



4. Transportation Objectives and Concurrency Management

connecting
REDMOND

Transportation Master Plan

4. TRANSPORTATION OBJECTIVES AND CONCURRENCY MANAGEMENT

Contents of this Chapter

This chapter of the Transportation Master Plan will focus on the statutory and policy framework. The framework within which Redmond must work in addressing concurrency for transportation is determined by the City's policies and state and county provisions. Topics discussed include:

- ✓ The Washington Growth Management Act (GMA)
- ✓ Washington State Regulations Related to Transportation Concurrency
 - Level of Service
 - Concurrency Management Plan
- ✓ PSRC Standards - State Highways of Regional Significance
- ✓ King County Countywide Planning Policies
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Introduction

Washington State Growth Management Act

The Washington State Legislature enacted the Growth Management Act (GMA) in 1991 in response to growth and development pressures in the state. The GMA requires local governments in fast growing and densely populated areas (including King County and Redmond) to develop and adopt comprehensive plans. Counties are given authority to adopt county-wide growth management policies that are binding on their cities. The GMA requires Redmond to develop a Comprehensive Plan that includes a transportation element. The transportation element must address level of service for arterial roadways and transit routes.

Washington State Regulations Related to Transportation Concurrency

The State (through its Department of Community, Trade and Economic Development and State Department of Transportation) has adopted rules spelling out some of the GMA requirements in more detail.

- Redmond must prepare a Transportation Element of its Comprehensive Plan that provides “a definition of the level of service (LOS) to be adopted for the transportation system that includes at least arterials and transit routes. The definition of level of service is not restricted to the traditional Highway Capacity Manual approach, but could include district, area-wide, corridor, or other nontraditional level of service standards.” The rules state “level of service standards should reflect access, mobility, mode-split, or capacity goals for the transportation facility depending upon the surrounding development density and community goals, and should be developed in consultation with transit agencies serving the planning area.”

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- Redmond must adopt a concurrency management system ensuring that if concurrency for transportation facilities is not achieved, development will not be approved. The rules state: “In the case of transportation, an ordinance must prohibit development approval if the development causes the level of service of a transportation facility to decline below the standards adopted in the transportation element of the comprehensive plan unless improvements or strategies to accommodate the impacts of development are made concurrent with development, or within six years of occupancy of the development.”

These regulations provide Redmond with clear guidance but also considerable flexibility in designing a transportation concurrency management system based on the City’s land use plan and community objectives.

Puget Sound Standards for Highways of Regional Significance

On October 30, 2003, Puget Sound Regional Council adopted guidelines for State Highways of Regional Significance. The affected highways in Redmond include State Routes 520, 908 and 202 within the City. These are designated as Tier 1 facilities with an LOS standard of “LOS E/Mitigated,” which means: “... congestion should be mitigated (such as transit) when p.m. peak hour LOS falls below LOS E.”

The standards further state: “Cities and counties are required to include the LOS standards for all state routes in the transportation element of their local comprehensive plan. The Regional Council certifies the transportation elements, and staff will review the plans to ensure that the regionally adopted LOS standards are included. Local jurisdictions can address the regionally established LOS standards during their next regularly scheduled plan update or amendment.”

With respect to “mitigation” the standards state: “The LOS standard for the central urban Tier 1 routes introduces mitigation when the LOS along a roadway falls below E. While PSRC may plan for potential mitigation strategies as part of long-term regional planning, decisions on what strategies are appropriate for any particular situation will be made by WSDOT or the local jurisdiction on a case-by-case basis.”

This creates a requirement that Redmond include in its transportation plan a list of State Highways of Regional Significance and an accounting of their current and forecast operating condition. If one or more of these routes is expected to fall below LOS E as defined in the

Standards, Redmond should identify what mitigation measures are appropriate and what entity will implement them. However, the Standards do not create an obligation on the part of Redmond to achieve LOS E or mitigate congestion on regional highways.

King County County-Wide Policies

Finally, as required by the GMA, King County and the cities have adopted “County-Wide Planning Policies” that provide growth management framework to municipalities within the County. One key provision requires “mode-split” objectives as follows: “... mode-split goals for non-single-occupancy vehicle travel to all significant employment centers to reflect that center’s contribution to the solution of the region’s transportation problem.”

