

Transportation Master Plan

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Introduction & Summary



City of Redmond
WASHINGTON

Creating Choice. Connecting Community.

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Chapter 1: Introduction

Transportation Vision

The City of Redmond completed its first Transportation Master Plan in 2005. Major changes to the transportation landscape during the ensuing eight years necessitate a significant update to that initial planning document. Main drivers for this 2013 Transportation Master Plan (TMP) include: adoption of a Complete Streets Ordinance in 2007, designation of Overlake Neighborhood as a Regional Urban Center in 2007, approval of East Link Light Rail to Overlake in 2008, adoption of the regional 2040 Transportation Plan in 2010, and finally this 2013 TMP completes the transportation requirements for the 2011 Comprehensive Plan update. In developing this long term transportation plan for the city, it was very important to provide significant opportunity for community and stakeholder input. With that in mind, a robust outreach process was started in 2010 with a comprehensive travel survey for residents and businesses. That was followed by three major community events and two stakeholder events in 2010 and 2011. Additional details about these and other outreach efforts may be found in Appendix A.

This 2013 update to Redmond's TMP presents a strategic framework that will guide transportation decisions and investments for the next 18 years in support of the long-term vision for the city.

Redmond's overall vision is anchored by two mixed-use urban centers (Overlake and Downtown) surrounded by vibrant, connected neighborhoods. Redmond's Comprehensive Plan focuses three-quarters of the City's planned increase in new dwellings and two-thirds of new commercial floor area through 2030 in Downtown and Overlake. This will include dense, multi-story development that can be easily served by transit and other alternatives to driving. The transportation vision for 2030 aligns with and supports the City's broader vision and land use policies.



Redmond's 2030 transportation system supports Redmond's vision for vibrant urban centers in Downtown and Overlake, connected neighborhoods and a sustainable community.

Movement of people, goods, and freight both locally and regionally is provided by street, light rail, transit, pedestrian, and bicycle systems that are complete and fully integrated.

The Strategic Framework

Figure 1 depicts the overall strategic framework reflected in this TMP update. As with all of the City's functional plans, the TMP flows first from the overall city vision and is guided by both the community priorities and the City's Comprehensive Plan. Rooted in the community priorities and the Comprehensive Plan are four general citywide principles that guide all functional plans including the TMP. They are safety, maintenance, environmental stewardship and economic vitality. These principles are fundamental considerations for all implementation activities.

The key strategies were identified as the five critical elements necessary to achieve the 2030 transportation vision. The projects, programs and activities of both the Transportation Facilities Plan and the Three Year Action plan were selected based on their ability to effectively implement these strategies. Finally, the Transportation Dashboard has been developed as an assessment tool for measuring the city's progress toward implementing the strategies and achieving the 2030 transportation vision.

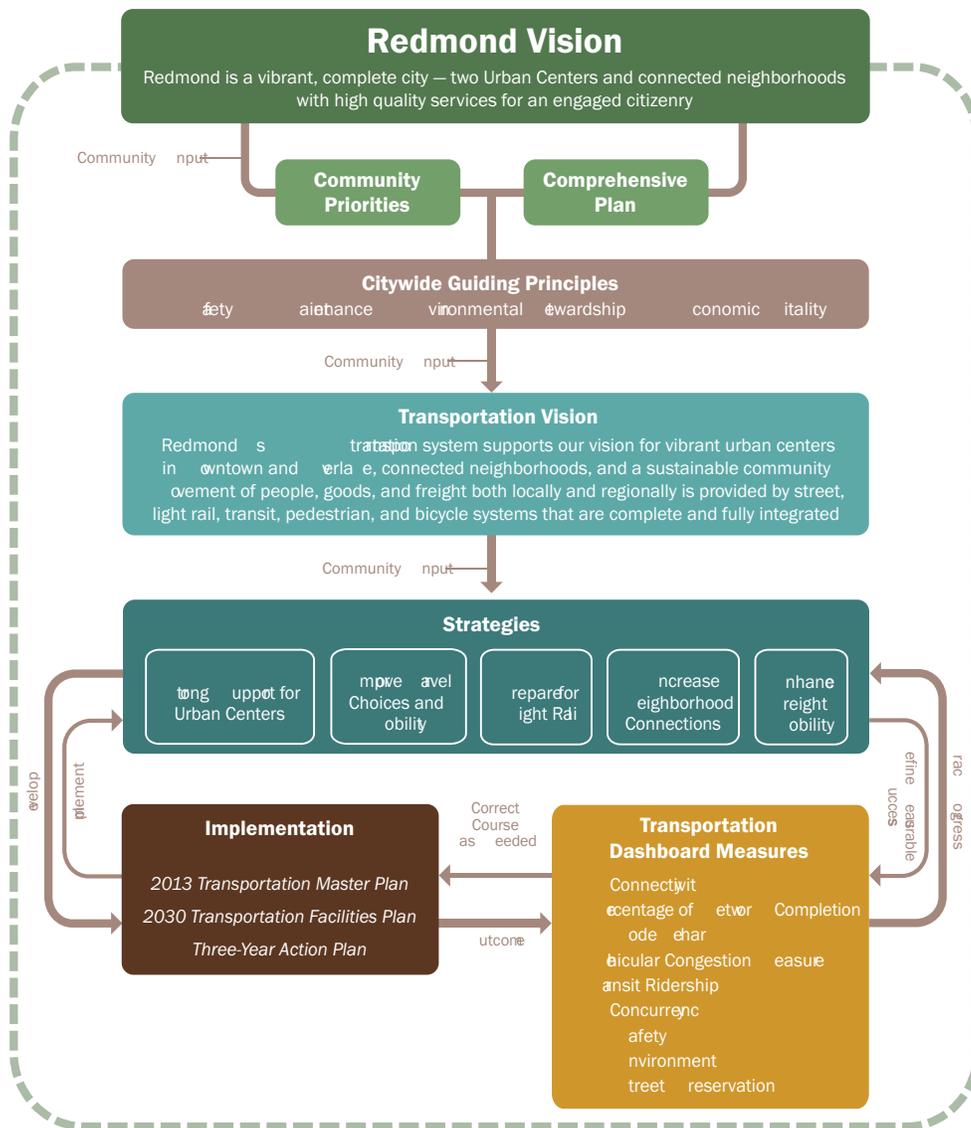


Figure 1. Strategic framework

Five Key Strategies

The centerpiece of this framework approach is a set of five strategies that are embedded both in the vision narrative and throughout the TMP Document. Each strategy describes the core activities needed to achieve the desired outcomes. The dashboard measures will be used to evaluate progress on these strategies over time and will be explained in detail in Chapter 3. These five strategies provide the basis for the identification of projects and programs to be completed by 2030. It is important to remember that implementation activities needed to achieve each strategy will be guided by the sustainability principles of safety, maintenance, environmental stewardship and economic vitality. The five key strategies are:

1

Prepare for Light Rail

This means increasing bus transit ridership to build the market for future light rail, building the infrastructure needed to support light rail in advance of its arrival, and encouraging transit-oriented development in areas surrounding future rail stations.

2

Ensure Strong Support for Urban Centers

The completion of a well-designed network of streets and paths combined with a managed parking strategy will establish the transportation system needed to support the urban environment envisioned for both urban centers – Overlake and Downtown. This includes appropriately scaled streets, wide sidewalks, on-street parking, shared parking, reasonable access for delivery vehicles, interesting design features, bike facilities, and a network of walking paths.

3

Improve Travel Choices and Mobility

This strategy calls for completing Redmond's networks for driving, bicycling, walking, bus transit, light rail, and freight movement. Managing transportation demand, network completion and careful integration of transit-oriented land use with transportation infrastructure will increase overall mobility options and support needed shifts in mode share.

4

Increase Neighborhood Connections

This strategy seeks to ensure that Redmond's neighborhoods are connected to each other and are also internally well-connected by all modes of travel. Particular emphasis will be placed on improving modal corridors, providing safe local streets and safe, convenient walking and bicycling connections.

5

Enhance Freight Mobility

This strategy focuses on direct and efficient delivery of goods and services within the city as well as continued vitality within the freight warehousing and distribution facilities sector.



Transportation Dashboard

Critical to the success of any strategic program is a set of performance and monitoring metrics that demonstrate what progress is being made toward desired outcomes. While far from the only measures needed for effective management of the city's overall transportation activities, the six measures tracked using the Transportation Dashboard provide an "at-a-glance" assessment of how the city is progressing toward achieving the Transportation Vision.

1. Connectivity

This measures how well properties or parcels are connected to the surrounding properties and describes mathematically how well our transportation network is connected to and accessible from the city's land uses (where people live and work). This is especially important for the walking environment which is needed for completion of all trips and is sensitive to indirect, out-of-the-way connections.

Desired trend: increasing

2. Network Completion

This measures the completeness of the city's bicycle, street, and transit networks and indicates where improvement is needed whether through completion of "missing links" or through upgrading sub-standard facilities. The highest priority for network completion will be the "modal corridors" network for vehicles, bicycles, transit, and freight.

Desired trend: increasing

3. Mode Share

The percentage of all travel on an average weekday taken by means other than the single-occupancy vehicle, including carpools, transit, walking, and bicycling.

Desired trend: increasing

4. Vehicular Congestion

This is based on measurement of peak hour average travel delay per mile on arterials throughout the city. Success means that the measure of delay does not exceed the projected average delay for 2030.

Desired trend: maintain reasonable level of delay

5. Transit Ridership

This reports the number of transit riders boarding in Redmond on an average weekday. Steady growth in transit patronage with an emphasis on both regional express service and local service is needed to grow the market for light rail, in preparation for the arrival of East Link, first in Overlake and later in Downtown.

Desired trend: increasing

6. Concurrency

This measures the rate of transportation infrastructure development relative to the rate of land use development. The success of Redmond's plan-based concurrency system will require that completion of our 2030 Transportation infrastructure proceeds ahead of, or at least concurrent with, our land use development.

Desired trend: maintain concurrency

7. Safety

Safety is expressed as the per-capita traffic-related injury and fatality rate for Redmond. Safety is a fundamental goal for the City as it builds and maintains the transportation system, and Redmond seeks to reduce its already low rates of traffic-related injuries.

Desired trend: decreasing injury rate



8. Environment

This measure has two components: air quality and water quality. Air quality is expressed as compliance with federal air quality standards for particulates, and water quality is expressed as the percent of City right-of-way that is subject to basic water quality treatment. The environment measure indicates whether the City is designing infrastructure to be “clean and green”—healthy for humans and our surrounding ecosystems.

Desired trend: increasing



9. Street Preservation

Adequate pavement condition is essential to the proper functioning of the roadway network for private travel and for freight operations. This is reported as the average Pavement Condition Index (PCI) for arterial lane mileage within the Redmond city limits.

Desired trend: maintaining



Implementation Plans

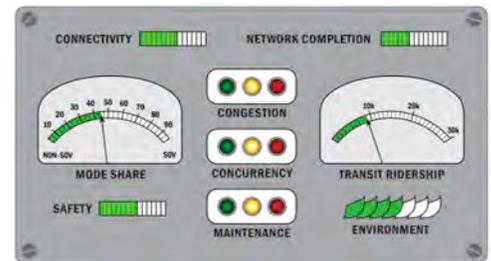
Effective implementation of the five key strategies will be achieved through the guidance provided by the Transportation Master Plan and includes a long-term investment plan and a short-term action plan:

1. 2030 Transportation Facilities Plan (TFP)

This 18-year plan for transportation investments has been prioritized based on how well individual projects and programs are expected to advance the key strategies. What can be included in the TFP is limited financially by the revenues forecast between now and 2030. This approach fulfills the requirements of the Washington State Growth Management Act (GMA) to have a financially constrained long-range plan. The timing and funding level for projects and programs included in the TFP (near term, mid-term, or long-term) are aligned with the city’s Capital Investment Strategy (CIS) that includes transportation, parks, water, wastewater, natural resources, and general city infrastructure projects. The 2013-2030 TFP is based on a revenue forecast of \$369 million over 18 years and contains 42 separately described and mapped projects and 15 city-wide programs. The TFP is a subset of the city’s Buildout Plan list that describes the ultimate transportation needs for the city. Success will be measured by how well the TFP is delivered ahead of or concurrent with land use development in the city which is known as concurrency. (Chapter 7)

2. The Three-Year Action Plan

This serves as a work plan for the next three years, providing specific direction for the highest priority activities needed in the short term to ensure successful implementation of the long-term transportation plan. (Chapter 8)



These are high level, long-term measures for which meaningful updates will likely occur every three to five years, but the trending direction for each should be clear and consistent.

Two Vibrant Urban Centers

Realizing the City's vision will require significant evolution of our transportation system. In Redmond, community values that support more human scale buildings, a green community and moderately sized roadways over wide streets pair with the economic market reality that increased urban vibrancy means more people, jobs and shopping coming together in a denser area. In Redmond those denser urban areas are Downtown and Overlake. Central to the Transportation Master Plan and critical to the success of Redmond's two urban centers is the need to reduce per capita car travel to and within these areas. With continued growth the "level of service" experienced by drivers to and within the urban centers is expected to decrease somewhat from today's levels while transportation options including light rail and other types of transit, bicycling and walking will become more competitive in terms of time and convenience.

Most of the growth in jobs and housing between now and 2030 will occur in the two compact, mixed-use, transit-served and walkable urban areas of Downtown and Overlake. National statistics reveal that as America's urban areas have continued to grow, the amount of travel by automobile has not increased in proportion to that growth. This trend is becoming particularly evident in Downtown as a rich mix of shops, commercial offices, housing and hotels emerge in close proximity to one another and in proximity to frequent transit service, reducing dependence on driving.

The City's strategy of increasing the amount of housing in Downtown and Overlake will offer not only the opportunity to live in a vibrant, urban environment, but also the opportunity to own fewer cars per household and to drive less.

Downtown Redmond in 2030



Even with continued expansion of housing in Downtown, automobile traffic during the weekdays has remained relatively constant there. This can be attributed to completion of the street grid system resulting in dispersed traffic and noticeable increases in walking, biking, and transit trips. In addition, Redmond's Downtown is maturing into a local and regional destination rather than a district people just drive through. The reduction in traffic relative to the level of economic activity in Downtown is beneficial for the city, and the TMP strategies will support and accelerate this trend.

The City's strategy of increasing the amount of housing in Downtown and Overlake will offer not only the opportunity to live in a vibrant, urban environment, but also the opportunity to own fewer cars per household and to drive less. Not everyone who lives in Downtown or Overlake will work there, and not everyone who works there will choose to live there, but many will make that choice. A vertical and horizontal mix of land uses, including shops, restaurants, entertainment and services in addition to housing and workplaces, will support an active, urban lifestyle for those who choose to take advantage of it. These districts also will become more important regional and local destinations, providing new opportunities for those living in Redmond's surrounding neighborhoods. Development of multi-story, mixed land uses with residential spaces above commercial spaces will spur the local market for retail and for other commercial activities. And the availability of shops and restaurants will serve as an amenity attracting people to the new housing. In addition, improving connections between surrounding neighborhoods and urban centers is also part of the transportation strategic approach.

Development of multi-story, mixed land uses with residential spaces above commercial spaces will spur the local market for retail and for other commercial activities.

Overlake Village in 2030



Travel Choices and Mobility

As Redmond continues to develop into a city that is both an origin and a destination for personal travel, shorter trip lengths are becoming more common. This is important because trip lengths are key determinants of travel choices — where to go, when to travel, and how to travel. The 2010 Redmond Travel Survey shows that fully one quarter of all daily person trips in Redmond are now less than a mile in length, and three-quarters are less than five miles. These trips represent a growing market for walking, bicycling and local transit. The urban, non-auto-oriented lifestyle is especially appealing to the Millennials (those born between 1984 and 2002), who are common among the workforces of Microsoft and the other information technology employers located in Redmond.

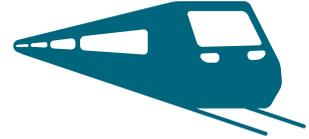
Through over a year of community outreach the City consistently heard from people who live and work here that they want the ability to travel without a car. This is not a wholesale abandonment of the automobile, which will continue to be an important means of travel well into the future, but rather an expression of a clear desire to have a broader range of travel choices and to become less dependent on cars for mobility and access.

Locally

Locally, Redmond is planning growth oriented to a network of connected transportation infrastructure that includes streets, sidewalks, bike lanes, transit routes and paths in addition to incentives and parking pricing strategies that encourage reduced automobile use. Efficient operations and maintenance of this network will ensure a fully functioning transportation system.

Regionally

Regionally, Redmond will work with its state and local partners to manage regional peak period auto travel demand. The region's approach will include such demand-side measures as parking pricing and variable freeway tolling (e.g., the SR 520 bridge), which will also help pay for infrastructure and operating expenses. These approaches are already working. For example, only about 63% of daily commute trips in Seattle today occur in private automobiles, according to the 2007-2011 American Community Survey. Parking pricing and high levels of transit availability are two important contributors to increasing alternative modes of travel. Redmond will work with the Washington State Department of Transportation (WSDOT) and state legislature to prioritize the most important projects within the SR 520 Corridor between I-405 and the end of the freeway at Avondale Road. The City will continue to work closely with Sound Transit to bring light rail to Overlake and Downtown, and with King County Metro to improve our bus service into and within the community.

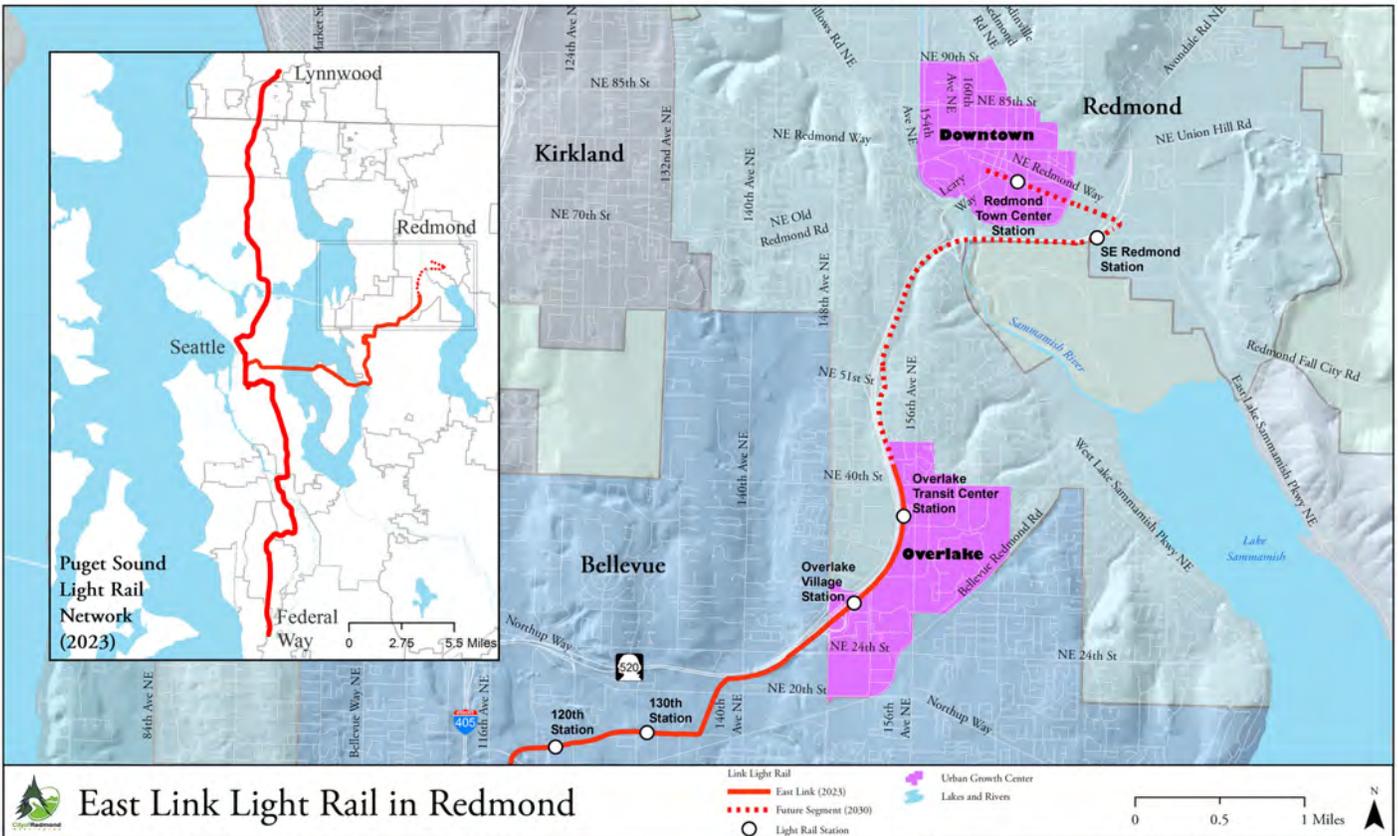


East Link Light Rail

Transit — both bus and rail — will be critical to providing a full range of reliable mobility choices in Redmond. All-day frequent bus service and light rail corridors that connect Redmond to the region will be the heart of the future transit system. Construction of the first two East Link light rail stations in the Overlake Urban Center will start in 2015 with trains running to Bellevue and Seattle beginning in 2023. In particular, the future light rail station across from Microsoft’s main campus will expand the existing Overlake Transit Center into one of the most important multi-modal transit hubs in the region. A mile to the south a new station at the northern tip of the planned Overlake Village will become the catalyst for a dense and highly accessible urban community from which residents can walk to the train and be in Seattle in 45 minutes, or ride a bike to a local café and enjoy a cup of coffee with a friend.

