's transit service	+2	The project increases or improves the quality of transit service to/from and within Milwaukie; is located in the Milwaukie Town Center or an area with no current transit service.
		+1	The project increases or improves the quality of transit service to/from and within Milwaukie.
		0	The project does not involve transit service.
Climate Mitigation and Adaptation – Provide a transportation system that can help reduce pollution and positively impacts the environment.	Preserve the natural environment through reduced vehicle miles traveled (VMT) and greenhouse gas emissions	+2	The project can be expected to have a positive impact on VMT and greenhouse gas emissions; is located within the Milwaukie Town Center
		+1	The project can be expected to have a positive impact on VMT and greenhouse gas emissions
		0	The project has no measurable positive or negative impact on VMT and greenhouse gas emissions
		-1	The project can be expected to a negative impact on VMT and greenhouse gas emissions
	Preserve Milwaukie's natural resources such as trees, streams, wetlands, wildlife corridors, and endangered species	+2	The project can be expected to have a positive impact on natural resources; is located within the Milwaukie Town Center or near environmentally sensitive areas
		+1	The project can be expected to have a positive impact on natural resources
		0	The project has no measurable positive or negative impact on natural resources
		-1	The project can be expected to a negative impact on natural resources
Emergency Preparedness - Develop a multimodal transportation system that provides travel options during normal conditions, natural disasters, or emergencies.	Improve the redundancy and resiliency of Milwaukie's multimodal travel network	+2	The project increases or improves multimodal travel choices during normal or atypical conditions; serves key destinations and/or is located along a key regional travel route
		+1	The project increases or improves multimodal travel choices during normal or atypical conditions
		0	The project has no positive or negative impact on system resiliency and redundancy
Economic Vitality - Develop a transportation system that		+2	The project can be expected to measurably improve the safe and efficient movement of freight; is located in an industrial area or along routes accessing key freight terminals

Goal Statement	Evaluation Criteria ¹	Scoring Key	
supports and facilitates economic activity through the efficient movement of people, goods, and services and encourages people to spend time in key destinations throughout Milwaukie.	Improve the transportation network to ensure the safe and efficient movement of freight to/from and within Milwaukie	+1	The project can be expected to measurably improve the safe and efficient movement of freight
		0	The project has no positive or negative impact on the movement of freight
Fiscal Stewardship and System Management - Make the most of transportation resources by leveraging available funding opportunities, preserve existing infrastructure, and reduce system maintenance costs.	Preserve the transportation network and system maintenance costs	+1	Project is expected to compliment the existing transportation network and/or reduce system maintenance costs.
		0	Project has no positive or negative impact on system preservation and maintenance costs
		-1	Project can be expected to negatively impact the existing transportation network or lead to increased system maintenance costs
Coordination with Local, Regional, and State Partners - Foster and maintain relationships with public and private partners in the common interest of enhancing the city's transportation network.	Coordinate transportation improvements with partnering agencies	+1	Project is consistent with existing or planned transportation projects, or is consistent with regional mobility policies
		-1	Project is not consistent with existing or planned transportation projects, or is inconsistent with regional mobility policies

Sample Scoring Table

Project Name	Project Description	Safe System	Mobility, Accessibility, and Connectivity	Active, Healthy, Transportation Choices	Equitable Transportation	Public Transportation	Climate Mitigation and Adaptation	Emergency Preparedness	Economic Vitality	Fiscal Stewardship and System Management	Coordination with Local, Regional, and State Partners	Total Score
Hwy 99E Speed Mitigation and Bike/Ped Safety Improvements.	Slow traffic along section of 99E adjacent to downtown and enhance pedestrian and bicycle safety by adding enhanced crossings.	+2	+1	+1	0	0	0	0	0	0	+1	5