Other provisions discuss LOS standards as a “tool” but do not create additional requirements for Redmond to address in the update of its transportation element. Again, the City has considerable flexibility in how it designs its concurrency and LOS provisions.

City of Redmond Transportation Objectives

This Transportation Master Plan includes and is based on a Transportation Element adopted by Redmond City Council in 2004. Redmond’s intent for a concurrency management system is to:

- Comply with provisions of state law as well as regional and local policies.
- Base transportation investments on support of local and regional land use plans.
- Deploy concurrency in support of the City’s vision and goals.
- Simplify the concurrency management system.
- Frame concurrency management within a broader set of transportation objectives.

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Plan-Based System of Concurrency Management

Redmond's transportation concurrency management system will implement a "plan-based approach" that evaluates and reports completion of the transportation plan as measured against the pace and extent of development.

Transportation Element policies (Chapter 2) state that the City will utilize a "Plan-Based" approach as the basis for Redmond's transportation concurrency management system. This is intended to ensure that the funding of programs, construction of facilities, and provision of services occur in proportion to the needs of the City, and to the pace of growth. The intent is that the transportation system should explicitly support achievement of the community vision and policies in the Comprehensive Plan. (TR-3)

Further, the City's objective is to support land uses envisioned by the Comprehensive Plan through an appropriate transportation level-of-service standard. For Redmond, this means that so long as the growth of the City and the development of the City's transportation system are proportionate, work in parallel, and are consistent with the Comprehensive Plan, the transportation concurrency management requirement will have been met. (TR-4)

Specific "level of service" (LOS) measures for each mode have been developed and included in a transportation system performance measurement and reporting system (Chapter 7). While modal LOS measures provide the technical foundation for the concurrency management system, they will not directly be the subject of concurrency testing. Rather, concurrency testing will at least annually compare the status of the implementation of the transportation plan with the status of the implementation of the land use plan. This approach is based on the determination that the transportation system planned for 2022 (described in this Transportation Master Plan) will support the planned 2022 land use at acceptable levels of service (set forth in this chapter).

A Concurrency Management Ordinance implementing the transportation concurrency management system will be drafted and adopted in late 2005, following City Council adoption of this Transportation Master Plan.

Transportation Objectives

Redmond's transportation objectives for this Comprehensive Plan period (now through 2022) are organized in three categories: Multimodal level of service measures, Mode share measures, and Travel safety measures.

1. Multimodal Level of Service Measures

Level of service measures are designed to show how the City's transportation system will operate given future land uses in Redmond and the region, and given the transportation program funding and priorities. In each category, the City's transportation programs and projects (see Chapter 6) will achieve these measures on or before the year 2022. Thus, the actual concurrency management requirement is achievement of the City's transportation plan.

Redmond's multimodal LOS measures include:

- A. Traffic volume and roadway capacity;
- B. Regional transit travel time;
- C. Local transit connectivity;
- D. Bicycle system implementation;
- E. Pedestrian environment adequacy.

A. Traffic Volume and Roadway Capacity

Roadway level of service (LOS) for traffic movement has been set at 11 screenlines selected to represent distinct traffic flows into, through and within the community. LOS is measured using pm peak hour counts based on annual traffic counts at specific locations along the screenlines. The City has estimated current and future LOS at each count location.

This methodology uses pm peak hour volume-to-capacity ratios. The 2022 forecasts were developed using a refined version of the BKR (Bellevue-Kirkland-Redmond) traffic model, which in turn utilized land use forecasts from regional plans and Redmond's Comprehensive Plan. These forecasts also reflect the implementation of the Transportation Facilities Plan in Chapter 6.

The screenlines and LOS measures are shown in figure 4.1 with comparisons to actual 2000 levels.

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Figure 4.2 on next page shows the locations of these screenlines. Each screenline is made up of one or more specific locations along arterial roadways. More detail on these locations and on current LOS conditions is provided in Chapter 5, Section D - Thoroughfare Plan. The Transportation Facilities Plan (Chapter 6) is sufficient to achieve these measures by 2022. Thus, the actual concurrency management condition to be met is achievement of the Plan. Figure 4.2 also shows the current and 2020 number of general purpose lanes crossing each of the screenlines.

Redmond's system for annual reporting of roadway level of service is described in Chapter 7.