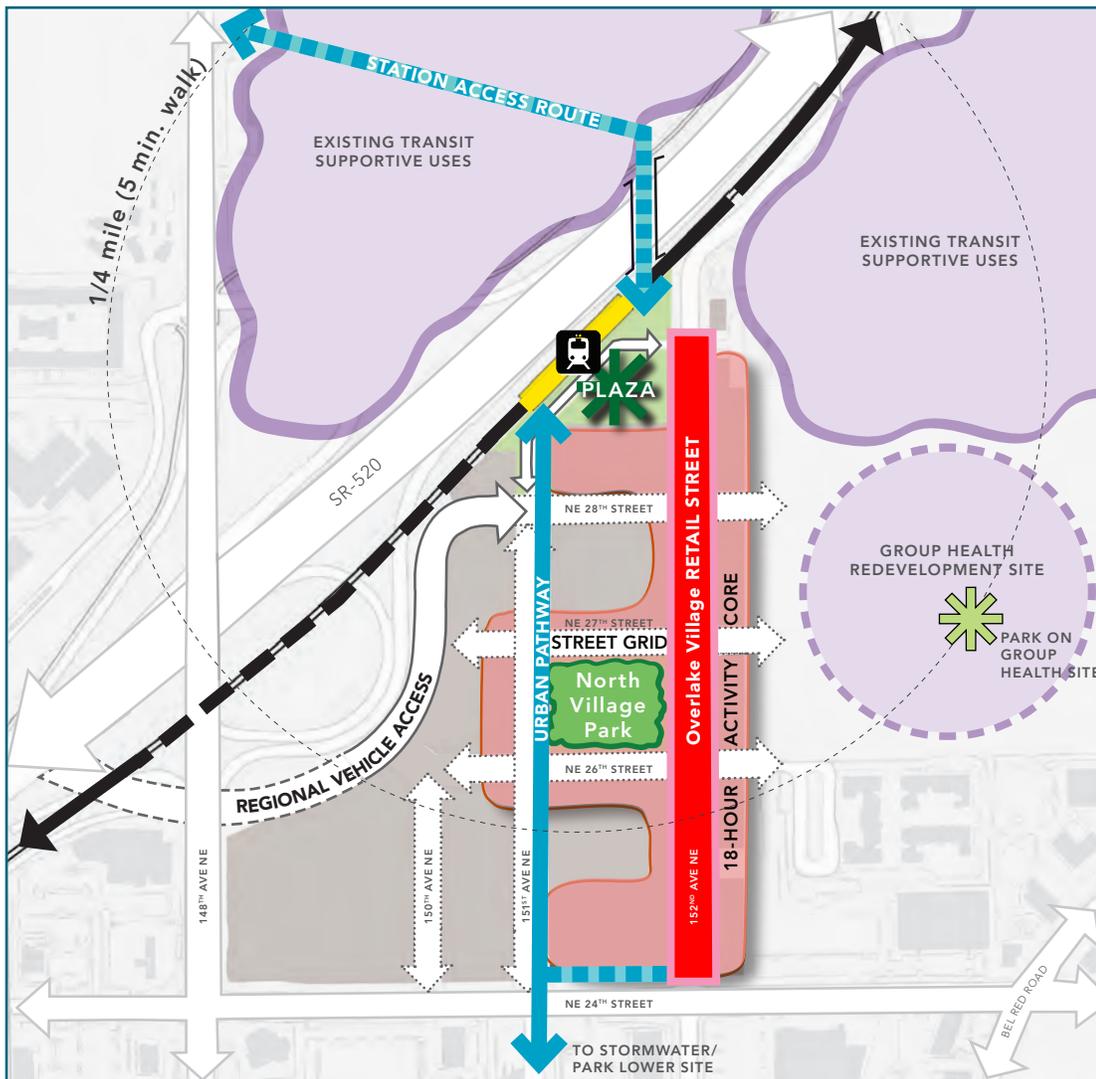
“The public conversation about transportation has changed over the past 20 or more years. In the past, the community was most concerned about moving cars and congestion. Today we talk about connectivity, and how to get around without a car.”

Pat Vache, Councilmember
(November 17, 2011 Community Meeting)



Continuation of the East Link rail line to Downtown and to Southeast Redmond through the SR 520 Corridor is planned for completion as part of the regional expansion of the light rail network. The City will work with transit agencies to expand bus service and grow transit ridership both within the urban centers and other neighborhoods. This will enable the City to leverage local benefit from the regional investments in light rail.

Redmond will further leverage these investments in transit by ensuring safe and efficient pedestrian and bicycle access to transit stops and stations. These non-motorized modes will play a key role in making the transit strategy successful, since all transit trips necessarily involve some amount of walking or bicycling to connect origins and destinations to the stops and stations. The City will concentrate on providing pedestrian connections within a half-mile radius of transit stops and stations and bicycle connections within a two and a half mile radius.



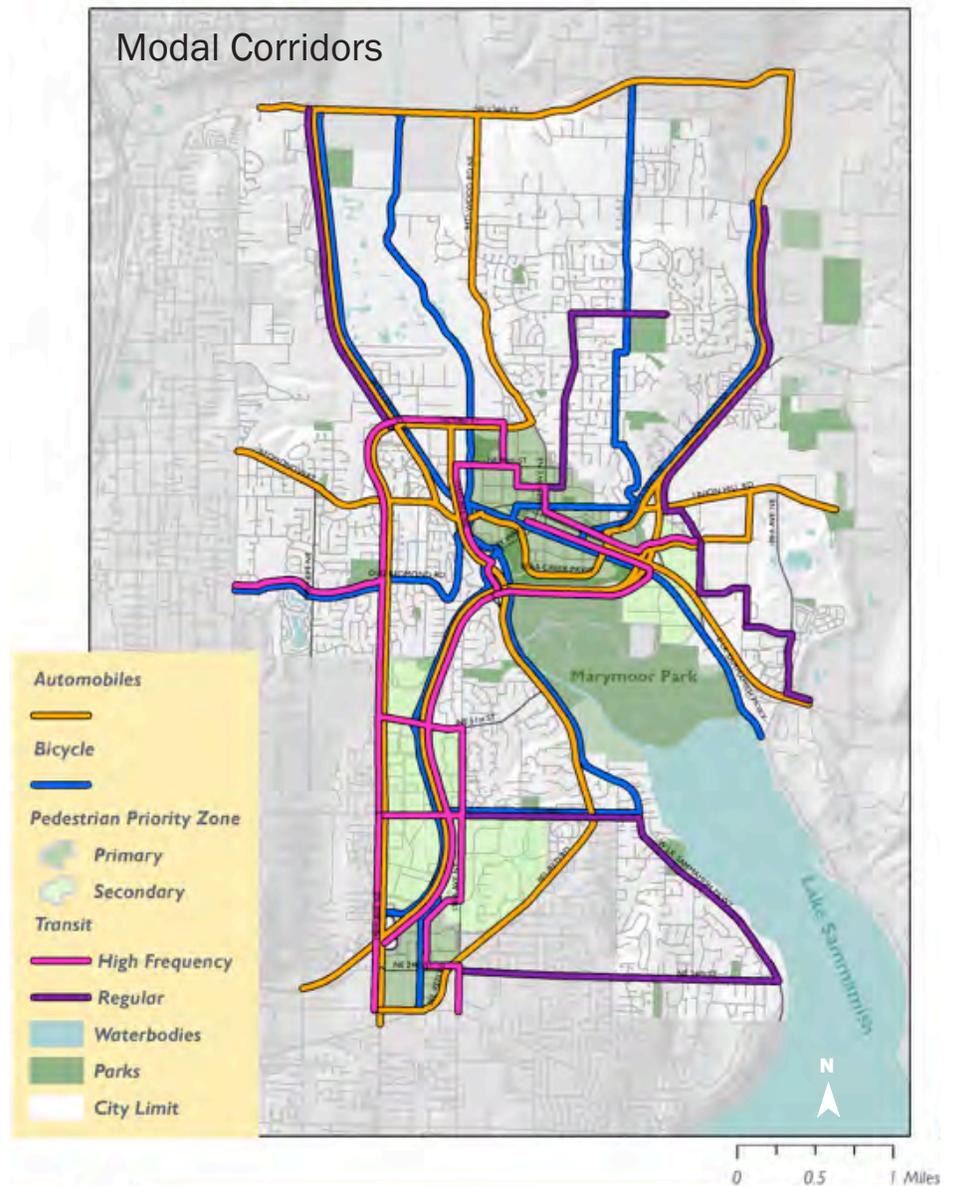
Connected Neighborhoods

Redmond has identified critical modal corridors that serve as the backbone of our transportation system. The modal corridors include all principal and important minor arterial streets, the SR 520 corridor, and several key multi-purpose paths. These modal corridors, together with the remaining arterial streets, connecting local streets and paths are the city's transportation network. All nine neighborhoods and the two urban centers are connected by these corridors. Completing these priority modal corridors and finishing the most critical "missing links" for the street grid, bridges, sidewalks, paths, bike lanes, and transit routes is essential to achieving our vision for 2030. At the same time, it is also important to keep up with maintenance needs and with operational improvements for these critical corridors and to ensure the entire transportation system is operating safely and efficiently, and is environmentally and economically sustainable.

Neighborhoods are to be well connected internally to local destinations such as parks, trails, and schools.

However, large parts of the local street network were developed in our neighborhoods during the 1970s and 1980s when Redmond was a small suburban city with rapid growth in single family housing. This suburban-style network will not be sufficient to fully meet the needs of the future. Many of our older neighborhood streets and paths are not connected enough to provide functional access to pedestrian and bicycle facilities or to transit stops and stations. Completing missing street segments, connecting cul-de sacs with pathways, adding lighting, connecting bike path segments, completing missing sections of sidewalks, and improving existing sidewalks so they are better separated from cars are all part of the TMP's strategy for ensuring neighborhood connections.

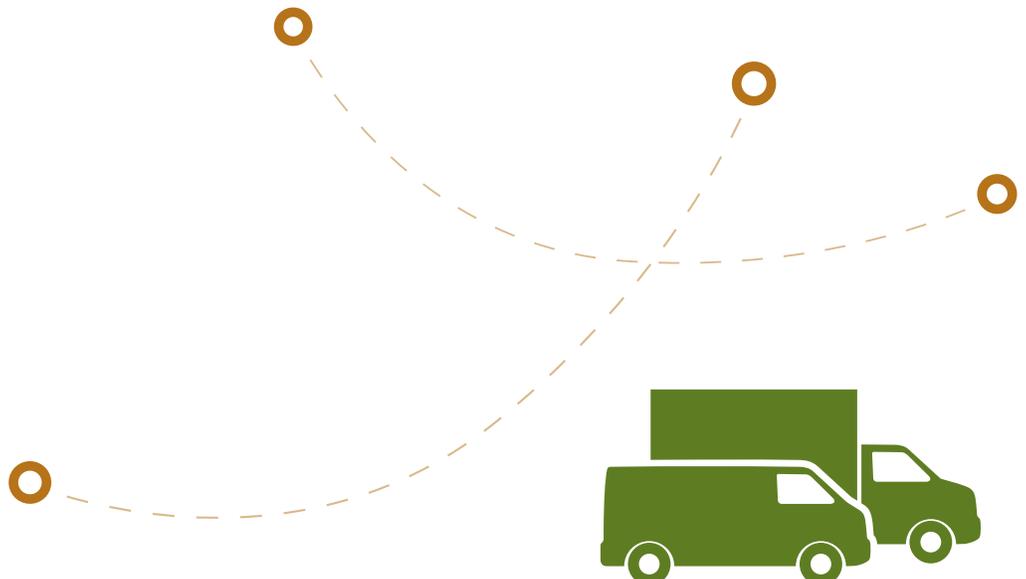
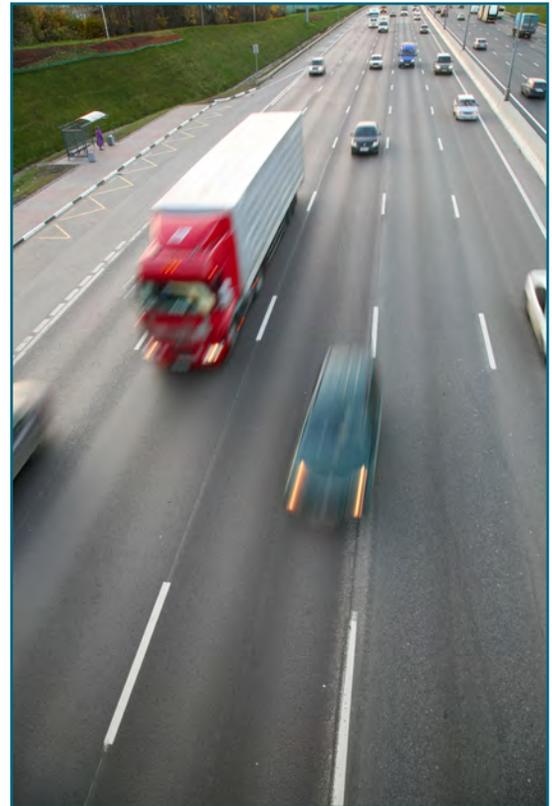
Modal Corridors



All nine neighborhoods and the two urban centers are connected by these corridors. Completing these priority modal corridors and finishing the most critical "missing links" for the street grid, bridges, sidewalks, paths, bike lanes, and transit routes is essential to achieving our vision for 2030.

Freight Mobility

The vision of Redmond's future, with a high-quality living environment and a strong economy, depends not only on connected, convenient personal travel choices, but also on a well-functioning freight circulation system. As a modern city, Redmond will require the ability for goods and services to be delivered directly and efficiently throughout the urban centers and the surrounding neighborhoods. Our location at the end of SR520 on the east side of the region also makes southeast Redmond a major center for regional distribution and warehouse facilities. For the foreseeable future, goods and services will move by truck on the same streets and highways that serve personal mobility. To better facilitate efficient freight movement this plan identifies primary truck streets for through movement of freight and truck access streets where freight distribution hubs are located.



Chapter 2:

Trends and Conditions

Introduction

Policies, demographics, economic conditions, land use, environmental factors, and travel patterns all change continuously, and each has an influence on which strategies will be effective in providing travelers in Redmond with safe, reliable travel choices. This chapter examines the changes that have influenced this update of the TMP, reports on the current state of the City of Redmond and, where possible, forecasts the conditions that will affect our transportation system in the future.

Policy Developments

Key Trends

In 2011 Mayor John Marchione unveiled his vision for the City of Redmond:

“Redmond is a city with two vibrant urban centers — Downtown and Overlake — and connected neighborhoods, providing high quality, responsive services to an engaged citizenry.”

Since adoption of the first Transportation Master Plan in 2005, policy actions by the City and regional agencies have refined and reinforced Redmond’s urban center strategy, as well as its goal of increasing the diversity and sustainability of the transportation system.

City Vision

The vision is intended to influence all City work, from the biennial budget process to Comprehensive Plan updates, and was a guiding force for the TMP. The TMP responds to the community vision through its urban centers strategy, its attention to neighborhood connections, and its investments to improve mobility citywide for all users. The vision also influenced the development process of the TMP, which included a robust public outreach and engagement component. The comments and opinions voiced by participants were key to establishing the direction of the plan, which is a refinement of the direction established in the 2005 TMP.

Development of multi-story, mixed land uses with residential spaces above commercial spaces will spur the local market for retail and for other commercial activities.

Four principles express the policy direction of the 2005 TMP:

1. The TMP should support the land use vision of the City of Redmond.
2. A full range of travel choices, including personal vehicles, walking, bicycling, transit, and truck freight will be needed for Redmond's transportation system to meet future personal mobility and freight movement needs.
3. New connections will be essential to completing the multimodal network in Downtown, Overlake, and throughout the city.
4. East Link light rail from Seattle to Overlake and Downtown Redmond will be critical for connecting Redmond regionally and for organizing the local multimodal transportation networks.

For the 2013 TMP, these principles have evolved into a strategic framework, described in Chapter 1.

Designation of Overlake as a Regional Growth Center

In 2007 the Puget Sound Regional Council designated part of the Overlake neighborhood as a Regional Growth Center, prioritizing it for increased housing and employment growth, as well as additional infrastructure funding to help accommodate that growth. Redmond's vision for the area calls for a thriving neighborhood with 16,000 residents and 70,000 employees. Overlake will continue to be home to internationally known companies and corporate headquarters, high technology research and development firms, and many other businesses, large and small.

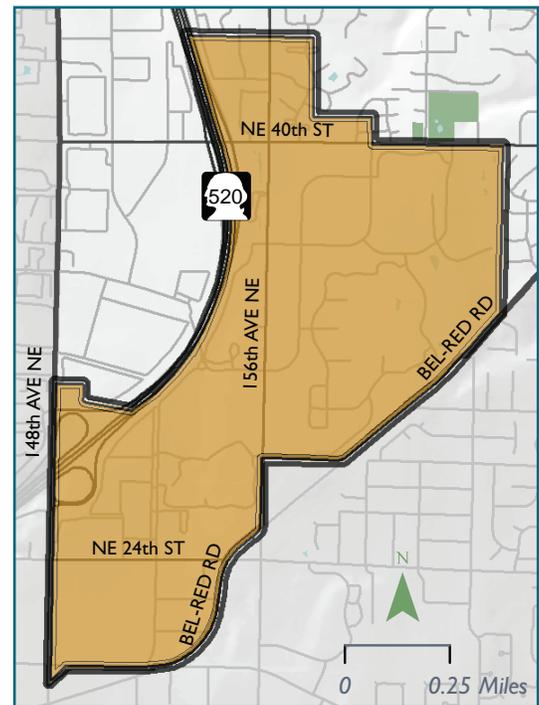
The transformation of Overlake will require a transportation system that supports this development with convenient regional access, an efficient network for internal circulation, and a multimodal approach to facility design and intermodal connections. These transportation improvements will be paired with amenities, including landscaping, protected natural features, and enhanced opportunities for social connections. City staff and the community have planned this future transportation system through the Overlake Neighborhood Plan Update process, and this TMP update incorporates the results of that plan.

Sustainability

The Redmond Comprehensive Plan, which sets the overall direction for the City, used sustainability as an organizing theme in its 2011 update and named six principles to help guide Redmond toward its vision (for more information, see the City of Redmond Comprehensive Plan, Chapter 1: Introduction). The 2013 update of the TMP is an opportunity to incorporate these principles into the City's transportation vision.

Complete Streets

In 2007 the Redmond City Council adopted an ordinance stating that the City will "plan for, design and construct all new transportation projects to provide appropriate accommodation for bicyclists, pedestrians, transit users and persons of all abilities in comprehensive and connected networks" (RMC 12.06.10). This "Complete Streets" ordinance is meant to ensure that Redmond's transportation system meets the needs of all users, and states that safety, public health, and the needs of pedestrians, bicyclists, and transit users are as important as vehicular mobility and access. The Complete Streets principle has been incorporated as a fundamental value in the TMP update.



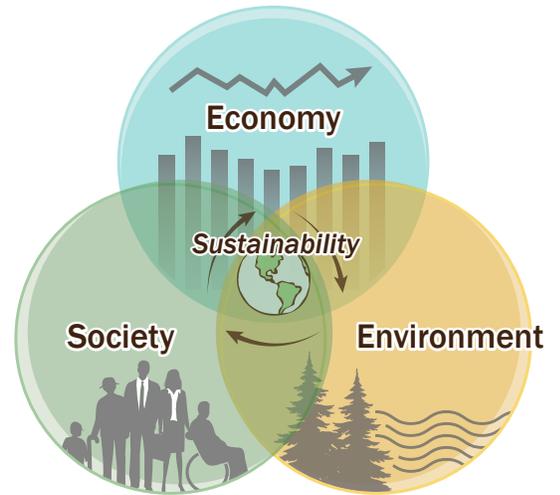
Overlake Urban Center

In recent years the City of Redmond has increasingly recognized the importance of sustainability in its planning documents, with sustainability defined as the meeting of the social, economic, and environmental needs of the present without compromising the ability of future generations to meet their own needs.

Transportation 2040

Developed by the Puget Sound Regional Council, Transportation 2040 is an action plan for transportation in the central Puget Sound region for the next 30 years. The plan is expected to support the projected growth in this region and associated travel demand while sustainably addressing the region's environmental, economic, transportation, safety, and overall quality-of-life objectives.

In addition to serving other important purposes, the Transportation 2040 plan guides future regional transportation funding decisions and sets a course for implementation of key regional projects and programs, affecting Redmond projects and programs of regional significance. Consistency between Redmond's TMP and the Transportation 2040 plan is an important contributor to Redmond's ability to leverage regional and federal funding for transportation projects. The TMP update incorporates relevant policies and projects of the Transportation 2040 plan.



Light Rail

In 2008 central Puget Sound region voters approved a transportation package that included funding for East Link, a light rail corridor extension from Downtown Seattle to Overlake via Bellevue. Once completed, East Link will connect the largest population and employment centers on the Eastside, with stations serving Seattle, Mercer Island, Bellevue, and Bel-Red, as well as Overlake in Redmond. East Link is scheduled to begin service by 2023, and by 2030 will carry about 50,000 daily riders through one of the region's most congested travel corridors.

While East Link initially will terminate at the Overlake Transit Center, Sound Transit's long-range plan calls for extending light rail to Downtown Redmond. Due to East Link's ability to provide significant mobility and travel choices, this TMP update establishes East Link light rail as an important pillar in the local and regional transportation systems and identifies the infrastructure and services required to fully leverage the public investment in this major regional transportation asset.