Screenline	Count Locations	Actual 2000 LOS	2022 Forecast LOS
1	East City Edge	0.94	0.96
2	West City Edge	0.87	1.10
3	Southwest City Edge	0.64	0.63
4	Northwest City Edge - Sammamish Valley	0.68	0.93
5	North Central Internal - Education Hill	0.60	0.86
6	Grasslawn North-South Internal	0.62	0.75
7	Downtown - West Edge	1.14	1.25
8	Downtown - Northeast Edge	0.88	1.01
9	Downtown - Southeast Edge	0.72	0.89
10	Internal Downtown North - South	0.44	0.51
11	Internal Downtown East - West	0.78	0.89

Figure 4.1 Roadway LOS Criteria (PM Peak Hour, Bi-directional)

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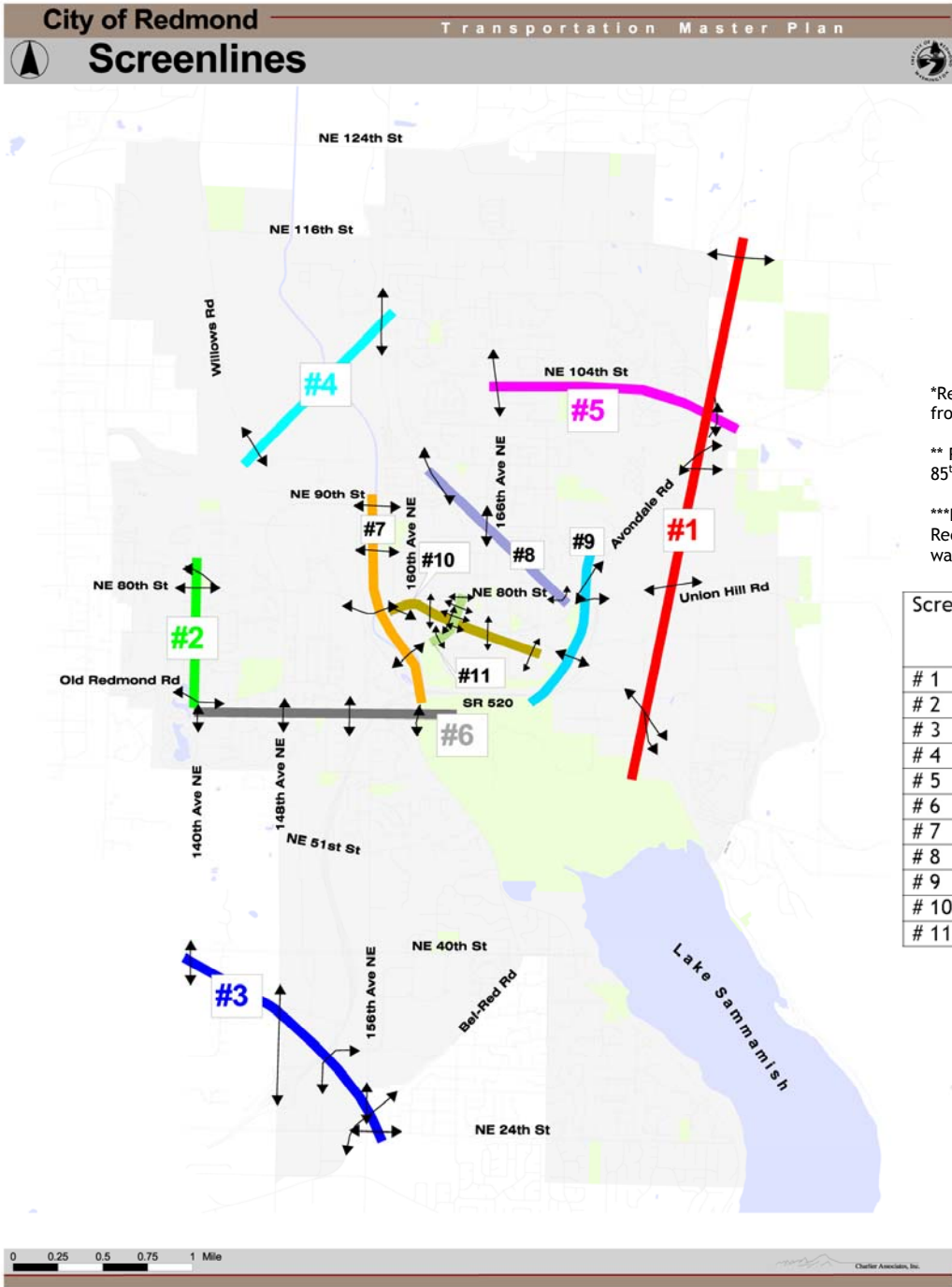


Figure 4.2 LOS Screenlines Map

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B. Regional Transit Travel Time

Redmond residents have identified improved regional transit travel time as a priority need for personal mobility. “Regional transit travel time” means the time required to travel by transit between Redmond and other parts of the region. This measure uses travel time between the two centers in Redmond (Downtown Redmond and Overlake) and other centers in the region (for this purpose, Downtown Seattle, Downtown Bellevue, Totem Lake and the University District/UW) to determine the effectiveness of public transit.

Citizens expressed a desire for transit travel between these centers to be a “real choice.” In other words regional travel by transit should be a practical alternative that is not overly time-consuming relative to auto travel times. Today, transit service from Redmond to these centers is by bus, principally on regional routes provided by Sound Transit. In the future, some of these connections could be via some sort of high capacity transit - Bus Rapid Transit, Light Rail, etc.

However, the objectives below address only the service levels, not the details of the means of achieving them. More detailed information about future transit service and current levels of service is provided in Chapter 5, Section C. Both Sound Transit and King County Metro (which operates regional bus routes for Sound Transit) would be involved in implementing the improved transit services described below, and in helping Redmond achieve its objectives for regional transit travel time.

The regional transit travel time LOS measures apply only to those land uses located within the two centers (the Downtown and Overlake). Regional transit service improvements anticipated by 2022 will achieve these measures.

The system for annual measurement of regional transit travel time is described in Chapter 7.

- BETWEEN -	Downtown Redmond (Downtown Transit Center)	Overlake (NE 40 th Transit Center)
Downtown Seattle	Peak frequency: 5 minutes Travel time: 30 minutes	Peak frequency: 5 minutes Travel time: 25 minutes
Bellevue Transit Center	Peak frequency: 10 minutes Travel time: 15 minutes	Peak frequency: 15 minutes Travel time: 15 minutes
University District-Seattle	Peak frequency: 5 minutes Travel time: 30 minutes	Peak frequency: 15 minutes Travel time: 25 minutes
Downtown Kirkland	Peak frequency: 30 minutes Travel time: 15 minutes	Peak frequency: 30 minutes Travel time: 20 minutes

Figure 4.3 Regional Transit LOS Measures

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C. Local Transit Connectivity

Redmond residents have identified better local connectivity as a priority need for personal mobility. “Local connectivity” means the level of service for transit connections directly between points *within* Redmond. Because local transit services are provided by King County Metro, most of the bus routes in Redmond are segments of longer routes that traverse other cities. Some of these routes are circuitous (not direct) and as a result are not time-competitive with auto travel for connections between points within Redmond.

Redmond’s local transit LOS measures emphasize connections between Redmond neighborhoods and three service destinations within Redmond: Downtown, Redmond Town Center and Overlake. Direct connections between neighborhoods are facilitated by frequent priority connections to the three service destinations, which enable convenient transfers to other Redmond neighborhoods.

While Redmond can work with Metro to plan service improvements, such improvements are not directly within Redmond’s control or authority and the City does not have authority to conduct route planning. These measures for local transit connectivity have been developed in cooperation with Metro. They represent reasonable expectations for future service levels, given King County fiscal constraints.

The system for annual measurement of local transit connectivity is described in Chapter 7.

Level	Criteria
PC - Priority Connection	Peak hour frequency of service (≤ 15 min). Direct connection ($< 1.5 \times$ most direct route). All day service (≥ 18 hours).
MS - Maintain Service Level	Maintain at least today’s level of service.
N - No Direct Connection	No direct local route connection yet.