A complete street in Redmond with facilities for pedestrians, bicyclists, and drivers

People and the Economy

Key Trends

- Redmond's population and employment are forecasted to grow significantly by 2030. By that year there will be 41,000 more jobs than residents in the city, making regional transportation connections increasingly important.
- Most of the new development will be accommodated in Redmond's urban centers — Downtown and Overlake — where mixed use land use patterns favor lower driving rates and trips will be shorter than elsewhere in the city.
- Demand will increase for housing in walkable neighborhoods, but most Redmond residents will continue to live in single-family homes.
- Income data suggests that most Redmond residents and employees are likely to base their travel decisions on convenience and quality rather than economic necessity; a smaller proportion relies on public transit to access jobs and services.



Overlake Village in 2030 will feature light rail and mixed-use development

The Economic Downturn

In 2007 the U.S. entered a severe recession, resulting in reduced revenues for government services in Redmond and in communities across the nation. Private sector development in Redmond nearly halted, reducing the impact fee revenues that support local transportation system growth and maintenance. The recession officially ended in 2009, but recovery has been slow; development is not projected to recover to pre-recession levels until 2018, although the City is forecasting modest growth in the next six years.

The consequences of the economic downturn have been significant for the development and maintenance of Redmond's transportation system. Shrinking budgets required cutbacks in current and near-term capital investments, and reduced long-term revenue forecast will require the City to carefully weigh new investments against the need for system preservation. Because the demand for transportation services will continue to grow, careful Transportation Facilities Plan project selection to advance strategic goals will be essential. This was a particularly strong consideration in this update (see Chapters 2 and 6).

Growth and Land Use

Despite the recent recession, population and employment in Redmond continue to grow. Since the 1960s Redmond's population has increased by about 10,000 people per decade, reaching 55,000 in 2011. Employment has grown even faster – the number of jobs reached almost 79,000 that year, driven in large part by the expanding information technology sector

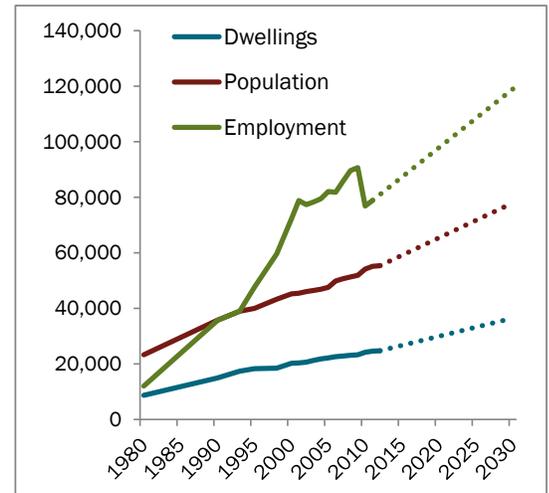


Figure 2. Population, employment, and dwellings in Redmond, 1980–2030



An artist's rendition of Cleveland Street after its planned improvements in 2014



Examples of land uses in neighborhoods outside of urban centers

(see Figure 3). Note that the 2009-2010 drop in employment was affected by two factors: 1) a change in Microsoft’s job reporting methodology and 2) actual job losses. Actual job losses within Redmond totaled 6,000, while a change in Microsoft’s job location reporting procedure reassigned 8,000 jobs outside of Redmond, although no physical relocations took place.

The City of Redmond expects the city to reach a population of 78,000 by 2030 – an increase of almost 50 percent from 2013. By that year, employment is projected to have grown to about 119,000 jobs. These figures for Redmond and the city’s urban centers are adopted in the Redmond Comprehensive Plan and were used in the travel demand forecast model in developing the TMP. The forecasted gap between the number of jobs and the number of residents indicates that many people with jobs in Redmond in 2030 will continue to commute to work from outside the city. As the volume of daily travel on Redmond’s regional connections rises, it will be important to ensure that workers have access to efficient and reliable means of transportation. This includes transit since SR 520 is unlikely to be widened within or near the city of Redmond in the next 20 years.

The City’s land use strategy will also help manage the forecasted growth in travel demand. In accordance with the City vision, most development and redevelopment will be directed to the two urban centers – Downtown and Overlake – where complementary land uses like housing, offices, and retail will be located close to each other. These mixed-use environments will lessen the need for longer automobile trips and will help travelers reduce their exposure to roadway congestion.

Downtown is envisioned as Redmond’s primary community gathering place and a neighborhood where housing, retail, and office uses coexist in a pedestrian-friendly environment. Overlake Village, centered around 152nd Avenue NE, will grow into an urban neighborhood with a vital mix of housing and retail, access to an East Link light rail station, and short commutes to the Microsoft campus and downtown Bellevue. Within both urban centers, the mix of land uses will allow more trips to be made conveniently and quickly on foot or by bike.

Other neighborhoods will grow as well (Figure 6). Southeast Redmond, currently home to a concentration of commercial and manufacturing land uses, will absorb much of the commercial growth that does not occur in the centers. Some additional single-family residential development is likely to occur in the North Redmond and Willows/Rose Hill neighborhoods, although all residential neighborhoods will approach their capacity by 2030 based on current zoning.



2030 Forecast
51% increase from 2012

Age and Household Size

While the median age of population in Washington State and the United States is rising due to the aging of the baby boomer generation and their children (the “Millennials”), Redmond’s median age of 34 years has remained unchanged over the past decade. Compared to Washington State and the U.S., Redmond has a younger working population and a smaller proportion of workers who are 65 years or older. Additionally, households in Redmond tend to be smaller than in the state as a whole. Between 2005 and 2010 the average household size in Redmond was 2.3, compared to 2.5 in Washington State.

National studies show that the children of the baby boomers are more likely than members of other age brackets to prefer housing in urban, walkable communities, which suggests that demand for multifamily housing in the urban centers will continue to grow, along with use of local pedestrian, bicycle, and transit connections. At the same time, many will choose detached single-family housing in Redmond’s neighborhoods, reaffirming the need for multimodal connections among neighborhoods and the urban centers. Retiring baby boomers are more likely to choose urban living than their parents’ generation, but market data suggests that most will remain where they were living before turning 50, which in Redmond is predominantly single-family housing. The automobile will remain the primary source of mobility for this group in the short term, but alternatives to driving, especially quality, all-day transit connections can ease the transition to a car-free lifestyle as baby boomers enter their 70s and 80s. Youth, who are in Redmond represented at rates similar to those in King County and Washington State, are reliant on transit, pedestrian, and bicycle connections for their independent mobility. Continued development of these networks gives youth mobility and eliminates some automobile trips.

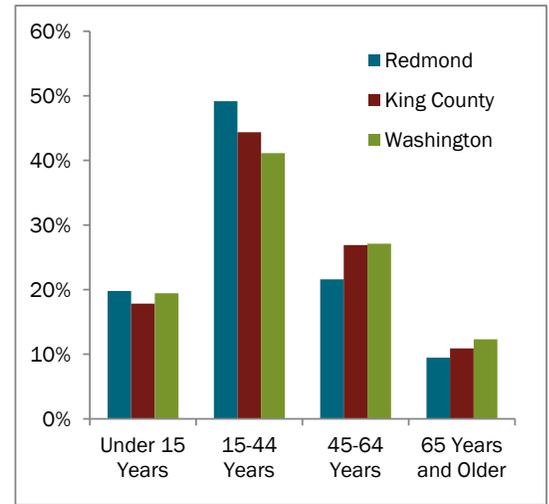


Figure 3. Population by age group in Redmond, King County, and Washington State

Income

Median household income for Redmond households is higher than in Washington State or the United States as a whole. Median household income in Redmond is also growing faster. The 2009-2011 median annual household income in Redmond was \$93,000, compared to \$68,000 in King County. This amounts to a difference of over \$25,000 in income per year. In 2000 that difference was \$18,000 in 2010 dollars.

Thus, most Redmond households can afford to drive, and the choice to use public transportation or to walk or drive is likely made on the basis of comfort and convenience. A smaller proportion of Redmond residents rely on public transit to access jobs and services. Public transit and pedestrian infrastructure should be developed to a high standard to attract customers from across the income spectrum.

Income \$



\$92,851
Median Household



\$46,748
Per Capita



Environment

Key Trends

- Runoff from roads carries automobile-generated pollution into local waterways and can damage habitat if not properly managed.
- Historical development in Redmond generally did not include facilities to treat and control stormwater. As new roads and buildings replace older development, the health of Redmond's waters will gradually improve, since new development will include treatment, employ runoff reduction strategies, and detain runoff.
- Air quality in Redmond is good and improving.

Water Quality

Once called “Salmonberg” due to its abundant salmon runs, Redmond has witnessed declines in the ability of its streams to support life and be safe for human contact. This is common throughout the Puget Sound region. Redmond is 71 percent developed with impervious surfaces, mainly pavement and roofs, and this developed land generates much more runoff than the wetlands and forest that preceded it. Developed lands also generate pollution, which ends up in local streams and rivers. Most of the city was developed prior to 1991, when Redmond began introducing stormwater controls, so most of the developed land does not have infrastructure to manage runoff beyond simply piping it to local water bodies.

The transportation system is a contributor to these challenges: roads cover 16 percent of Redmond's developed land and most roads were built without stormwater management infrastructure. Without treatment or detention, stormwater from roadways surges into local streams, destroying stream habitat and bringing pollution that makes it difficult for salmon and other organisms to survive. For example, Coho salmon spend their first year of life in our local streams before returning to the ocean. Copper (which is released from car brake pads), other pollutants, and unnatural fluctuations in stream flows due to development make it hard for Coho to survive.

Addressing this existing condition will take unprecedented investment in stormwater treatment infrastructure, including major capital projects. However, as the City of Redmond continues to upgrade the transportation system, there are incremental steps that it can take to improve the quality of local waters. These are outlined in Chapter 4 – The Multimodal Transportation System, under the “Street Design Framework” section. Additionally, Redmond has adopted regulations that require private developers to include stormwater treatment facilities when buildings are constructed or substantially renovated. It will take many years, but as older buildings are replaced and roads are built to higher standards, the health of local streams and rivers will improve.

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Air Quality

Internal combustion vehicles, which include most cars and trucks, emit gasses and particles in the course of their normal operation. Some of these emissions, like water vapor, are harmless. Others can seriously damage human health, as well as the health of the ecosystems we depend on for life. Some of the most serious pollutants from vehicles are:

- **Carbon dioxide (CO₂):** Nontoxic to humans, but contributes to the greenhouse effect, which disrupts climate patterns by raising the average global temperature.
- **Carbon monoxide (CO):** Reduces oxygen delivery to the body's tissues and organs, including the heart and brain.
- **Particulate matter (PM):** Linked to respiratory illnesses, heart attacks, and premature death in people with heart or lung disease.
- **Nitrogen oxides (NO_x) and sulfur oxides (SO_x):** Worsen respiratory diseases such as emphysema and bronchitis. Can aggravate existing heart disease, leading to increased hospital admissions and premature death. Additionally, these pollutants contribute to acid rain.
- **Organic Gases:** Are irritating to the eyes, nose, and throat. Can cause liver, kidney, and central nervous system damage. Can react with NO_x to form smog.



The Leary Stormwater Treatment Wetland treats runoff from 18 acres of commercial development.

Health impacts from vehicle emissions are most severe among those who live, work, or go to school within about 700 feet of heavily trafficked roadways; but some pollutants, like PM 2.5, can cause harm at greater distances. The Washington State Department of Ecology estimates at least 1,100 premature deaths in the state due to PM 2.5 every year.

There are no continuous public air quality monitoring stations within Redmond, but sites throughout the Eastside show that air quality in the area is good today and is gradually improving. At the closest station, in Bellevue, the average annual concentration of PM 2.5 decreased by over 30 percent between 2005 and 2012, and values are well below the U.S. Environmental Protection Agency's standard of 12 micrograms per cubic meter, which was recently strengthened from 15 micrograms per cubic meter (see Figure 4). Visibility in King County, which is influenced by particulates, NO_x, and SO_x, increased from a yearly average of 47 miles in 1991 to 81 miles in 2009.

By most measures, air quality is likely to continue to improve into the future as the motor vehicle fleet becomes more efficient. The Redmond travel model forecasts significant reductions in four of the five most important pollutant classes between 2010 and 2030, attributable mostly to technological improvements to automobile emissions systems (see Figure 5). PM 2.5 levels will likely increase slightly, as the increase in total driving will offset the anticipated improvements in emissions reduction technology for that particular pollutant.

Individuals can help improve the air in Redmond by choosing to live closer to work or school; walking, biking, or taking transit when possible; and by buying cleaner vehicles.

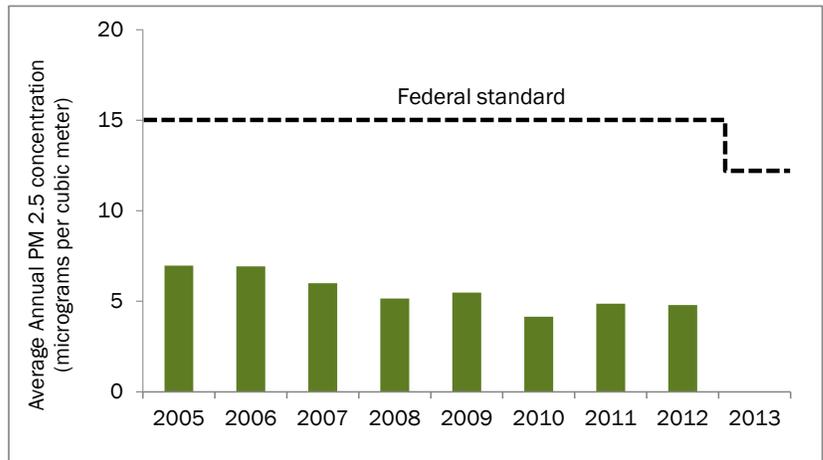


Figure 4. Average annual PM 2.5 at Bellevue NE 4th Street monitoring station

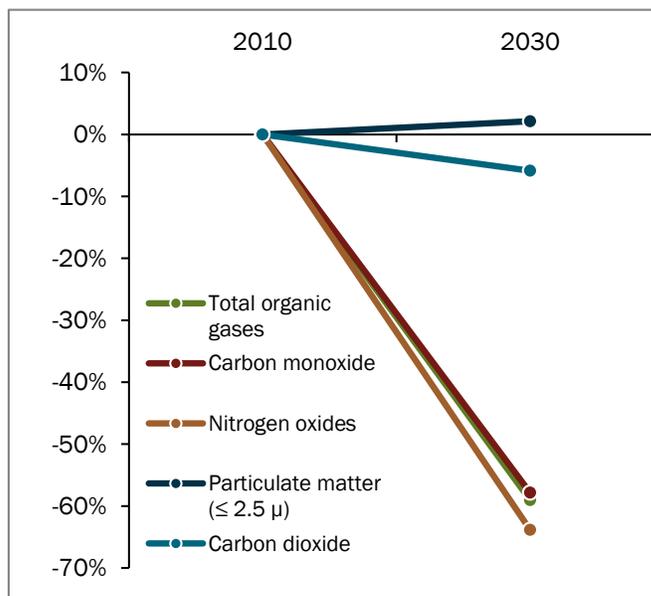


Figure 5. Projected trends for major automobile pollutants: 2010-2030

Travel Patterns

Key Trends

- Observed traffic volumes have decreased between 2001 and 2010, despite increases in population and employment. Computer models predict traffic volumes will grow between 2010 and 2030.
- Trips in Redmond take place throughout the day, are mostly for purposes other than work, and are short: 75 percent are five miles or less in length, and 25 percent are less than a mile. Growth in the urban centers will reinforce this pattern of short trips.
- Commutes tend to be longer than other kinds of trips, and are concentrated during the morning and evening peak travel periods.
- Transit provides significant mobility for workers in Overlake, and the arrival of light rail to Southeast Redmond and Downtown will increase transit mode share in those areas.

Mode Share

The term *travel mode* refers to the manner of travel and includes transit, walking, bicycling, carpooling, and driving alone. *Mode share* is the percentage of travel conducted by each of these modes. The success of Redmond's urban centers and their compact growth patterns depends on achieving a more diverse mix of travel choices, with greater reliance on bicycling, walking, and transit than occurs today. In the future, the mode share in Redmond will also indicate how successful the City and other transportation agencies have been in improving the attractiveness and functionality of alternatives to single occupant vehicle travel.

Table 1. Mode share for Redmond and the Puget Sound region

Population	 Single Occupant Vehicle (%)	 High Occupant Vehicle, including carpool (%)	 Transit (%)	 Walk (%)	 Bike/Other (%)
Puget Sound Household - Daily Trips (2006)	44	40	4	8	5
Redmond - Daily Household Trips (2010)	47	41	4	7	1
Redmond - All Daily Trips (2010)	56	33	2	8	1
Redmond - All Daily Trips (2030)	47	33	6	13	1
Redmond - All Daily Trips (Long-range goal)	42	31	7	15	5

In 2010 Redmond residents chose to drive, bike, walk, and take transit at rates comparable to the rest of the region (see Table 1). Driving alone is the most commonly used mode, followed by high occupancy vehicles (including carpools) and walking.

The City's travel model work forecasts that the percentage of trips taking place by single occupant vehicle (SOV) will drop to 47 percent as the City implements the projects and programs in the TFP, as transit options expand, and as predicted land use changes take place.

Travel Length and Purpose

A mixed, compact land use pattern improves access between housing, jobs, and services by shortening travel distances. Rather than driving several miles to a grocery store, for example, a resident in an urban center might walk a few blocks, avoiding the need to drive in congested conditions or find a parking place at the destination.

Today, three quarters of trips made by Redmond households are five miles or less, and about one quarter are less than a mile. According to results from the 2010 Redmond Household Travel Survey,



Employees arriving at the Overlake Transit Center

many of these short trips are made on foot. In fact, when a trip is less than one mile in length, more Redmond residents walk than drive alone (see Figure 6). This pattern of shorter trips by means other than the single occupant vehicle is likely to become even more common as Downtown and Overlake grow in population and employment. Housing, retail shops, parks, and workplaces will be close to each other in these urban centers, facilitating walking, bicycling, and short transit trips.

Compared to Redmond residents, in-commuting employees tend to take longer trips (an average of 10 miles versus 6 miles for Redmond households). They are less likely to walk, and somewhat more likely to bike than the typical Redmond resident. However, employee travel trends can vary based on location. Commuters to Overlake — a transit hub and home of the main Microsoft campus — take the bus at a much higher rate than employees elsewhere: 16 percent for Overlake compared to 4 percent in the rest of the city. Although work-related trips represent just 25 percent of all travel, commuting is a significant contributor to congestion since most trips of this type are compressed into a short period of time (the morning and evening rushes). These peaks in travel demand overwhelm the street network and result in delay. For this reason, travel demand strategies that shift peak period trips to non-single occupant vehicle modes or to other times of the day can reduce the severity of congestion.

Most employees in Redmond live outside the city and commute in for work (see Figure 7), with Overlake as the destination for 40 percent of these trips. Other top destinations for commuters are Downtown (10 percent), Southeast Redmond (9 percent), and Willows (7 percent). Commuting is a significant component of daily travel in the city: Redmond's population more than doubles during the day due to incoming trips, to an estimated 101,000 in 2011.

The Redmond travel model predicts that by 2030 about 40,000 more employees will be commuting to Redmond than today — a 40 percent increase — with most of those new trips destined for Overlake (61 percent), Southeast Redmond (21 percent), and Downtown (10 percent). The number of workers who both live and work in Redmond will grow to 27,000, or about one fifth of total Redmond commuters.

These data show that regional travel routes are particularly important for Redmond businesses and employees, given the large percentage of workers who commute in from neighboring communities. Redmond will need connections like SR 520, SR 202, and Redmond Way to serve an increasing number of commuters as the city adds jobs faster than it adds housing. Not all of this increased demand must be served by automobile trips, however. As Overlake demonstrates, Redmond employees take transit in large numbers when service is fast, frequent, reliable, and direct to the work site. Transportation demand management programs are also important elements, reducing peak hour loads on the transportation system and better utilizing existing facilities throughout the day. The alternative is widening roadways at great expense to accommodate high volumes of vehicles during peak hours, leaving the roadway system underused for most of the day.

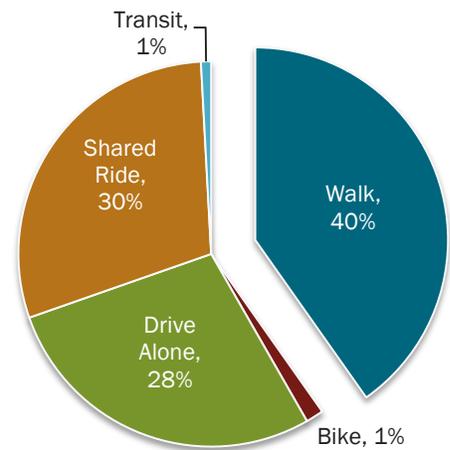


Figure 6. Mode split for daily household trips under one mile in Redmond. Forty percent are made on foot.