Figure 4.4 Local Transit Connectivity Measures

	Downtown	Redmond Town Center	NE Redmond	Overlake Transit Center	Overlake Mixed Use Core	Grass Lawn	SE Redmond	Willows	Viewpoint
Downtown		PC	PC	PC	PC	MS	PC	MS	MS
Redmond Town Center			N	N	N	MS	N	N	N
NE Redmond				N	N	N	N	N	N
Overlake TC					PC	MS	MS	N	N
Overlake Mixed Use Core						MS	MS	N	N
Grass Lawn							MS	N	N
SE Redmond								N	N
Willows									N
Viewpoint									

Figure 4.5 2022 Local Transit LOS Standards

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D. Bicycle System Implementation

Bicycling is an important travel mode in Redmond and will become more prominent in the future as people respond to improvements in facilities for bicycling. Chapter 5, Section B shows a network of primary and secondary corridors that will eventually be completed. The LOS measures for the bicycle mode reflect the most critical need in the city: long, continuous cross-town corridors.

While it will not be possible to complete all of the primary and secondary corridors by 2022, several of the most important corridors will be finished under this Plan.

These will create feasible access to the Redmond’s primary employment zones from most residential areas, and will provide safe, convenient and direct bicycle circulation between the primary commercial areas.

The concurrency management condition to be met by 2022 is full completion of these corridors consistent with City design standards. Figure 4.7 provides a map of these corridors.

The system for annual measurement of bicycle system completion is described in Chapter 7.

2022 Bicycle System Priorities		
	Corridor Description	Missing Links*
Woodinville - Sammamish Crosstown	From NE 124 th Ave to the East Lake Sammamish Trail <ul style="list-style-type: none"> ➤ Willows Road ➤ BNSF corridor, south of NE 90th Street through downtown ➤ East Lake Sammamish Trail 	1 or 2, F, 13
Woodinville - Overlake Mixed-Use Core Crosstown	From NE 124 th Street to NE 24 th Street <ul style="list-style-type: none"> ➤ Redmond-Woodinville Road ➤ new 160th Ave NE connector street ➤ NE 90th Ave ➤ 161st Ave NE ➤ Leary Way ➤ West Lake Sammamish Parkway NE ➤ Bel-Red Rd ➤ NE 24th St 	3, 4, 5, 12, J
North Redmond Downtown Loop	From Willows Road at NE 116 th Street to BNSF at Bear Creek Parkway <ul style="list-style-type: none"> ➤ NE 116th Ave ➤ Avondale Road ➤ Avondale Way ➤ 170th Pl NE 	B, 8
Southeast Redmond Downtown Loop	From East Lake Sammamish Parkway at 187 th Ave NE to NE Union Hill Road at Avondale Way <ul style="list-style-type: none"> ➤ 187th Ave NE ➤ 188th Ave NE ➤ NE Union Hill Road 	H, 9B
Overlake Downtown Loop	From NE 24 th Street at 152 nd Ave NE to NE 90 th Street at 161 st Ave NE <ul style="list-style-type: none"> ➤ 152nd Ave NE ➤ 520 overpass ➤ NE 36th St ➤ 150th Ave NE ➤ NE 51st St ➤ SR 520 Trail ➤ 154th Ave NE ➤ Old Redmond Rd ➤ West Lake Sammamish Way ➤ BNSF corridor ➤ NE 90th St 	10a, 10b, 10c

* Missing links are described in Section B of Chapter 5.

Figure 4.6 Bicycle System LOS Standards

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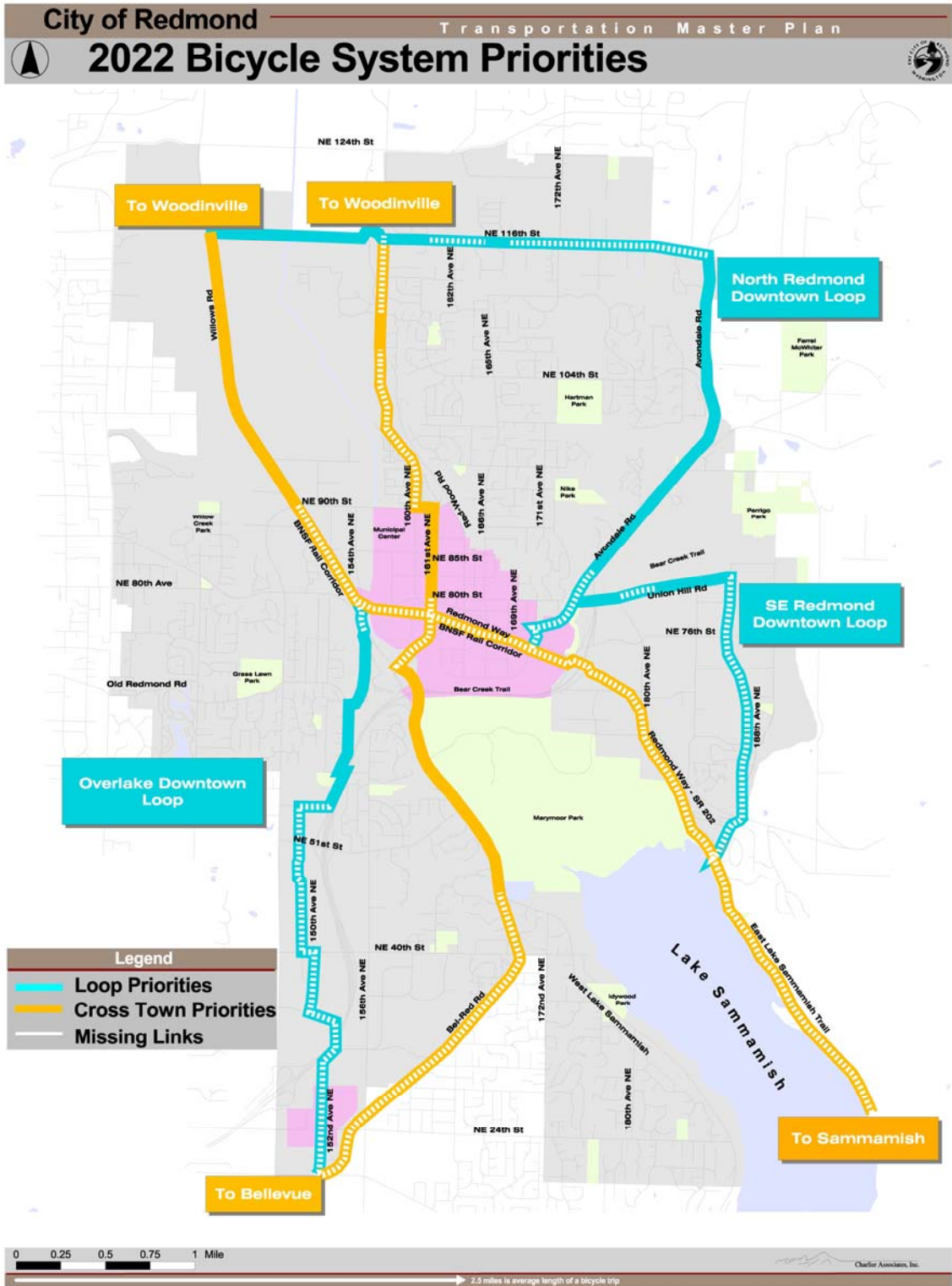


Figure 4.7 Bicycle Corridor LOS Map

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E. Pedestrian Environment Adequacy

Redmond has worked to make the city more “pedestrian friendly” for its residents, workers and visitors. With this Transportation Master Plan, the City’s efforts will become more focused and intensive. Adequacy of pedestrian environment is one of the five categories of LOS measures.

Pedestrian environment adequacy is a measure of the “pedestrian friendliness” of the urban environment measured within specific corridors and districts. Section A of Chapter 5 provides details about measurement and evaluation of pedestrian environments. For purposes of concurrency testing, pedestrian adequacy will be held to different measures within four settings as shown in Figure 4.8 below.

Taken together, these measures represent a city-wide expectation for 2022. However, the specific design standards that must be met by each project and site as it develops or redevelops may be higher than this, as determined by the City’s street design standards and development review requirements. There may also be instances with particular areas and projects where it may not be reasonable to meet the established LOS measure.

LOS measures presented in Figure 4.8 are for concurrency management purposes only. Design standards and development review requirements for

specific projects will generally be higher than the LOS requirement, as identified. Within the two centers and within all Multimodal Corridors, development approval may be withheld if a substantial area around the specific project or site will not meet the standard within six years of the anticipated completion and occupancy of the project.

Chapter 5, Section A describes guidelines and minimum conditions for three components of the affected landscape: the roadway corridor, the pedestrian realm and the abutting land use. The minimum LOS measure applies to all three. In deciding whether the LOS measure has been met, the City will evaluate adjacent and nearby street corridors, the sidewalks and other walkways (existing and proposed as part of the development) and the nature of the proposed land use and urban design.