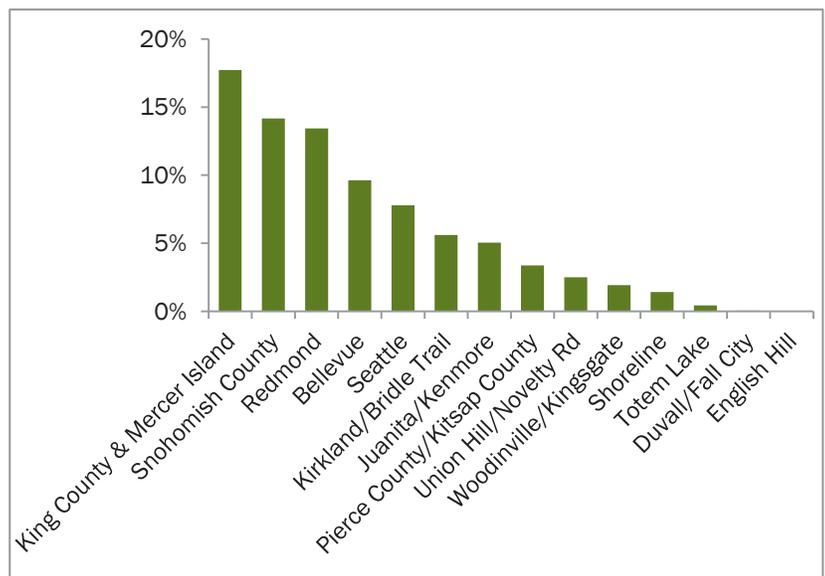


Figure 7. Redmond employee place of residence

Traffic Volumes

While driving is the most common form of travel in Redmond, traffic volumes and per person driving rates have decreased over the past decade, beginning before the economic downturn in 2008-2009. Figure 8 summarizes the past ten years of observational traffic data in Redmond. Traffic volumes have decreased over the past ten years, even as population and employment increased.

This trend of flat or declining motor vehicle volumes in Redmond is consistent with trends at the county and state levels. Per capita vehicle miles traveled (VMT), a measure of how much the average person drives in a year, is lower than at any time since before 1993 for both King County and Washington State, and total VMT is unchanged since 2000. Estimates of vehicle miles traveled (a measure of total driving) by Redmond's travel model have also indicated a decline in total vehicle miles traveled between 2000 and 2010. However, the model projects that total driving will increase by about one-third by 2030 based on the City's adopted land use plan (see Figure 9).

While the overall driving rate decreased in recent years, congestion is still present on Redmond streets during peak periods. Model outputs suggest that congestion will grow modestly between 2010 and 2030.

Transit Ridership

On an average weekday, about 25,000 boardings take place on public bus routes that serve Redmond, including 8,000 boardings within the city limits. Transit carries about 4 percent of all trips in Redmond and 16 percent of trips to Overlake, home of Microsoft and the largest concentration of jobs in the city.

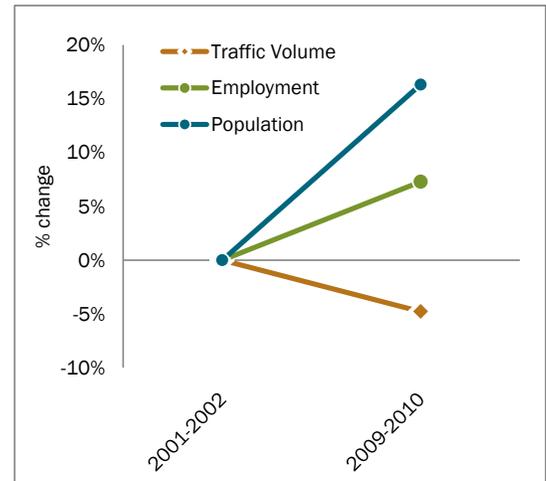


Figure 8. Redmond vehicular volumes, employment, and population (actual)



SR 520: a critical regional connection for Redmond

Most transit service in Redmond is provided by King County Metro Transit and Sound Transit — public agencies that operate fleets of buses and vans. Total revenue hours of service provided by these agencies has increased in recent years with the passage of the Transit Now and Sound Transit 2 funding packages in 2006 and 2008, respectively. Revenue hours for Redmond-serving routes (a measure of the quantity of transit service provided) rose by slightly more than 50 percent between 2000 and 2010, and ridership during that period rose proportionately (see Figure 10).

Today the majority of service hours and ridership in Redmond is focused on eight routes that provide service throughout the day. All-day service currently exists between transit centers in Redmond and regional transit hubs. However, this network of all-day services is incomplete. Some neighborhoods do not have any transit service during the middle of the day, or on nights or weekends. Developing and supporting an interconnected network of local and regional services that operate throughout the day will be critical to support a wider range of travel needs to a variety of destinations throughout the day. There is a growing need for “First and Last Mile” connections to and from major transit hubs and corridors. To address last mile issues on its campus, Microsoft has launched the Shuttle Connect service to circulate employees between transit stops and employment sites.

Despite record ridership in recent years, transit faces an uncertain future in Redmond due to funding challenges. King County Metro Transit, which operates several major lines in Redmond, has been impacted by declining sales tax revenues and the impending expiration of two temporary funding sources. Without new revenue, Metro may be required to cut one-sixth of its service hours. Sound Transit, on the other hand, is not anticipating service cuts and is working to bring East Link light rail to Bellevue and Redmond in addition to its continued operation of ST Express bus service. The rail line, which is expected to serve 50,000 riders per day systemwide (5,500 from the Overlake Village and Overlake Transit Center stations), is scheduled to reach Overlake in 2023. A future connection to Downtown Redmond is planned but not yet funded.

See Chapter 5-2 (“Transit”) for more information.



The King County Metro RapidRide B line, a new addition to Redmond's transit network

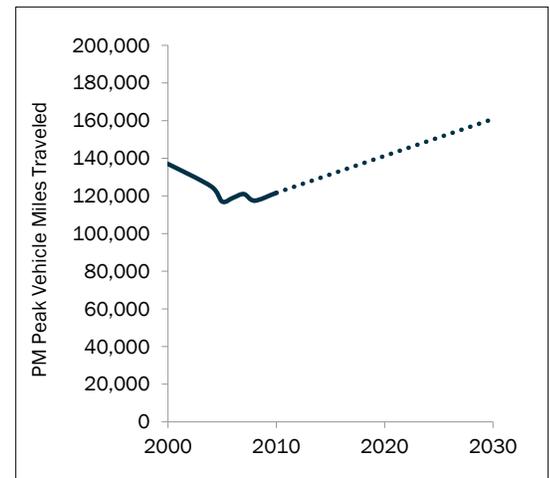


Figure 9. Estimated PM peak vehicle miles traveled in Redmond

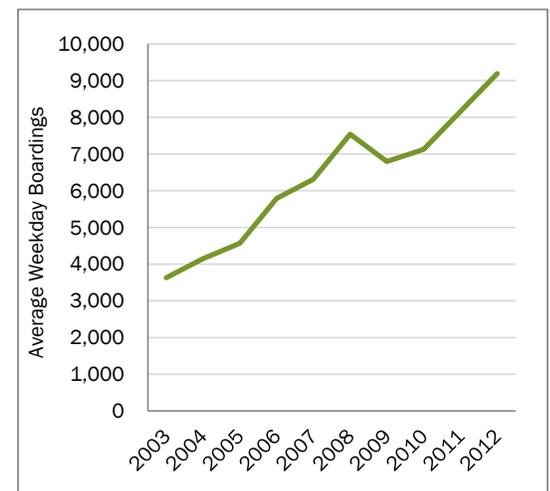


Figure 10. Public transit ridership in Redmond, 2003-2012

Safety

Key Trends

- Redmond has a lower rate of traffic-related injuries when compared to neighboring cities, and the rate is dropping. The absolute number of collisions has remained steady since the beginning of the 2000s despite an increase in population and employment.
- Bicycle and pedestrian collisions experienced a spike in 2007 and 2008, but have returned to 2003 levels.

Collisions, Injuries, and Fatalities

Compared to its neighbors, Redmond has a low rate of traffic-related injuries and fatalities. In 2011 Redmond had 2.7 injuries per 1,000 people (daytime population), compared to an average of 5.6 injuries for surrounding communities (see Figure 19). Furthermore, Redmond’s injury rate has declined over 20 percent since 2002. Likely contributing factors include City of Redmond activities, such as the Targeted Safety Improvement Program, Neighborhood Traffic Calming Program, safety-oriented project design, improvements in vehicle safety technology, traffic safety education, and police enforcement initiatives.

On an absolute basis, total collisions have remained unchanged throughout the 2000s, although injury collisions declined about 20 percent. These were offset by an increase in the number of property damage-only collisions. The apparent drop in collisions in 2009 is most likely due to a change in reporting methodology at the state level: from 2009 on, only officer-reported collisions are entered into the state database.

Like the yearly collision totals shown in Figure 12, collisions involving bicyclists and pedestrians have remained steady over the past ten years despite an increase in population (see Figure 13). The number of bicycle collisions doubled between 2003 and 2008 before falling back – a trend that tracks closely with the cost of gasoline. It may be that increases in gas prices encouraged larger-than-usual numbers of people to try bicycling and walking during that time period. It may also be that the change in reporting methodology mentioned above has reduced the number of collisions that are entered into the state’s database.

Enforcement

Law enforcement is a critical component of traffic safety, and staff throughout the City work together on an ongoing basis to improve traffic safety.

The Traffic Safety Committee is an interdepartmental forum where stakeholders – Police, Public Works, Planning, and others – meet to share information and discuss strategies to improve safety, such as emphasis patrols to reduce distracted driving and to protect vulnerable users such as pedestrians and bicyclists.

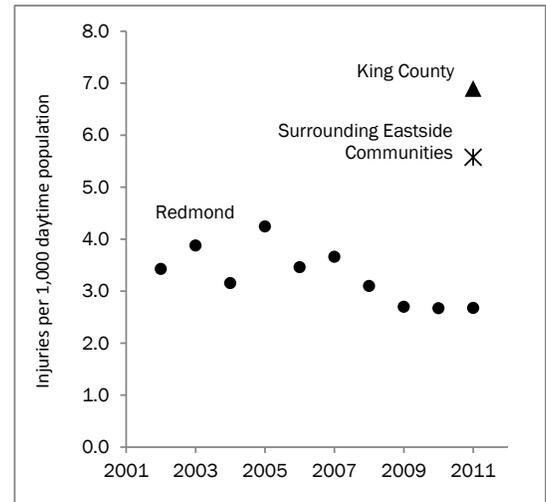


Figure 11. Per capita traffic injury rates in Redmond, King County, and surrounding Eastside communities

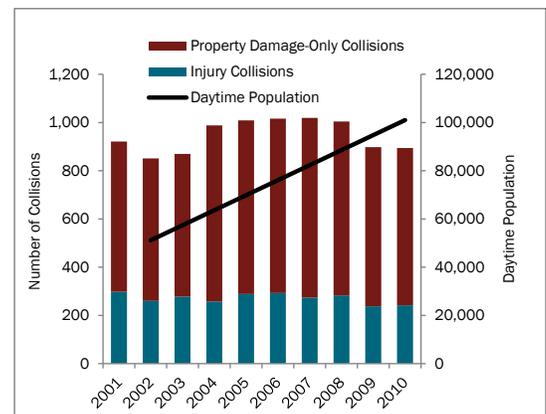


Figure 12. Collisions in Redmond: 2001–2010

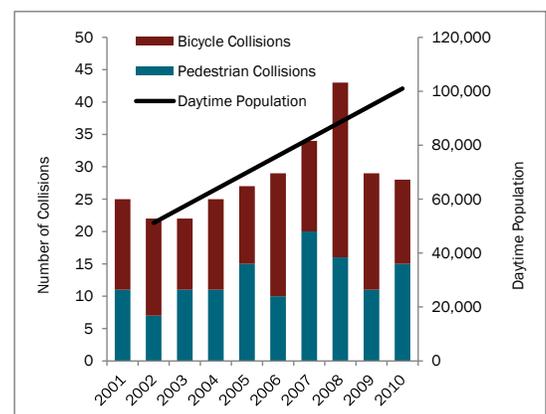


Figure 13. Pedestrian- and bicycle-involved collisions in Redmond: 2001–2010

Transportation capital projects are also sometimes paired with increased enforcement. For example, the 164th Avenue NE rechannelization will include emphasis patrols with the goal of improving yield and signal compliance by drivers, pedestrians, and bicyclists.

Future Activities and Challenges

The City of Redmond works to ensure that Redmond residents, employees, and visitors can get to their destinations safely and comfortably. Safety is a top consideration in every project design, and staff continually monitor conditions and respond to problems should they arise. Some of the ongoing safety-related work at the City includes a yearly analysis of collision “hot spots,” the Neighborhood Traffic Calming Program, safety education and outreach to citizens in advance of special events, such as the beginning of the school year, and implementation of new technologies such as LED street lights.

Maintenance

Key Trends

- Redmond has so far maintained its transportation system to a high standard, but as the city ages additional resources will be required to avoid declines in level of service.
- New challenges, such as the maintenance of the City’s new Intelligent Transportation System infrastructure and the aging of the sidewalk network, are emerging.

Existing Maintenance Activities

Pavement management is the most costly maintenance activity performed by the City, representing about 40 percent of the transportation maintenance budget in 2011, or about \$1.3 million per year. Preventative maintenance is highly cost-effective in the context of pavement management, since aged roadways degrade rapidly and eventually require expensive reconstruction. Simple upkeep, like regular overlays of fresh asphalt, minimizes the life cycle cost of a section of roadway (see Figure 14).

Since 2003 the average arterial pavement quality has declined from a Pavement Condition Index (PCI) of 91 (very good) to 73 (adequate) (see Figure 23). At existing funding levels, the average PCI will continue its downward trend, and some roadways will become significantly degraded. Eventually, the cost of bringing the system back to an adequate condition will begin to increase exponentially as roadways degrade and require more intensive repairs.

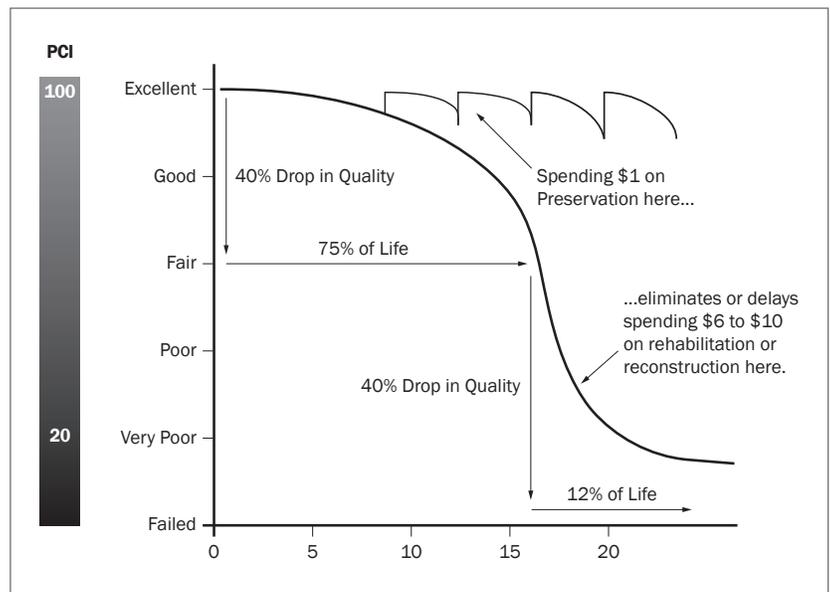


Figure 14. Preventative pavement maintenance results in substantial savings (Image source: FHWA)

Other maintenance activities by the City include curb and gutter maintenance, bridge repair, traffic signal upkeep, street lights, street landscaping, stormwater facilities, and general street maintenance.

Future Issues

Compared to roadways, sidewalks have a long life expectancy — 30 to 40 years. Until recently the City has not needed to devote significant resources to sidewalk upkeep since many of Redmond’s sidewalks are relatively new. Redmond’s pedestrian infrastructure, however, is aging and more sidewalks are reaching the end of their useful lives. As a result, the Department of Public Works is developing a sidewalk inventory and budgeting system to rate the 235 miles of sidewalk that Redmond is responsible for maintaining. Once in place, the sidewalk maintenance program would identify sections needing repair or replacement and undertake a project to fix them every other year. Additionally, the City works to design sidewalks in a way that provides a long useful life, such as removing the brick banding requirement for sidewalks in Downtown, which has reduced the useful life of those sidewalks. The City must meet new federal standards for curb ramps under the Americans with Disabilities Act.

Another emerging maintenance need is the upkeep of the City’s Intelligent Transportation System (ITS) infrastructure. ITS is the system of sensors, cameras, and computers that the City uses to optimize traffic signal timings in real time. Like personal computers, the hardware and software components of this system must be replaced on a regular basis. Redmond’s ITS system was installed throughout the 2000s and is now due for an upgrade.

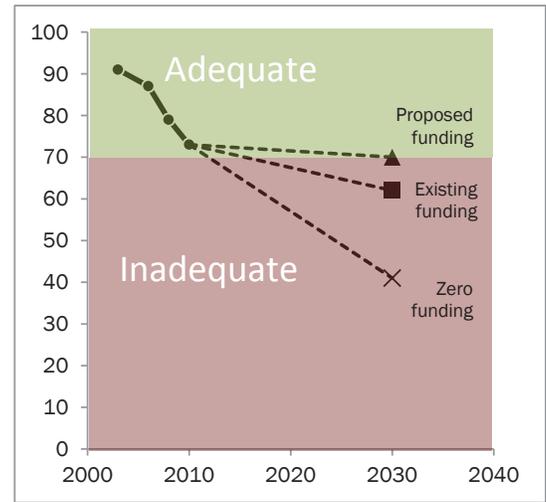


Figure 15. Pavement management funding scenarios



Redmond Traffic Management Center

Transportation System Implementation

Key Trends

- Since 2005 the City of Redmond has delivered projects at a strong pace, with 55 percent of the 18-Year Transportation Facilities Plan completed or committed within six years.
- Delivery of Downtown pedestrian improvements and citywide bicycle system projects have occurred on pace, while Overlake Village improvements and the citywide pedestrian improvements occurred more slowly than anticipated in 2005.

2005 TMP Delivery

In the seven years since the TMP was adopted, the City, in partnership with the community and a variety of stakeholders, has achieved several significant transportation improvements that were outlined in the TMP and which advance the guiding principles. In Downtown these include the Bear Creek Parkway Extension (see Figure 25), which provided an additional street connection through Downtown Redmond and improved conditions for pedestrians and bicyclists; the 161st Avenue NE and 164th Avenue NE Extensions, which helped complete the Downtown street grid; and the Redmond Central Connector, which provides a high-quality pedestrian and bicycle connection through the heart of Downtown. In Overlake, the NE 36th Street Bridge improved connections across SR 520 and helped prepare the neighborhood for the arrival of light rail. Throughout the city new connections and spot improvements have improved mobility for all travelers. In all of this work, the City of Redmond has sought to maximize the impact of City dollars by leveraging grants and developer contributions. Between 2005 and 2012 Redmond was awarded \$39 million in federal and state grants covering 17 percent of capital costs for that period.

Percentage of Network Completion

The 2005 TMP provided several ways to track the City of Redmond's delivery of transportation improvements. One of those methods is by monitoring the completion of the 2022 Transportation Facilities Plan (TFP), which is the list of transportation projects to be completed in the 18 years following the adoption of the 2005 Plan. Despite a volatile revenue and project cost environment, 55 percent of TFP projects were completed or committed in the six-year Capital Improvement Program by the end of 2011.



Figure 16. The Bear Creek Parkway extension created an important new connection in Downtown.

Table 2. Multimodal network completion in the 2005-2018 Transportation Facilities Plan

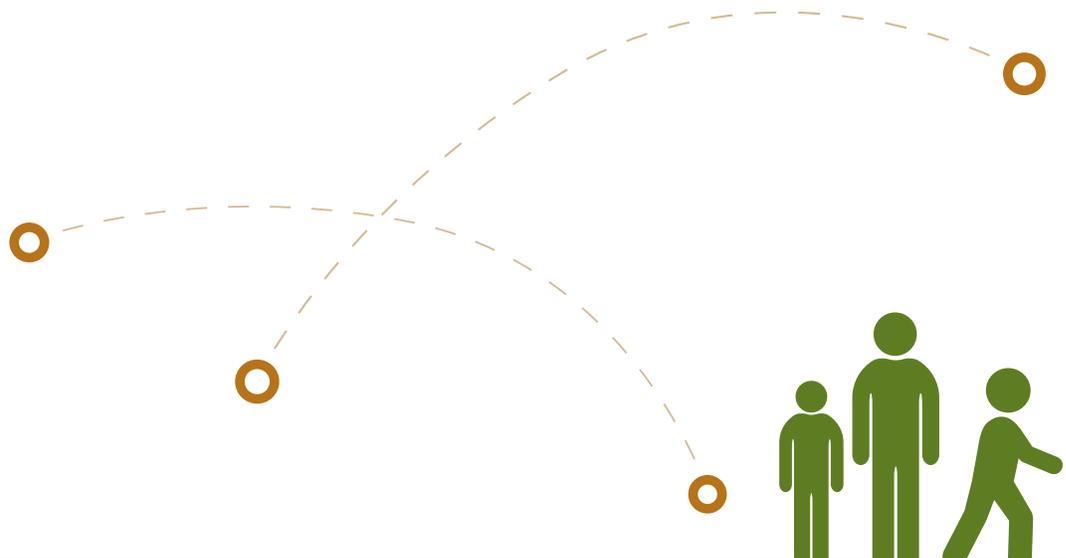
Year	Multimodal Corridors (% Pedestrian Supportive or Better)	Overlake Village (% Pedestrian Supportive or Better)	Downtown (% Pedestrian Supportive or Better)	Bicycle System (% Completed by Mileage)
2007	5	9	45	51
2009	6	10	53	55
Objective (2022)	100	100	100	100

The 2005 TMP also set goals for improving the pedestrian environment on key multimodal corridors and in the urban centers, and for improving conditions for bicyclists on primary and secondary bicycle corridors. Results as of 2009 are presented in Table 2. The Downtown pedestrian environment and the citywide bicycle system saw improvements at the pace needed to reach their 2022 goals. Overlake Village did not, but is likely to see rapid improvement as the master plan for that area is implemented in coming years. There were not sufficient pedestrian projects to improve the multimodal corridors at the targeted pace.