Within the Downtown and Overlake districts, the City will pursue development of environments that meet the “Pedestrian Place” criteria set forth in Chapter 5, Section A. This may call for additional public and private investment beyond the minimum LOS measure (Pedestrian Supportive) in Figure 4.8.

The system for annual measurement of pedestrian environment adequacy is described in Chapter 7.

Area	Minimum
Places: North Downtown, Old Town, Redmond Town Center, Redmond Crossing, Overlake Mixed-Use Core	Pedestrian Supportive
Districts: Greater Downtown & Overlake Mixed-Use Core areas	Pedestrian Supportive
Multimodal Corridors: Mixed Use and Commercial Areas	Pedestrian Supportive
Multimodal Corridors: Other Areas	Pedestrian Tolerant
All Other Areas	Pedestrian Tolerant

Figure 4.8 Pedestrian LOS Measures

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2. Mode Share Objectives

Mode share is the measurement of person trips by mode of travel. The travel modes, as defined in this Plan, are:

- **SOV - Single-Occupant Vehicle.** Automobiles, trucks, motorcycles and so forth, with one occupant - the driver.
- **Carpool/Vanpool.** Shared ride vehicles including any motor vehicle other than a public transit vehicle with more than one occupant.
- **Public Transit.** Public bus and rail transit.
- **Bicycle.** Non-motorized bicycles only.
- **Pedestrian.** Includes wheelchairs.
- **Other Travel Means.** Skates, Segways, etc.
- **Work at Home.** Applicable only to commute trips.

Expressed as percentages of total travel, mode share describes the proportion of trips made by a specific mode (e.g., “transit mode share”), or by a group of modes (e.g., “non-SOV travel”).

Mode share objectives have been set for two categories of trips: CTR program commute mode share, and all day Redmond resident mode share.

A. CTR Commute Mode Share

The Commute Trip Reduction program is required by the 1991 Washington State Clean Air Act. It applies to employers of 100 workers or more, which represents about 81 companies in Redmond, employing about 43,000 employees. The objective applies to commute trips for people at CTR companies in Redmond.

The key number in Figure 4.9 is the Non-SOV total of 30% by 2022. The City’s transportation demand management program will seek to achieve this objective for commute trips to large employers.

Mode	2003 Actual	2022 Objective
Single Occupant Vehicle (SOV)	75%	70%
All Other (Non-SOV)	25%	30%
Carpool/Vanpool	17%	20%
Public Transit	3%	5%
Bicycle	1%	2%
Pedestrian	1%	2%
Other Travel Means	0%	0%
Work at Home	3%	3%
TOTAL ALL COMMUTE TRIPS	100%	100%

Figure 4.9 CTR Mode Share Objectives

B. All Day Redmond Resident Mode Share

In 1999, King County commissioned a “Land Use Transportation Air Quality Health Study” based on a survey of residents of portions of King County, including Redmond. This study provided local data on all day travel (more than just commute trips) by Redmond residents (as opposed to people working in Redmond). Chapter 7 of this Plan describes how this survey will be replicated at five-year intervals.

Redmond has established mode share objectives for all travel by Redmond residents as shown in Figure 4.10 below. Again, the key number in Figure 4.10 is the Non-SOV total of 35% by 2022. The City’s transportation demand management program will seek to achieve this objective for all trips by Redmond residents.

Mode	2003 Actual	2022 Objective
Single Occupant Vehicle (SOV)	44%	35%
All Other (Non-SOV)	56%	65%
Carpool/Vanpool	40%	42%
Public Transit	4%	6%
Bicycle	1%	2%
Pedestrian	10%	14%
Other Travel Means	1%	1%
TOTAL ALL RESIDENT TRIPS	100%	100%

Figure 4.10 All Day Redmond Resident Mode Share Objectives

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3. Travel Safety Objectives

Chapter 3 provides data on accident and safety trends in Redmond. Chapter 7 describes how Redmond will monitor and report on traffic accidents annually. The City has set ambitious objectives for travel safety as shown in Figure 4.11.

Motor Vehicle Accidents	≤ 900
Motor Vehicle Accidents Involving a Bicyclist or Pedestrian	≤ 20

Figure 4.11 Traffic Safety Objectives