Four years later, in 2009, 55 percent of the TFP was complete or committed. This update of the Transportation Master Plan also includes an updated TFP. At present 46 percent of total project and program funding has been committed for the next six-year period.

Conclusion

Since 2005 when the previous Transportation Master Plan was adopted, the City of Redmond has continued to assume its role as a regional jobs center, and continues to experience both employment and residential growth. In order to maintain a high quality of life and the clean, green character that attracts business and residents to the city, this growth is being targeted to the city’s two urban centers: Downtown and Overlake. For these urban places to be successful, a full range of transportation choices will be needed. Without good alternatives to the single occupancy vehicle, quality of life will suffer. The Transportation Master Plan is part of the City’s work to ensure that we preserve the best aspects of Redmond’s community character, while building great urban centers that function effectively.



Chapter 3:

Performance Measurement

Introduction

Performance monitoring and reporting is the regular measurement, analysis, and reporting of the results of projects, programs, and policies. It is an integral part of the City of Redmond's approach to delivering the Transportation Master Plan (TMP), and offers several benefits for the City and stakeholders:

- **Direction:** Performance measurement reveals whether City activities are achieving the strategies and citywide principles set forth in the TMP. If they are not, the process gives decision makers the information they need to change course.
- **Accountability:** Citizens can judge how well the City of Redmond is delivering public services and whether those services are creating value for the public. Additionally, the City can use performance measurement data to improve efficiency within departments.
- **Motivation:** Seeing progress toward goals can energize staff, decision makers, and the public.
- **Communication:** The results of a performance measurement system can form the basis of a discussion among community stakeholders, and elected officials about the progress toward achieving the vision of the City of Redmond.
- **Funding:** MAP-21, the federal transportation bill passed in 2012, will require performance monitoring and reporting as a condition for federal grants, and requires state and regional funding agencies to begin using performance monitoring as part of their funding allocation and grants processes.



During the development of the TMP, the City of Redmond identified nine performance measures that, together, demonstrate whether implementation of the TMP is achieving the strategies and citywide general principles laid out in Chapter 1. These are referred to as the “dashboard” measures:

- Connectivity
- Network Completion
- Mode Share
- Vehicular Congestion
- Transit Ridership
- Concurrency
- Safety
- Air and Water Quality
- Street Preservation

The federal transportation bill passed in 2012 will require performance monitoring and reporting as a condition for federal grants, and requires state and regional funding agencies to begin using performance monitoring as part of their funding allocation and grants processes.

These nine measures are central to the evaluation of the progress of the TMP, and will be highlighted in the City's regular transportation performance measurement report, the Mobility Report Card. The Mobility Report Card is an annual summary of the progress made by the City toward the goals laid out in the TMP, and has been published annually from 2007 through 2011. In future years, the Mobility Report Card will evolve into a continuously updated online resource, where data will be published as they become available.

For each measure in this chapter, the TMP identifies the current or "baseline" condition, a target for the year 2030 when the Transportation Facilities Plan will be complete, and an aspirational target. Aspirational targets are the City's performance goals for the years beyond 2030. They represent outcomes that the City eventually wants to achieve, but which are not expected to result from the level of investment proposed in the 2013-2030 Transportation Facilities Plan (TFP). The rationale for each aspirational target is described in each measure's subsection, below.

In addition to the measures listed above, the City of Redmond collects data on several additional measures for the purpose of assisting staff and elected officials with more detailed decision making. These measures are listed in Appendix B: Supplementary Performance Measures, and will be included in the Mobility Report Card as they are generated.



Dashboard Measures



Connectivity

The main purpose of the transportation system is to facilitate access: the ability of people to reach goods, services, and activities. Access can be improved in several ways, from decreasing travel times to locating complementary land uses close together. Another way to improve access is to increase the number of connections in the transportation network, which shortens the distances between origins and destinations. This concept is known as connectivity. Connectivity is important for all modes, but is particularly supportive to pedestrian and bicycle travel, which are more sensitive to travel distance than vehicular trips.

Connectivity in Redmond today varies widely by neighborhood. In the Downtown urban center, where blocks are short and there are many through streets, connectivity is high. Connectivity is lower in the residential neighborhoods, which were originally designed to limit through traffic and subsequently have fewer connecting streets and paths.

Connectivity is a significant measure for the TMP key strategies Travel Choices and Mobility and Strong Support for Urban Centers.

By providing direct routes to destinations, a well-connected grid makes it easier to walk or bicycle.

Methodology

Connectivity is expressed as the percentages of the Downtown urban center and Overlake Village, by developed square footage, that achieve connectivity levels of "medium" or higher. The Downtown urban center and Overlake Village are reported because of the City's goal of developing a fine-grained network of streets in those areas. New connections within Redmond's residential neighborhoods are important, and several such projects are included in the Transportation Facilities Plan. These projects improve connectivity locally, but have a limited impact on area-wide connectivity, and will be evaluated on an individual basis rather than as part of this dashboard measure.

Connectivity is calculated by finding the average route directness value for each parcel, and then determining the percentage of developed floor area within Downtown and Overlake Village that falls

within parcels that have a connectivity level of medium or above. In other words, it tells us the percentage of our land use that is in areas of high connectivity. Average pedestrian route directness is the ratio of straight-line distances to real-world travel distances for sets of points along the pedestrian network, and it indicates how far pedestrians must go out of their way to reach surrounding destinations. Low values indicate a relatively high amount of out-of-direction travel, while high values indicate more direct travel (see Table 2).

The TMP identifies five modal corridor networks: automobile, bicycle, pedestrian, transit, and truck.

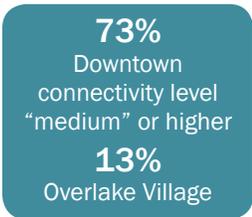
Table 3. Connectivity categories

Connectivity Level	Average Pedestrian Route Directness
Very High	0.75 – 1.00
High	0.70 – 0.75
Medium	0.65 – 0.70
Low	0.60 – 0.65
Very Low	0.00 – 0.60

Targets

Targets are based on the connectivity outcomes of projects in the TFP and the long-term Buildout Plan (see Figures 17 and 18). The 2030 target includes projects and programs named in the TFP, as well as planned private connections identified in development agreements. All other connections, including planned private connections that are not yet subject to a development agreement (such as many of the new roads west of 152nd Avenue NE in Overlake Village) are included in the aspirational target.

2013 Baseline



2030 Target



Aspirational Target



Network Completion

The TMP identifies five modal corridor networks: automobile, bicycle, pedestrian, transit, and truck. The corridors are intended to highlight modally specific routes that connect major local and regional destinations. The corridors also help the City allocate limited street space, and in some cases they establish design standards and service levels to ensure adequate mobility for all modes. For more information about modal corridors, including maps, see Chapter 4 - The Multimodal Transportation System.

Progress toward the completion of these networks is an indication that the City is successfully delivering the TFP and implementing the policies contained in the TMP. The network completion measures support the Strong Support for Urban Centers, Travel Choices and Mobility, and Neighborhood Access strategies. It also indicates progress toward implementing the City's Complete Streets policy, which requires that projects accommodate the full range of transportation users.

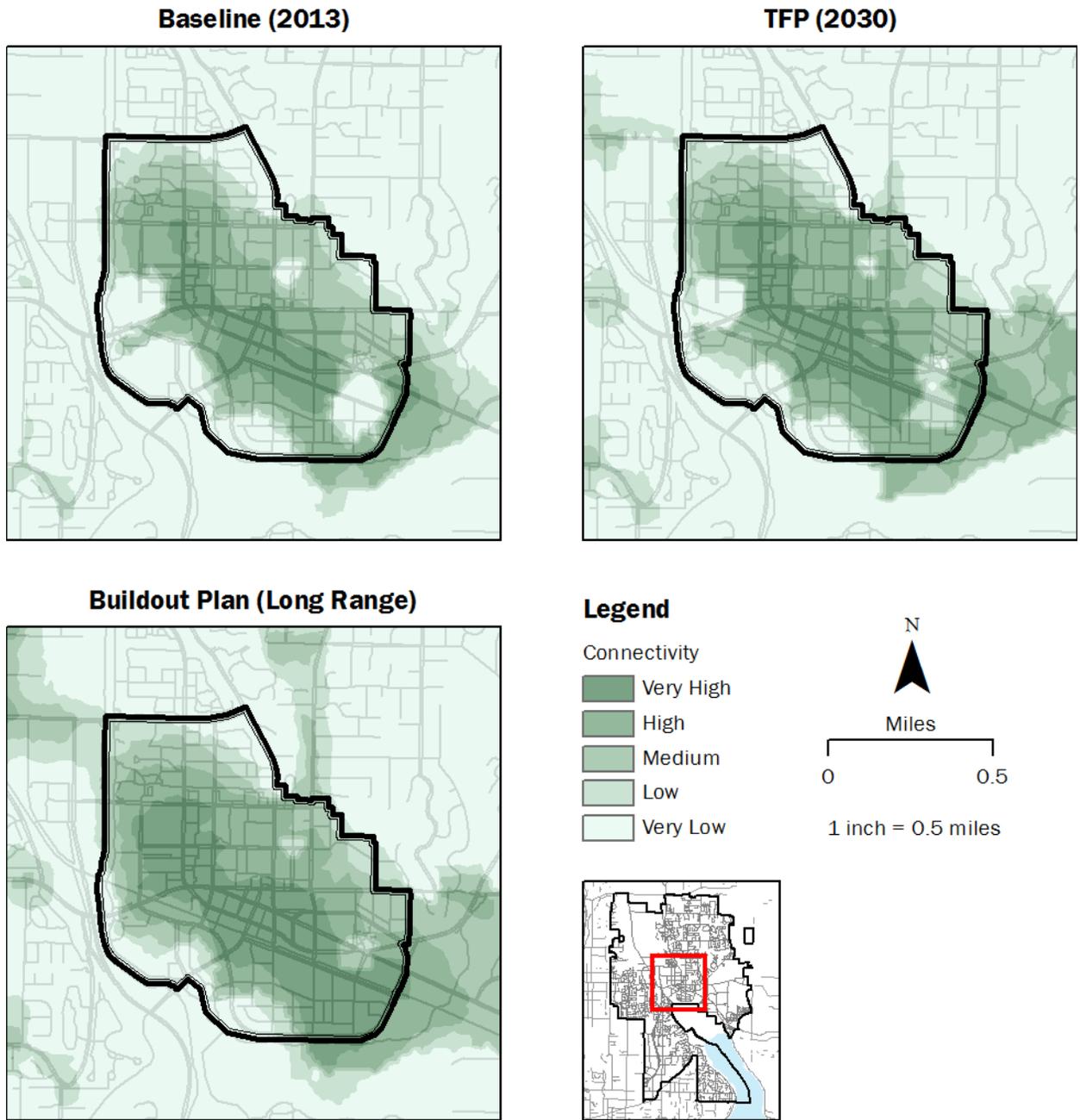


Figure 17. Connectivity levels in Downtown (Dark green indicates high connectivity.)

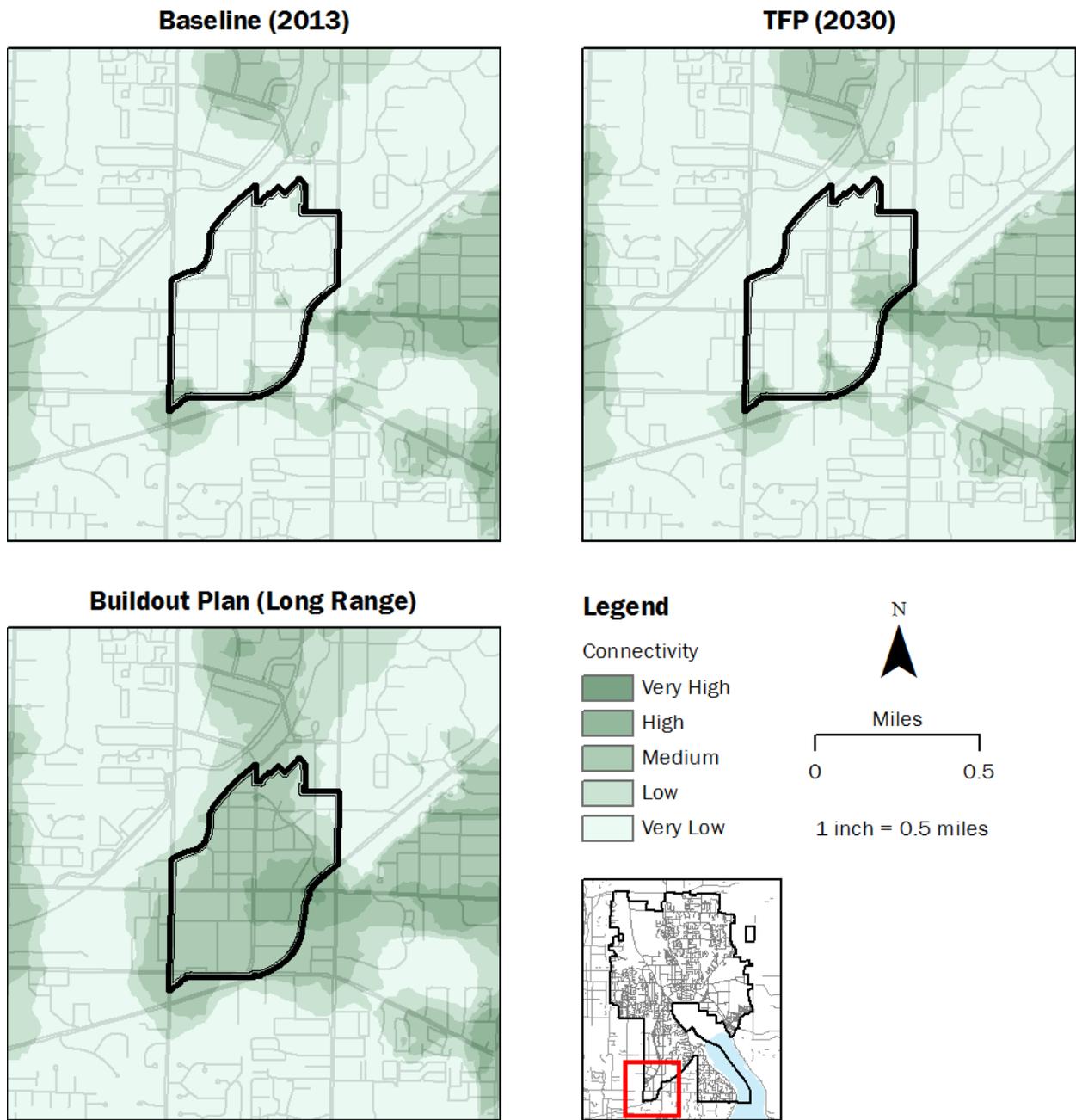


Figure 18. Connectivity levels in Overlake Village (Dark green indicates high connectivity.)

Methodology

Network completion is expressed as the percent of each modal corridor that is considered complete, by length. The definitions of completion vary by modal network. The City will explore expanding this measure to all city streets as part of the Mobility Report Card, in order to better measure progress on implementing Redmond's Complete Streets ordinance.



Automobile

Segments of the automobile network are considered "complete" if they are in their final configuration, and do not have a reconfiguration project identified for them in the TFP or the Buildout Plan, which is the City's long-term list of planned transportation improvements. Intersection improvements are assumed to influence the portions of connecting streets within 300 feet of the center of the intersection.



Bicycle

Segments of the bicycle modal corridor network are considered "complete" if they are served by a trail or another type of physically separated bikeway, such as a cycle track. Bicycle lanes are not considered physically separated bikeways. This reflects the standard set forth in bicycle section of Chapter 4 - Multimodal Transportation.



Pedestrian

Pedestrian network completion is reported as 1) the percent of connections within Redmond's pedestrian priority zones (Downtown and Overlake urban centers, together with the area within one-half mile of a light rail station areas) that achieve a high level of pedestrian-oriented design, including increased width and landscaping; and 2) the percent of the transportation network in Redmond's neighborhoods that has some pedestrian facility present.



Transit

Segments of the transit network are considered complete if they carry transit service that meets the City's standards for that corridor. On "high frequency" corridors, that standard is 15-minute headways (the time between vehicles) between 7 a.m. and 6 p.m. On "regular" corridors, that standard is 30-minute headways during the same period.



Truck

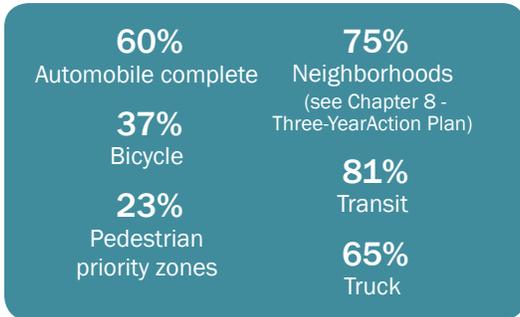
The method for calculating truck network completion is the same as the automobile network.

The network completion measure is produced by the City of Redmond Department of Planning and Community Development. It will be calculated and reported annually.

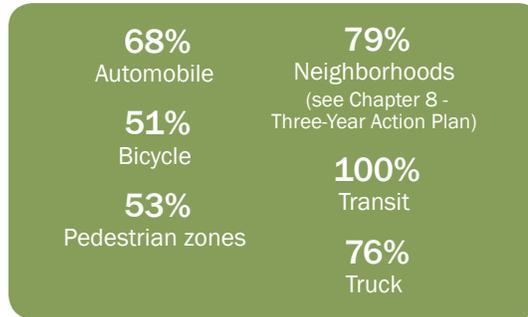
There is no easy fix for congestion, but we can limit its growth and impact.

Targets

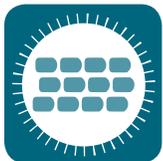
2013 Baseline



2030 Target



Aspirational Target



Vehicular Congestion

Congestion is a familiar frustration for almost everyone who drives or takes transit. Congestion is the result of a mismatch between demand for space on a street and the street’s capacity. Unfortunately there is no easy fix for congestion. Large-scale road widening projects are extremely expensive, only temporarily effective, and out-of-sync with Redmond’s land use vision. An expanded system of variable tolling could result in long-term congestion reductions, but would require coordinated effort at the regional level or beyond and currently is politically unviable. For the foreseeable future, congestion will remain a fact of life in growing communities like Redmond. Nevertheless, the City does track congestion levels. Growth of congestion beyond expected levels suggests additional investments in non-single occupancy vehicle travel choices, expanded efforts to reduce demand, and potentially, projects to increase roadway capacity.

Congestion is a key measure for the Freight Mobility and Strong Support for Urban Centers strategies.

Methodology

Vehicular congestion is expressed as the average delay (in minutes and seconds) incurred during a one-mile trip on principal, minor, and collector arterials in Redmond during the p.m. peak (5 p.m.-6 p.m.). “Delay” is defined as the mid-block travel time for the average trip taken at a typical urban travel speed (see below) minus the mid-block travel time of the average trip as estimated by the City’s travel demand forecast model. This includes trips on uncongested streets and in non-peak directions, so the citywide average is lower than the delays that travelers would experience along the city’s most congested segments of roadway. Because of technical limitations, the model does not include delay from traffic signals or delays related to collisions, construction, weather, and other periodic phenomena.

Also reported for context is the average travel time for peak period, peak-direction travel on principal arterials in Redmond, which reflects the most severe congestion conditions in the city.

The data is generated by the City’s travel demand forecast model, and will be reported once every three years.

Targets

Both the 2030 and long-term aspirational targets acknowledge that delay for roadway users will continue to grow as long as the number of jobs and housing units increases in Redmond. Individually, travelers can avoid peak period congestion-related delay by choosing travel modes that are not subject to congestion like biking, walking, or transit that operates in its own lane; shifting the timing of trips; and by reducing unnecessary trips during peak periods. Data for Bellevue and Kirkland are provided for context.

The 2030 target is the result of travel demand forecast model projections for 2030, which take into account land use changes, the transportation improvements included in the TFP, and changes in mode share and trip length. The aspirational target reflects the City's anticipation that a combination of policies and programs that affect travel demand; a shift in mode share toward biking, walking, and transit; and improvements to vehicle and transportation system technology will combine to help to limit travel delay in the long term. These targets will be reevaluated as needed.

City	2010 Average Delay per MIlle	2030 Average Average Delay per MIlle	Aspirational Goal Average Delay per MIlle
Redmond	0:24	0:46	0:46
Bellevue	0:15	0:34	
Kirkland	0:39	1:18	



Mode Share

Redmond's transportation system is a limited resource, constrained by its physical geometry. Today, the single occupancy vehicle (SOV) is the most common form of travel in Redmond. While drive-alone trips can be convenient, they are an inefficient way to use this limited resource, and they contribute disproportionately to congestion.

The City of Redmond seeks to provide a range of transportation options so that residents, employees, and visitors are able to choose alternatives to the SOV when this makes sense and, in doing so, can prevent congestion, or avoid it when it occurs.

Mode share is a key measure for the TMP strategies Strong Support for Urban Centers and Travel Choices and Mobility. It is an indicator of how well the City and other agencies have provided attractive transportation choices for the public, and whether Redmond's urban centers are successfully accommodating the increase in travel demand that accompanies growth. But, like transit ridership, non-SOV mode share is influenced by external factors, and the City's influence on this measure is limited.

Methodology

Mode share is defined as the percentage of daily trips made by means other than the single occupant vehicle (i.e., walking, bicycling, transit, and carpooling) among Redmond residents within the city, with breakouts for the urban centers provided for context. This is referred to as "non-SOV mode share." The data is generated by the City of Redmond Department of Planning and Community Development using a community travel survey, and is reported once every three to six years.

The capacity of the transportation system increases when more people choose to walk, bicycle, and take transit.

Targets

The baseline data is from the results of a travel survey of Redmond households and employees that the Redmond Public Works Department administered in 2010. The 2030 target is based on computerized travel modeling, which takes into account the projects in the Transportation Facilities Plan and the land use changes the City expects by 2030. The aspirational target is based on a 40-year planning horizon and assumes continued shift toward travel by non-SOV modes, though at a lower rate than the years prior to 2030. This reflects the fact that land use changes in the urban centers and the arrival of light rail will yield large, early shifts in mode share.

2010 Baseline

	Shared Ride (% of trips)	Walk (% of trips)	Bicycle (% of trips)	Transit (% of trips)
	33	8	1	2
Drive Alone	Non-SOV Mode Share (% of trips)			
56	44			

2030 Target

	Shared Ride (% of trips)	Walk (% of trips)	Bicycle (% of trips)	Transit (% of trips)
	33	13	1	6
Drive Alone	Non-SOV Mode Share (% of trips)			
47	53			

Aspirational Target

	Shared Ride (% of trips)	Walk (% of trips)	Bicycle (% of trips)	Transit (% of trips)
	31	15	5	7
Drive Alone	Non-SOV Mode Share (% of trips)			
42	58			



Carpooling is one way to avoid congestion and reduce your impact on the environment.



Transit Ridership

Increasing transit ridership has multiple benefits for the City of Redmond and the region, and is a critical component of the City's growth strategy, which directs most additional housing and employment to the Downtown and Overlake urban centers. With proper design and service standards, transit systems can move large numbers of people quickly and comfortably.

In the context of the TMP, transit ridership is an indicator of how well the City is building the market for light rail, which is currently scheduled to reach the Overlake Transit Center in 2023. A trend of increasing transit ridership can demonstrate the success of transit access improvements, direct service purchases by the City, and education and encouragement efforts by the City and its partners. It also helps the City monitor transit demand in light of changes in service levels and system capacity.

Methodology

Transit ridership is defined as average weekday boardings for all transit stops within the Redmond city limits. Today this includes boardings on Metro and Sound Transit buses. Light rail will be included once service begins. Vanpools, carpools, and other forms of paratransit are not included. Peak period and weekend ridership figures will be provided for context in future performance monitoring reports.

Data is provided by King County Metro transit. The data includes passenger count figures for the spring service period in the given year, which runs from mid-February through early June. It will be reported annually.

Targets

Transit ridership targets are derived from the non-SOV mode share measure above. The target for 2030 is based on the arrival of light rail and expected land use changes; the aspirational target is based on continued, but slowed rates of transit ridership to 2050 (see Figure 19).

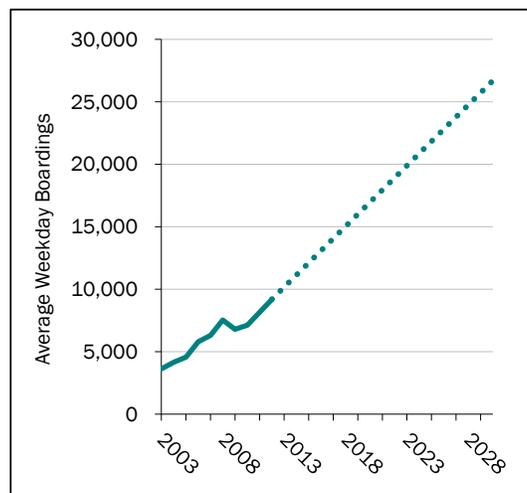


Figure 19. Transit ridership, 2005–2030 (projected)

2012 Baseline

9,200
Boardings per day

2030 Target

26,700

Aspirational Target

31,000



Concurrency

Concurrency is an indicator of whether the City is delivering TFP projects at a pace commensurate with growth, and is a key measure for the Improve Travel Choices and Mobility strategy. It is also a requirement of Washington State law, which mandates that local jurisdictions ensure that the travel demand created by development does not overwhelm transportation systems.

The state gives local jurisdictions considerable leeway in defining level of service standards for their communities. In 2009, after several years of development, the City of Redmond implemented its current “plan-based” concurrency system, which tracks the state of the transportation system using the concept of “mobility units.” Mobility units establish a common unit of comparison between transportation demand (defined as person-miles of travel) and transportation supply (projects and programs that provide transportation capacity). As the City commits to funding projects and programs in the TFP, mobility units of supply are generated. When developers apply for building permits, they create mobility units of demand. Redmond remains “in concurrency” as long as the mobility units of supply equal or exceed the mobility units of demand. If supply falls below demand, then permit applicants must undertake mitigation or delay their projects. For a more detailed explanation of plan-based concurrency and mobility units, see Appendix C: Concurrency Management and LOS or <http://www.redmond.gov/PlansProjects/Transportation/concurrency/>.

In addition to its role as a dashboard measure, concurrency indicates progress toward implementing the City’s Complete Streets policy, since it measures delivery of the TFP projects and programs.

Concurrency is an indicator of whether the City is delivering TFP projects at a pace commensurate with growth, and is a key measure for the Improve Travel Choices and Mobility strategy. It is also a requirement of Washington State law.

Methodology

Concurrency is expressed as the ratio between mobility units of supply and mobility units of demand, with the total number of mobility units of supply that are available for new development supplied for context. A ratio exceeding 1.0 indicates a positive balance of mobility units, and additional development activity is permissible. A ratio of 1.0 or below indicates that no more development is permissible without mitigation by the developer or until further transportation projects are committed. The number of available mobility units of supply was approximately 8,600 at the beginning of 2013 (see Figure 20). This is enough to accommodate significant development. For example, phase one of the Group Health Overlake Master Plan incurred 3,500 mobility units of demand with a 180-room hotel and conference center, two 4- to 10-story office buildings, and 25,000 square feet of retail space.

Concurrency is tracked on an ongoing basis by the City of Redmond Department of Planning and Community Development. It is reported annually.

Targets

Under plan-based concurrency, the programs and projects in the 2030 TFP by definition provide a number of mobility units of supply equal to the mobility units of demand incurred by the development projected to occur by 2030. Therefore, if the projected amount of development occurs and the City delivers the TFP in its entirety, supply and demand will be balanced and the concurrency ratio will be 1.0 in 2030 (see Figure 21). This is the basis of the 2030 target. However, the City has an ongoing goal of maintaining a concurrency ratio above 1.05, which limits the risk that the City will need to delay or condition development projects. This is practical, assuming periodic updates of the TMP and continuous delivery of TFP projects.

2013 Baseline

1.2

Ratio of mobility units of supply to mobility units of demand

2030 Target

1.0

Aspirational Target

**1.05
or higher**



Safety

Ensuring the safety of travel in Redmond is a fundamental goal for the City as it builds and maintains the transportation system. Traffic-related injuries and deaths have a variety of causes, not all of which can be addressed

by local government. The City can help create a transportation environment where the safest choices are the easiest choices, such as providing sidewalks and crossing facilities where they are needed, installing traffic calming treatments on streets with speeding problems, and reconfiguring streets and intersections with known safety issues. Safety trend data from this measure will be used to determine whether the City of Redmond is maintaining its strong safety record.

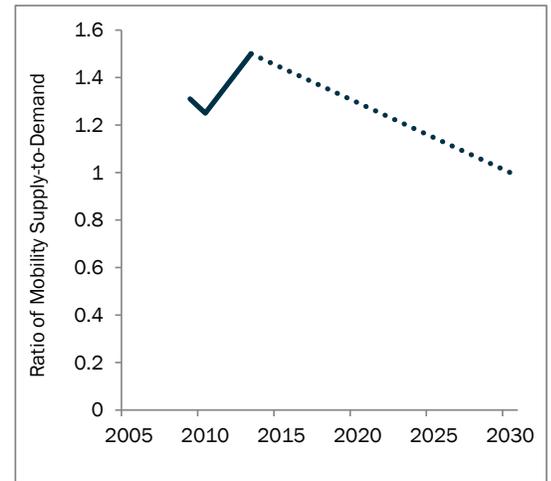


Figure 20. Ratio of mobility units of supply to mobility units of demand, 2009-2030

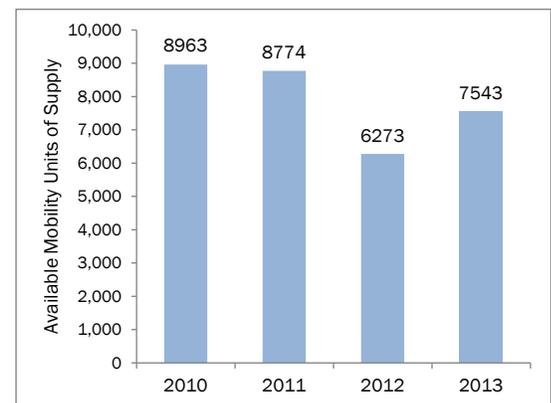


Figure 21. Available mobility units of supply as of January 1, 2013

Methodology

Safety is expressed as the per capita traffic-related injury and fatality rate for Redmond. Redmond's daytime population – rather than residential population – is used to calculate the per capita rates, which controls for the influence of commuting. The injury rate is calculated by the City of Redmond Department of Planning and Community Development using collision data from WSDOT and the U.S. Census, and is reported annually.

Targets

The City of Redmond's goal is to continue its trend of decreasing per capita injury rates and reaching 1.3 injuries per 1,000 daytime population by 2030. The aspirational goal is to maintain that low level while eliminating fatalities by 2030 (see Figure 22) and serious injuries, a goal which corresponds to the Washington State Department of Transportation's "Target Zero" campaign. This is an aggressive goal. To succeed will require action by several actors, including the City of Redmond, state and regional transportation agencies, auto manufacturers, enforcement agencies, and all transportation system users. Its success will also depend on the impact of increasing numbers of jobs and residents in Redmond.

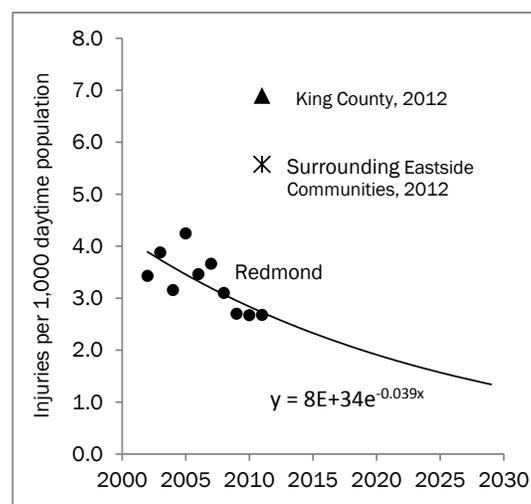


Figure 22. Traffic-related injuries per 1,000 daytime population

2010 Baseline

3.2

Injuries per 1,000 persons

2030 Target

1.3

Max per 1,000 persons

Aspirational Target

1.3

Max per 1,000 persons, eliminate fatalities and serious injuries



Environment

Redmond residents have repeatedly emphasized the importance of maintaining Redmond's clean, green character. The City has responded by recognizing the environment as a community priority and including it as a criterion in budgeting decisions. The TMP responds to this value by improving access to environmentally friendly travel choices, and through individual project design. The following measures, which focus on air quality and water quality, provide insight into whether the transportation system in and around Redmond is doing its part for the environment.

Methodology

Air quality is expressed as the number of incidents in which the annual average concentration of particulate matter with a diameter smaller than 2.5 microns (PM 2.5) exceeds the primary federal standard for PM (currently 12 µg/m³) as measured by the closest public air quality monitoring station (currently the Puget Sound Clean Air Agency station at NE 4th Street in Bellevue). Results are reported annually.

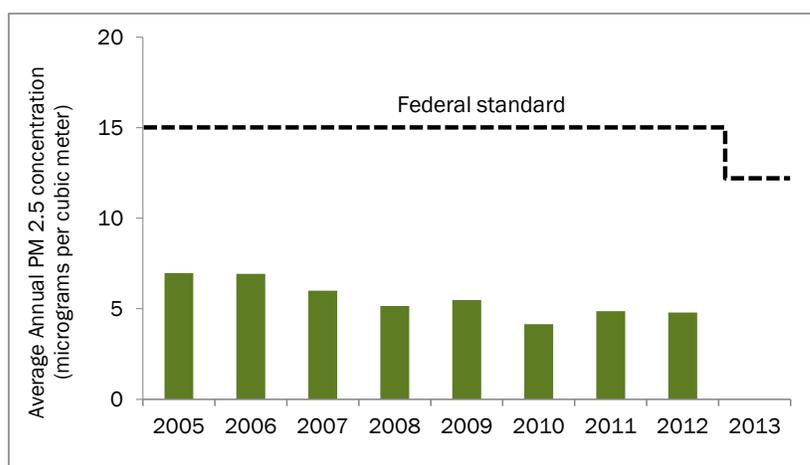


Figure 23. PM 2.5 concentrations, 2005-2012

Water quality is expressed as the percentage of right-of-way within Redmond city limits, by area, that is subject to basic water quality treatment. Basic water quality treatment includes facilities such as bioswales and other natural drainage features that slow the delivery of runoff to local waterways and reduce its pollutant load. Currently not all of Redmond's right-of-way has basic water quality treatment; the long-term goal is to reach 100 percent coverage. Data is provided by the City of Redmond Department of Public Works. Results are reported annually.

Targets

Air quality: Redmond and the region are in "attainment" for PM 2.5 under the federal Clean Air Act as long as average annual concentrations remain below the federal standard, which is currently 12 µg/m³ (see Figure 24). PM 2.5 concentrations are influenced by several factors including vehicle miles traveled (VMT), vehicle emissions technology, and fuel mix, so decisions made at the local level have limited impact. Nevertheless, PM 2.5 is an important measure to follow since it is one of the most harmful pollutants to human health. Exceeding EPA's standard would result in increased risks to human health and would trigger a federal regulatory response. Redmond's goal for 2030 and beyond is to achieve 100 percent attainment.

Water quality: The City of Redmond Department of Public Works has established a goal to provide basic water quality treatment to 100 percent of City right-of-way that does not yet have it by 2112. The 2030 and aspirational targets here are derived from that goal, with the assumption that Redmond's rights-of-way will receive basic treatment at a rate proportional to the rest of the city.

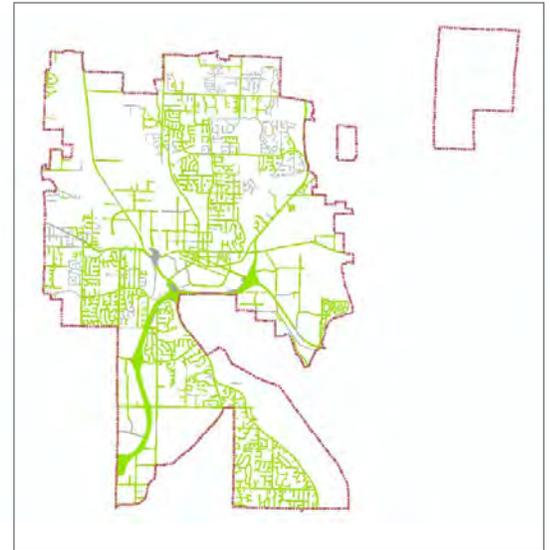


Figure 24. Road area without runoff treatment facilities, 2013

	2013 Baseline	2030 Target	Aspirational Target
Air Quality	Attainment	Attainment	Attainment
Water Quality	22% of right-of-way subject to basic treatment	36%	100%



Street Preservation

The transportation system requires constant maintenance to function effectively. The City conducts a wide range of activities to preserve the physical and information technology components of this system, the most costly of which is the preservation of roadway pavement. As noted in Chapter 2 – Trends and Conditions, deferred pavement maintenance can lead to far more costly repairs once road surfaces become degraded.

Adequate pavement condition is essential to the proper functioning of the roadway network for private travel and for freight operations, which is why it is a key measure for the Improve Travel Choices and Mobility and Enhance Freight Mobility strategies.

Methodology

Street preservation is expressed as the average Pavement Condition Index (PCI) for arterial lane mileage within the Redmond city limits. PCI is a standardized 0 – 100 scale that indicates the overall condition of a given section of pavement. Pavements scoring a PCI value of 70 or above are considered to be in adequate condition. PCI can be applied to sidewalks as well, but the City does not yet have that data collected. The measure may be adjusted in the future as the City begins to collect sidewalk condition data.

Targets

The long-term goal of the City of Redmond is to maintain a citywide average pavement rating of PCI of 70 or higher (see Figure 25). At an average PCI of 70, roadways can be maintained at minimal lifetime cost while ensuring an adequately smooth surface.

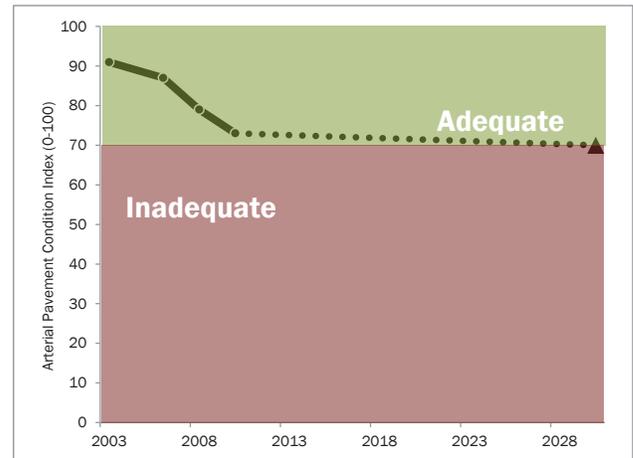


Figure 25. Average arterial pavement condition, 2003-2030 under current TFP funding proposal

2010 Baseline

73

Average arterial PCI of 73

2030 Target

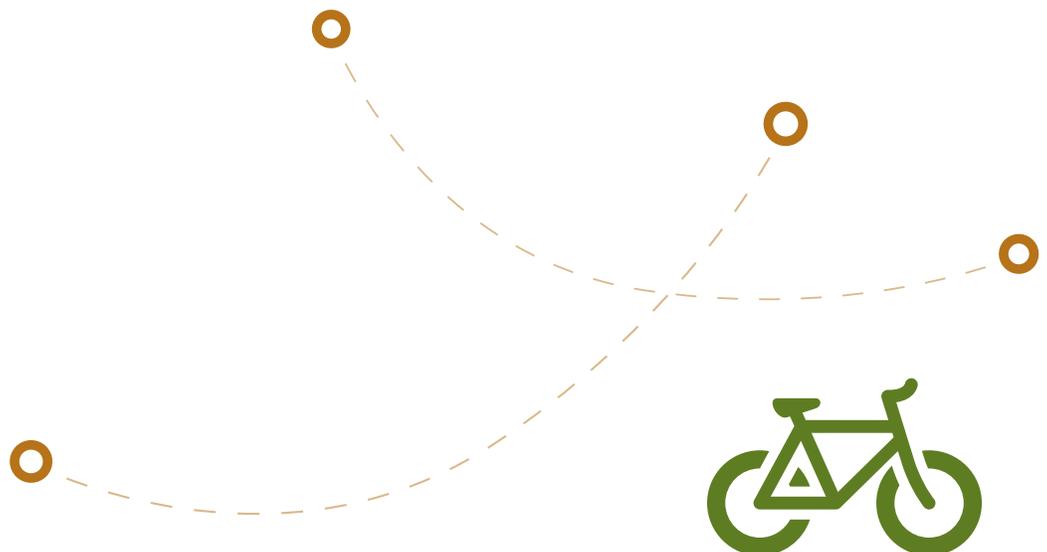
70

Aspirational Target

70

Conclusion

The performance measures listed in this chapter are a key component of the City of Redmond’s delivery of the projects in the TFP and of the policies contained in the TMP document. They will give staff, elected officials, and the public insight into how well the City is achieving the TMP strategies, and will serve as an early warning system if part of the TMP implementation is not occurring at the needed pace or in the intended manner. Positive results can provide motivation to those who are involved in delivering the TMP and can help identify notable successes.



Chapter 4:

The Multimodal Transportation System Plans

Introduction

The multimodal transportation system plans in this chapter describe the aspirational transportation network that Redmond will need to support the City's vision. This chapter contains modal system plans for streets, transit, pedestrians, and bikes along with plans for freight mobility, parking, and transportation demand management. Together these elements complete the Multimodal Transportation System Plan. Each of the system plans has a specific vision, a strategic approach for delivering the needs specific to that system plan, and implementation guidelines that provide direction and intent for system development, facilities design, and integration within the overall transportation network. The multimodal plans are also intended to implement the overarching transportation strategies described below:

Prepare for Light Rail – The system plan articulates that an extension of the regional light rail network will include two stations in Overlake, a station in Downtown Redmond, and a station and large park and ride facility in Southeast Redmond. Street grid networks around light rail stations have been planned to provide multimodal access to stations as well as to encourage transit oriented development (TOD) land use patterns. Light rail will significantly increase mobility between Redmond's urban centers and the region.



East Link light rail is scheduled to arrive in Overlake in 2030.

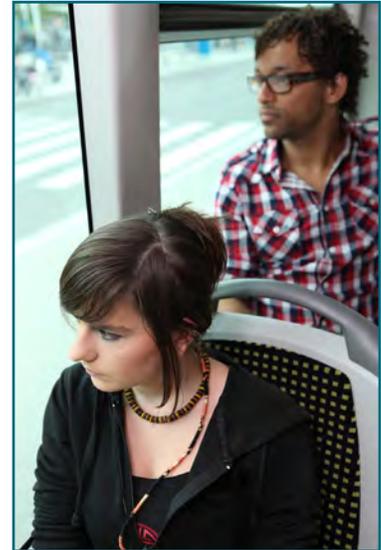
Support for Urban Centers – New street connections are planned for Downtown and Overlake to improve the “grid” and connectivity within the two urban centers. In addition, Downtown and Overlake will each have a “Main Street” (Cleveland Street and 152nd Avenue NE, respectively). The intention is to elevate both of these main street corridors to “great streets,” distinguish them from other streets, and use them as catalysts for building a stronger sense of community within each center. This is partly accomplished through the incorporation of a full range of both temporary and permanent cultural arts within the streetscape. Regular event programming for the two “Main Streets” will help them become activated people places. Finally, the plans include implementation of effective parking management so that parking supply will be reasonable in meeting demand, but limited in order to reduce automobile trips.

Travel Choices/Mobility – Every street in Redmond’s transportation system will be a complete street for all travel modes. Key bottlenecks will be improved to support mobility for all traveling modes. In addition, transportation demand management (TDM) techniques and advanced traffic operations technology will ensure that the available infrastructure and services are used effectively.

Neighborhood Connections – A connected network of transportation facilities and services for each travel mode has been mapped throughout the city. Streets and trails are designated as modal corridors to ensure improved connections between major destinations, including Redmond’s neighborhoods and regional centers.

Freight Mobility – A network of freight routes is planned for moving goods and freight. In addition, guidelines are provided for loading and unloading zones in urban centers to support business activities.

The multimodal plans will also meet community priorities that include safety, maintenance, economic vitality, and environmental stewardship. A particular aspect of the environmental stewardship principle, air quality, deserves a special emphasis here because of how it is improved through a multimodal approach to transportation.



Meet the Broad Range of Travel Needs of Redmond Community

One fundamental objective in creating system plans is that the aspirational transportation network meets the broad range of travel needs of the entire Redmond community. Throughout this chapter, this objective is primarily reflected through the following:

- Providing “complete streets” to meet the needs of a broad range of users for a variety of travel choices.
- Incorporating Americans with Disabilities Act requirements as part of standard street design and maintenance.
- Improving the pedestrian environment on the Safe Routes to School networks.
- Developing bicycling facilities that are safe, accessible, and comfortable for a wider segment of the community.
- Supporting an interconnected network of transit services that are able to provide for more types of trips throughout the entire day.

Developing facilities and services that provide broad mobility for everyone helps support access and mobility for the community as a whole, and maximizes the value of limited resources.

Air Quality Benefits from a Multimodal Approach to Transportation

Clean air is a basic need that keeps Redmond residents and employees healthy, supports economic development by meeting EPA air quality standards, and allows us to see and enjoy the fantastic views of the Pacific Northwest.

The 2007 Redmond Complete Streets ordinance (RMC 12.06.10) commits the City to designing its streets to accommodate all users.

Key Connections

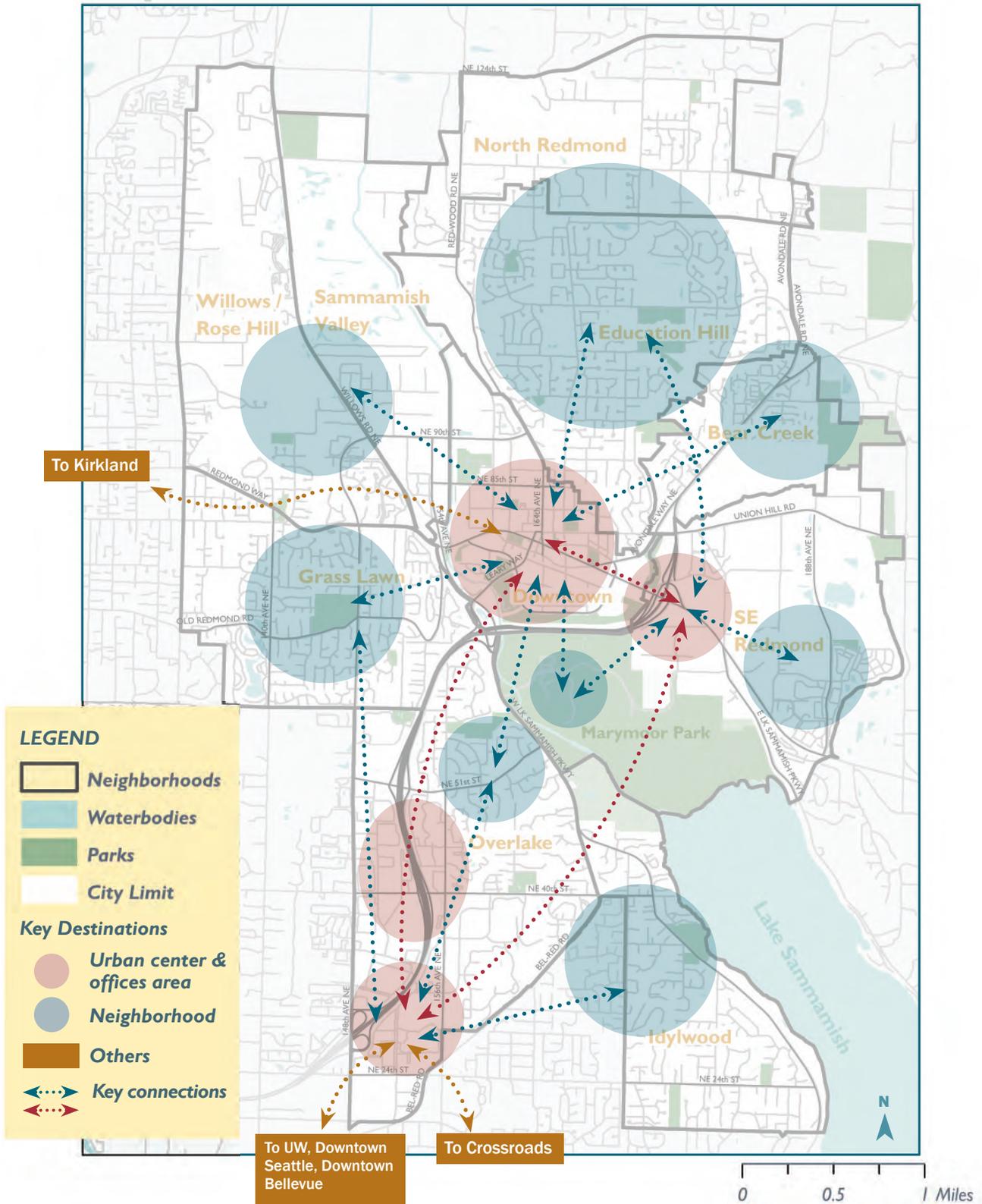


Figure 26. Key connections between major destinations

Transportation is by far the greatest source of air pollution in the central Puget Sound region (50 percent of Greenhouse Gas emissions [PSRC VISION 2040, page 40]), essentially controlling whether our air is clean.

Air quality in Redmond will improve through increases in the use of cleaner and more efficient travel, and as vehicle technology improves. These improvements will include:

- Increases in transit use and carpooling for more efficient trips.
- Increases in trips on electric light rail vehicles.
- Increases in the number of walking and biking trips.
- Fuel-efficient vehicles.
- Electric vehicles which have essentially no air emissions in Redmond because most electrical generation is hydro power. Even when plugging into an electrical grid powered by a traditional power plan, electric cars are 250 percent more carbon efficient than gasoline-powered automobiles.



Modal Corridor System

A fundamental function of the transportation system is connecting destinations, i.e., serving planned land uses. Critical corridors including streets and trails are identified that can best serve as the connections among destinations. These corridors are referred to as Modal Corridors and are a subset of the facilities in the city's transportation network. Though a subset of the transportation network, future completion and improvements of Modal Corridors are critical to ensuring high-quality connections among major destinations (Figure 1). Each Modal Corridor emphasizes one or more modes of travel. This is accomplished through specific design treatments, while also accommodating safe and efficient travel for the other modes consistent with the policy for "complete streets." Modal Corridors with multiple modes require careful balancing of space allocation along with an integrated design that allows the needs for each mode to be fully satisfied.

Modal Corridor Identification

Though only a small portion of the transportation system, Modal Corridors form the foundation for strategically providing complete mobility and travel choices between key destinations for Redmond residents, employees, visitors, and shippers. The Modal Corridor designation is important in prioritizing future improvements and guiding street design.

Modal Corridors have been identified based on the specific requirements of each mode, the need for route continuity and directness of travel, historical travel patterns, the presence of existing facilities in the corridor, and future growth plans and opportunities.

Additional considerations affecting the identification of Modal Corridors include:

- The assumption that SR 520 will continue to be Redmond's primary regional connection.
- Vehicular modal corridors include principal arterials and other streets with high current and expected vehicular or truck travel demand.
- The recognition that pedestrians generally travel over short distances. Therefore, for pedestrians, priority zones instead of Modal Corridors are designated as a means to recognize areas where high pedestrian demand occurs today or will occur in the future. For example, both the Downtown and Overlake Urban Centers are designated as pedestrian priority zones.

Modal Corridors help City planners and engineers weigh priorities during street design efforts.

Modal Corridors

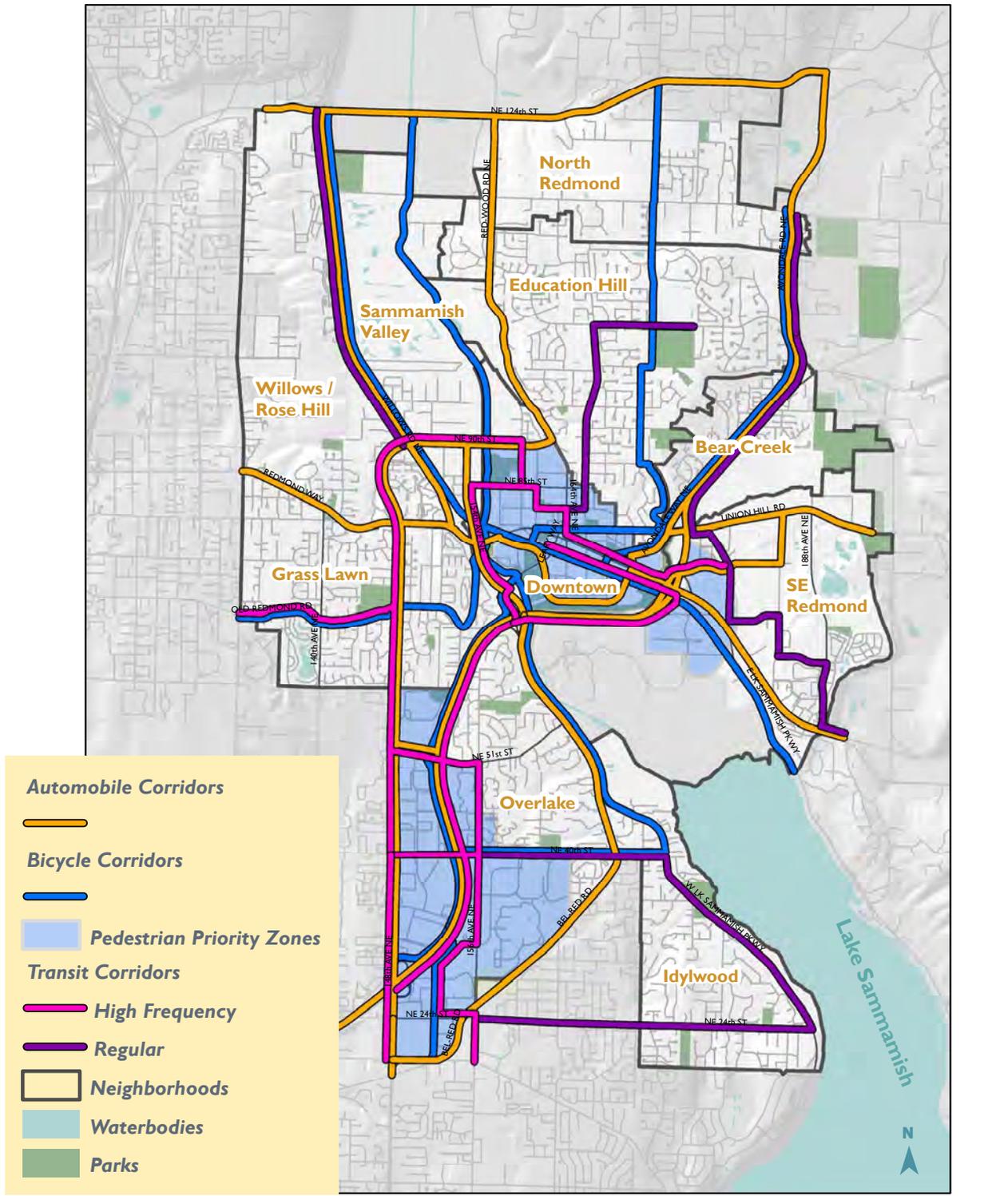


Figure 27. Modal corridors

0 0.5 1 Miles

Multimodal Corridors

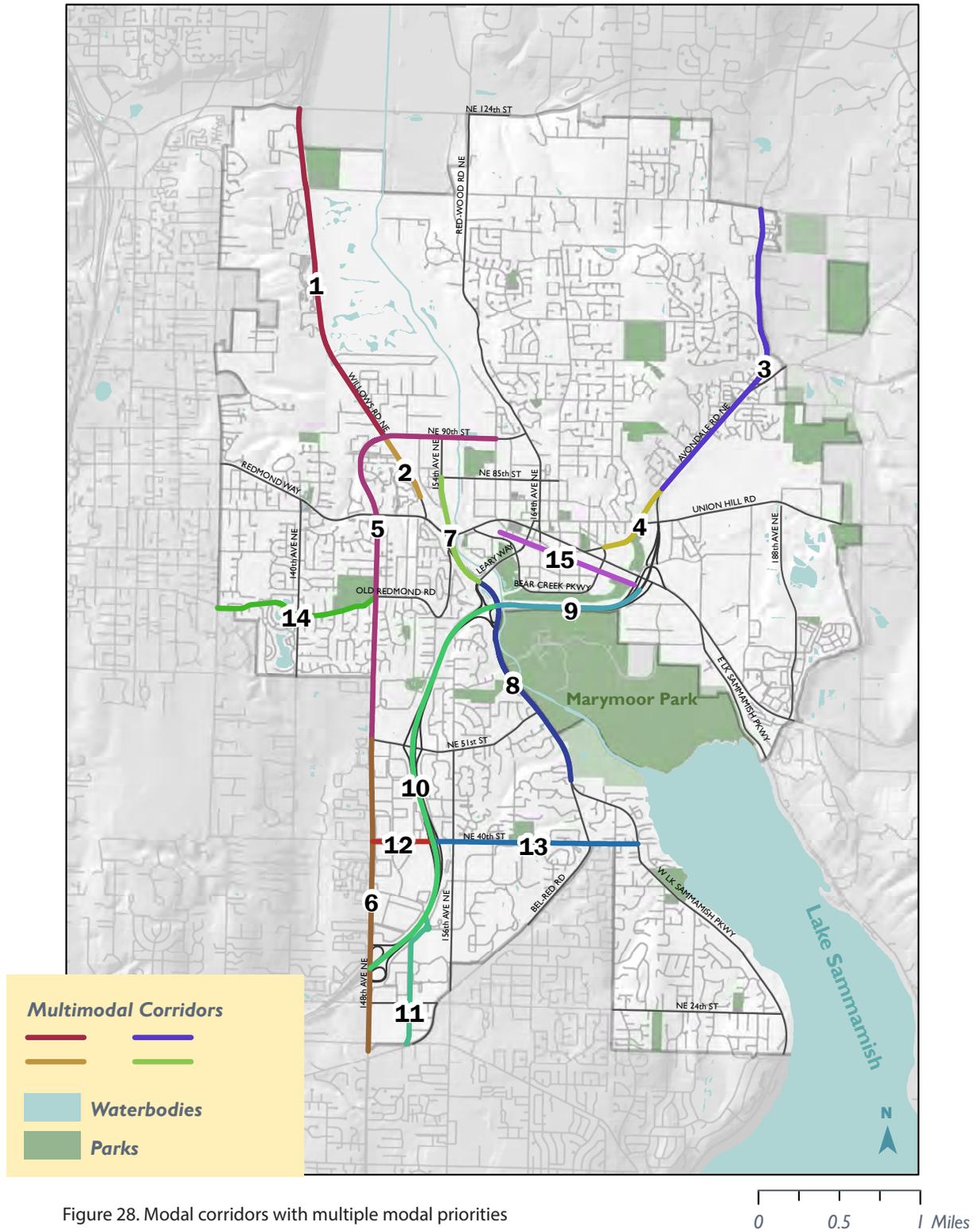


Figure 28. Modal corridors with multiple modal priorities

- Bicyclists need route directness and a reasonable level of safety and comfortable riding experience. Therefore, separation from high-speed traffic and high volumes of traffic are key factors in identifying priority Bicycle Modal Corridors.
- Transit Modal Corridors include streets that are ideally suited to serve as the primary connections between major destinations, as well as those streets that already have high-frequency transit service (every 15 minutes or better). Other key factors in identifying transit Modal Corridors are pedestrian access, land use density, the need for efficient travel time, and the ability to serve multiple markets and needs.

Designated Modal Corridors are shown in Figure 28. These corridors are also shown separately for automobiles in the Street System Plan and for transit and bicyclists in their respective system plans. The Pedestrian System Plan shows the specific pedestrian priority zones. The performance objectives for each type of the modal corridors/zones are:

- Automobile – Provide for reliable progression of vehicular travel.
- Transit – Provide high-quality pedestrian access to and from transit stops, and support transit operating speed and on-time reliability.
- Bicycle – Provide high comfort bicycle facilities where deemed feasible and cost-effective
- Pedestrian – Locate pedestrian zones in the urban centers and near light rail stations. Provide high-quality sidewalks and frequent crosswalks, including mid-block crossings or pathways where higher pedestrian volumes are anticipated, such as connecting the interior pathway system in Downtown across arterial streets like NE 85th Street.

Each of the system plans refers to the special needs of these corridors relative to that particular mode (see Table 4).

Table 4. Guidance for developing modal corridors with multiple modal priorities

ID	Combined Modal Description
1	Street – Minor arterial. Provide for freight movements and general vehicular travel. Ultimate cross-section includes two general purpose lanes in each direction and turn lanes where warranted.
	Transit – Medium demand corridor. Improve transit stop facilities and access by installing additional crossings and sidewalks. Support transit speed and reliability through signal priority and measures that assist transit vehicles to merge back into traffic.
	Bicycle – Paved, Shared-Use Path (Redmond Central Connector). Complete the Redmond Central Connector as a separate but adjacent bicycle and pedestrian corridor. Provide access to and from the Central Connector to land uses across Willows Road by installing additional crossings with appropriate safety devices.
2	Street – Minor arterial. Provide for freight movements and vehicle travel.
	Bicycle – Paved, Shared-Use Path (Redmond Central Connector). Complete the Redmond Central Connector as a separate but adjacent bicycle and pedestrian corridor. Provide access to and from the Central Connector to land uses across Willows Road by installing additional crossings with appropriate safety devices.

Table 4. Guidance for developing modal corridors with multiple modal priorities (continued)

ID	Combined Modal Description (continued)
3	Street – Principal arterial. Provide for freight movements and vehicle travel. Provide safe and convenient bidirectional access for residents. Improve access management and discourage speeding.
	Transit – Medium demand corridor. Improve transit access through additional or better aligned crossings. Improve transit speed and reliability through signal priority and measures that decrease delay for transit vehicles. Stop treatments and location should avoid conflicts with cyclists.
	Bicycle – Provide one-way raised cycle track where existing bicycle lanes are located. Provide high-quality access across corridor to encourage use and discourage wrong-way riding.
4	Street – Minor arterial. Provide for vehicle travel.
	Bicycle – Bicycle Lane. As a modal corridor bicycle lane, provide bicycle lanes up to stop bar at intersections and provide bicycle positioning markings through intersections. Support high-quality transition to Bear Creek Trail.
5	Street – Principal arterial. Provide for freight movements and vehicle travel.
	Transit – High Demand Corridor with Bus Rapid Transit service. Improve transit speed and reliability through signal priority and measures that decrease delay for transit vehicles, in particular at BRT stops and for turns from NE 51st Street to 148th Avenue NE.
6	Street – Principal arterial. Provide for freight movements and vehicle travel. Add northbound lane from south city limit with Bellevue to the eastbound SR 520 on-ramp.
	Transit – High Demand Corridor with Bus Rapid Transit service. Improve transit speed and reliability through signal priority and measures that decrease delay for transit vehicles, in particular at BRT stops and for turns from NE 40th Street to 148th Avenue NE. Transit stops locations should be coordinated with existing and new signalized crossings.
	Pedestrian – Provide signalized crossings to support significant pedestrian volumes. Provide trail to support bicycle and pedestrian travel on east side of roadway.
7	Street – Principal arterial. Provide for freight movements and vehicle travel.
	Transit – High Demand Corridor, critical to regional routes on SR 520. Support access through improved crossings, improved sidewalks (none exist along most of the corridor), and connections to the new Redmond Central Connector. Evaluate potential for relocating stops closer to Leary Way intersection.
8	Street – Principal arterial. Provide for freight movements and vehicle travel.
	Bicycle – Paved, Shared-Use Path. Complete the Sammamish River Trail along the east side of West Lake Sammamish Parkway as a separate but adjacent bicycle and pedestrian corridor. Provide access to and from the land uses across West Lake Sammamish Parkway.

Table 4. Guidance for developing modal corridors with multiple modal priorities (continued)

ID	Combined Modal Description (continued)
9	Street – Limited Access Freeway. Provide for high vehicle and freight speeds and volumes.
	Transit – East Link Light Rail. Support extension of rail alignment adjacent to Marymoor Park and into Downtown, crossing under SR 520. In addition, the light rail extension needs to accommodate a SR 520 grade separation for the East Lake Sammamish Trail.
10	Street – Limited Access Freeway. Provide for high vehicle and freight speeds and volumes.
	Transit – East Link Light Rail. Support rail alignment along SR 520. Support station access and provide for very high volumes of pedestrians, including new bridges over SR 520 for bicycles and pedestrians.
	Bicycle – Paved, Shared-Use Path (520 Trail). Complete the 520 Trail projects identified in the 520 Corridor Planning Study, including undercrossings at NE 51st Street, NE 40th Street, and 148th Avenue NE, as well as bicycle/pedestrian bridges over SR 520.
11	Transit – High Demand Corridor with Bus Rapid Transit service. Improve transit speed and reliability through signal priority and measures that decrease delay for transit vehicles, in particular turns to and from NE 24th Street. Support fast, convenient transfers to light rail station.
	Pedestrian – Main Street. Provide an experience that draws regional and national visitors to stroll along the 152nd Avenue NE main street. High-quality furnishings, pedestrian crossings, programmed and unprogrammed spaces, sidewalk cafes.
	Bicycle – Cycle Track. Provide one-way raised cycle track at road grade buffered from on-street parking by raised planter strip. Provide Bike Boxes at intersections.
12	Street – Minor arterial. Provide for high vehicle volumes.
	Transit – High Demand Corridor with Bus Rapid Transit service. Improve transit speed and reliability through signal priority and measures that avoid delay for transit vehicles, in particular turns to and from 156th Avenue NE and 148th Avenue NE. Support fast, convenient transfers to light rail station.
	Pedestrian – Provide for comfortable walking space for high pedestrian volumes.
13	Street – Minor arterial. Provide for vehicle travel.
	Pedestrian – Provide for comfortable walking space for high pedestrian volumes.
	Bicycle – Bicycle Lane. As a modal corridor bicycle lane, provide bicycle lanes up to stop bar at intersections and provide bicycle positioning markings through intersections.
14	Transit – High Demand Corridor. Support and maintain speed and reliability through signal priority and measures that avoid delay for transit vehicles and avoid conflicts with cyclists.
	Bicycle – Bicycle Lane. As a modal corridor bicycle lane, provide bicycle lanes up to stop bar at intersections and provide bicycle positioning markings through intersections.

Table 4. Guidance for developing modal corridors with multiple modal priorities (continued)

ID	Combined Modal Description (continued)
15	Transit – East Link Light Rail. Complete light rail into Downtown consistent with the Infrastructure Alignment Plan. Ensure high-quality light rail travel time reliability and moderate speed. Support transfers to and from arterial bus service.
	Bicycle – Complete Redmond Central Connector Master Plan quality of materials, spaces, and connections, consistent with the Infrastructure Alignment Plan.



Chapter 4.1: Street System Plan

Introduction

Streets are the backbone of the transportation system in Redmond, serving all modes of travel including automobiles, trucks, transit, bicycles, and pedestrians. The Street System Plan is an interconnected network of “complete streets” that accommodates all modes of travel for users of all ages and abilities and safely connects people to where they need to go. Since streets are more than just places for automobile travel, the design needs to start with the safety requirements along the outer edges where people gather, pedestrians walk, bicyclists ride, transit provides access, and people park their vehicles.

In addition to their multimodal mobility function, well-designed streets shape the urban character and vitality of places. The “grid” of streets in the two urban centers also means that fewer lanes are needed on each street because there are more choices for access and turns. Finally, efficiently designed streets minimize and better manage the amount of stormwater runoff that directly impacts the natural environment by affecting water quality in surface streams and lakes.

Strategic Approach for Streets

The strategic approach for streets establishes the direction for developing the street system in Redmond that is consistent with the TMP strategies. The strategic approach includes:

- All Redmond streets are part an integrated street system.
- All Redmond streets are “Complete Streets.”
- All streets are walkable.
- Automobile modal corridors ensure good connections for vehicles.



An example of a complete street.

All Redmond Streets Are Part of an Integrated Street System

Individual streets do not serve travel needs independent of each other. Rather, they function (or not) as part of a network. In order for the street network to operate in a logical and efficient manner, Redmond considers each street and its role or function within the context of the overall street network using a functional classification system. This system identifies the role of each street along with its planned future size and profile. In addition to their specific functional classification, selected streets are designated as modal corridors, freight routes, or main streets to indicate their special roles in the street system.

New Street Connections

Providing new street connections has been an emphasis for Redmond to complete the grid street network, both in the two urban centers and neighborhoods. New street connections have been planned for areas where the City expects significant growth. For example, the City is planning for new connections in Southeast Redmond to support existing and planned land uses (Figure 29). The TMP recognizes the need for having a connected street grid and includes a three-year action plan item for developing these plans in more detail. In Downtown and Overlake, examples of new street connections include:

- Improvements to currently confusing street patterns; i.e., the one-way couplet in Downtown and new north-south street connections as part of the efforts to form the ultimate street grid network.
- The Overlake Access Ramp that helps eliminate “bottlenecks” that contribute to congestion.

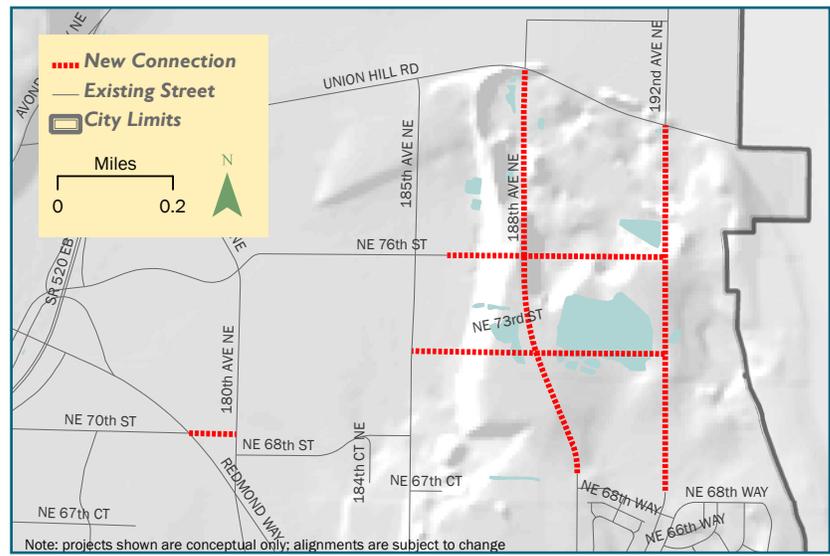


Figure 29. Southeast Redmond new street and trail connections

All Redmond Streets Are “Complete Streets”

It is the City’s policy that all streets in Redmond eventually become “Complete Streets.” The Complete Streets approach is about building an integrated driving, walking, cycling, and transit network, giving residents, commuters, visitors, and shippers more travel choices. Complete Streets can also include treatments such as natural vegetation and pervious sidewalks that reduce water flow and polluted runoff into streams and lakes.

Streets Are Walkable

Streets can be great places for people to socialize and connect when they are interesting, attractive, safe, and walkable. Cleveland Street in Downtown and 152nd Avenue NE in Overlake Village will be exceptionally walkable “Main Streets” intended to become important public places and activity corridors within Redmond’s two urban centers.

Automobile Modal Corridors Ensure Good Connections for Vehicles

Vehicular traffic will remain a significant part of daily travel in the future. While this plan emphasizes travel choices for all modes of travel, it recognizes the importance of ensuring good connections for vehicles. This plan designates automobile modal corridors (Figure 30) to provide a high standard of functionality and priority for travel by cars and trucks. Automobile modal corridors connect major local and regional destinations for trucks and cars while accommodating all modes of travel. A critical part of ensuring good function of automobile modal corridors is managing congestion, which keeps congestion at a reasonable level (see Chapter 3 for congestion targets). However, it is not Redmond’s goal to eliminate congestion or provide free-flow travel conditions.

Automobile Modal Corridors

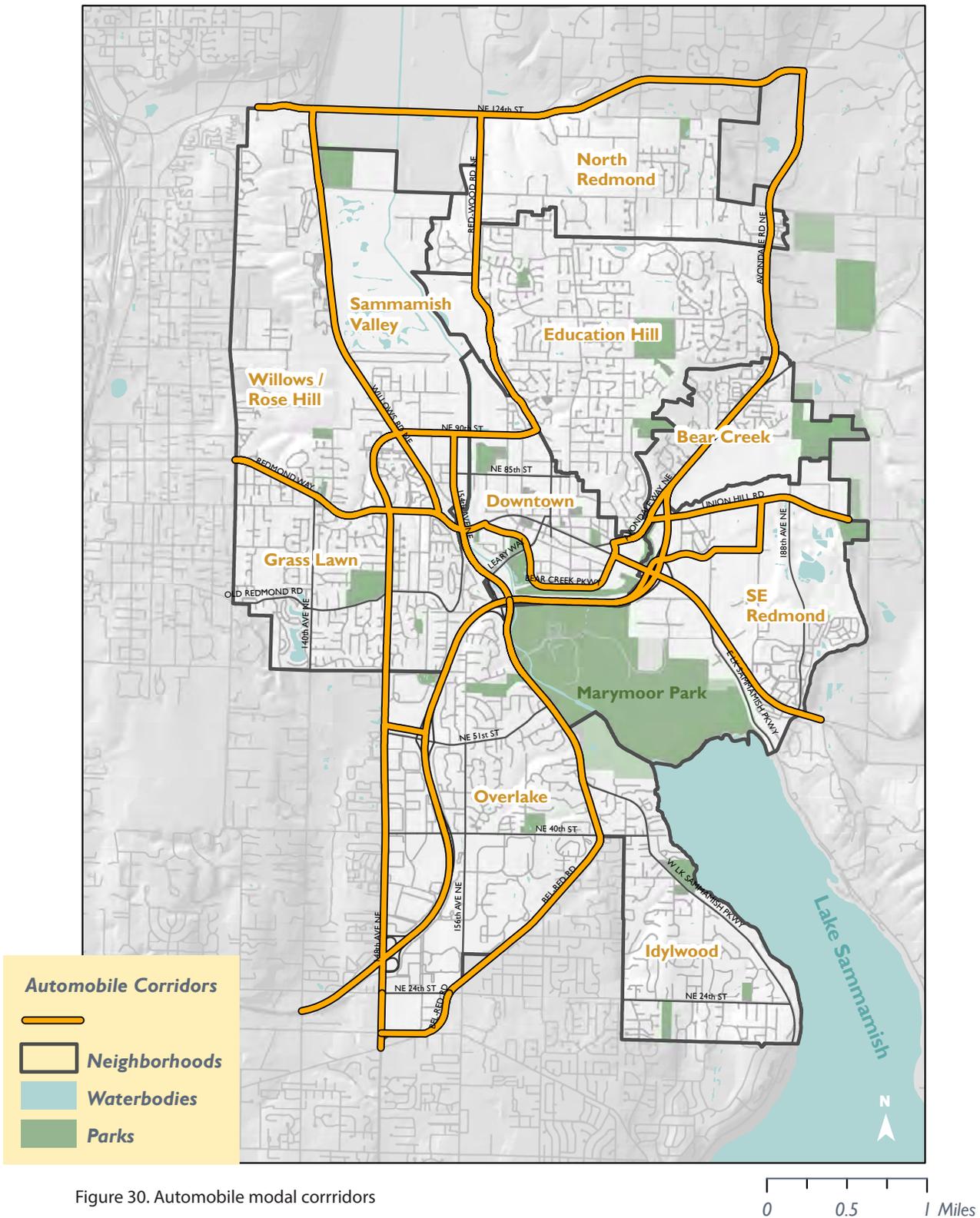


Figure 30. Automobile modal corridors

Street System Development

To guide the development of the street system consistent with the strategic approach described in this chapter, the City employs tools as follows to guide planning and design of its street system:

- Functional classification system
- Street design framework
- Main street characteristics

The Street Functional Classification System

These functional classes establish a common understanding of the intended use and desired character of each street. The system will guide decisions about access to abutting land parcels, and will be used to determine how the costs of street construction shall be shared between the City and affected properties. Each street in the city's network is classified and the ultimate right-of-way width is set.

Redmond's roadway functional classifications include:

- SR 520
- Principal arterial
- Minor arterial
- Collector arterial
- Local streets
 - Connectors
 - Local access
 - Shared streets.

Redmond streets will not be wider or faster than necessary.

See Appendix D for a complete description of the functional classification system. For more information about SR 520, refer to Chapter 5 - Regional Transportation.

Street Design Framework

The street design framework guides the design, construction, and maintenance of streets in a manner that aligns with the direction established in this chapter. The framework clarifies the underlying intent of design standards, guidance, and regulations contained in the Redmond Zoning Code, Appendix F, and other relevant City documents. In applying design standards, guidance, and relevant regulations, decision making must achieve the intent described in the street design framework. For example, the establishment or update of design standards and guidance is consistent with the intent of the street design framework. Similarly, when deviations from design standards and guidance are sought for either capital improvements or private developments, decision making achieves the intent of the street design framework.

Streets are designed from the outside toward the center

Redmond streets will not be wider or faster than necessary. Greatest attention needs to be given to the design and separation of sidewalks and bike facilities from vehicular traffic. All appurtenances to the street, such as signs, fire hydrants, street lighting, and utility boxes, shall be designed so they do not interfere with, or present barriers to, walking and bicycling. Designs for landscaping, lighting, treatment of stormwater runoff, artwork, places for events, and other unique design features all begin outside of the traveled way or behind the curbs. Design elements and treatments then extend into the traveled way (vehicular portion of the street) as needed. Traffic control devices (signs, markings, and traffic signals) regulating or informing all users must be highly visible and easy to distinguish. They need to be designed to integrate aesthetically with the street and the character of both the surrounding natural and built environments.

Roadway Functional Classification

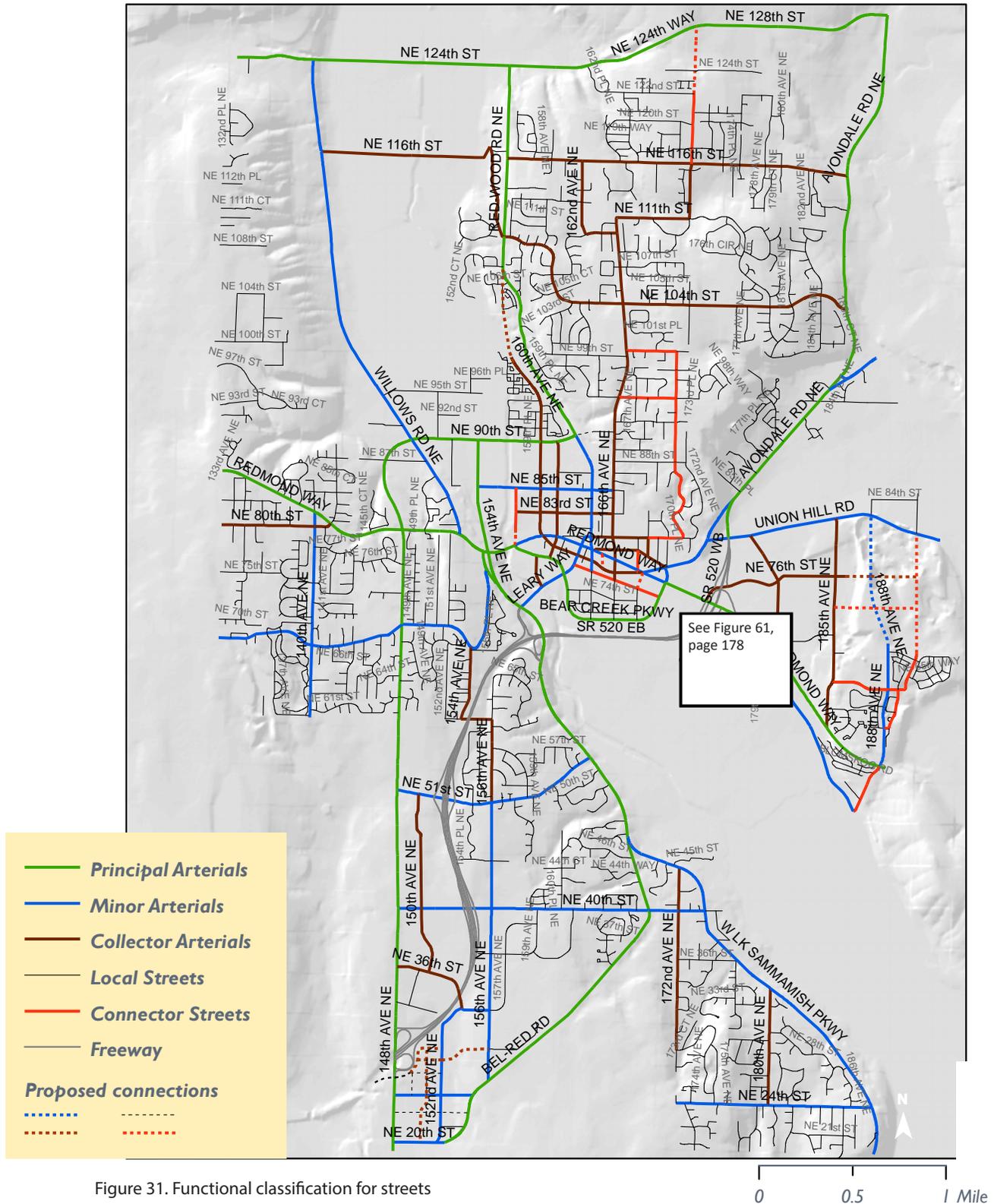


Figure 31. Functional classification for streets

0 0.5 1 Mile

With particular emphasis on the two urban centers, improvements to streets and bridges will include integrated public art and interesting design treatments to enhance street aesthetics and create lively streetscapes that contribute to a greater sense of community and enjoyment. Design and public art installations will reflect the unique identity and character of Redmond's urban centers and neighborhoods.

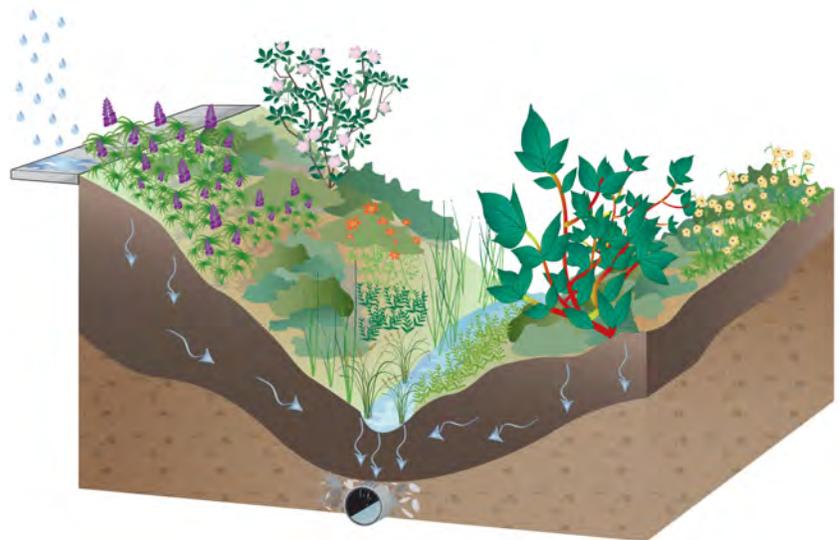
Narrow streets encourage lower travel speeds, reclaiming the street and right-of-way for all users. Redmond will ensure that all modes are adequately accommodated within city street corridors consistent with the City's "Complete Streets" policy. This includes appropriate accommodations for trucks, transit, and emergency vehicles. Because of right-of-way limitations, the City will have to weigh tradeoffs in trying to meet the needs of all users. For example, a street may not be able to accommodate bicycle lanes and parking lanes in both directions.

The posted speed limit on each street (target speed) shall strike a balance between accommodating traffic movement and providing a safe environment for pedestrians and bicyclists. At places where high concentrations of pedestrians and bicyclists are expected, providing a safe environment for pedestrians and bicyclists will be a priority consideration for setting the target speed. A lower speed is a key characteristic of walkable streets in urban areas. For a balanced approach to set the speed limit for individual streets, refer to *Designing Walkable Urban Thoroughfares: A Context Sensitive Approach* (Institute of Transportation Engineers, 2010). Also, the Three-Year Action Plan calls for a near-term action to assess speed limits on select streets.

Redmond will integrate transportation and stormwater improvements

To protect water resources including surface water, groundwater, and stormwater, Redmond will reduce hydrologic impacts in its street improvements by:

- Designing narrower streets that help the environment by reducing impervious and pollution generating surfaces that impact the volume and quality of stormwater runoff.
- Using a watershed management approach to investing in stormwater infrastructure instead of project-by-project stormwater impact mitigation.
- Considering impacts to streams as part of planning street improvements.
- Using green infrastructure preferentially to gradually absorb and treat stormwater originating from transportation facilities.
- Adding stormwater controls to project areas to retrofit existing impervious areas.
- Supporting routine maintenance and cleanup measures such as street sweeping, along with other pollution source control efforts, through design and maintenance/operations of the transportation system.



Main Street Characteristics

Main Streets are important public places in Redmond, and are located in the heart of Redmond's two urban centers. Main Streets are "signature streets" characterized by superior urban streetscape design, unique design features, slow vehicle speeds, wide sidewalks, ample pedestrian amenities, safe and convenient pedestrian crossings, the presence of public art, and the programming of public events — all within a street that is enclosed by active storefronts. Main Streets are the centers for community activity and will be designed first and foremost to support safe, comfortable, and convenient pedestrian access

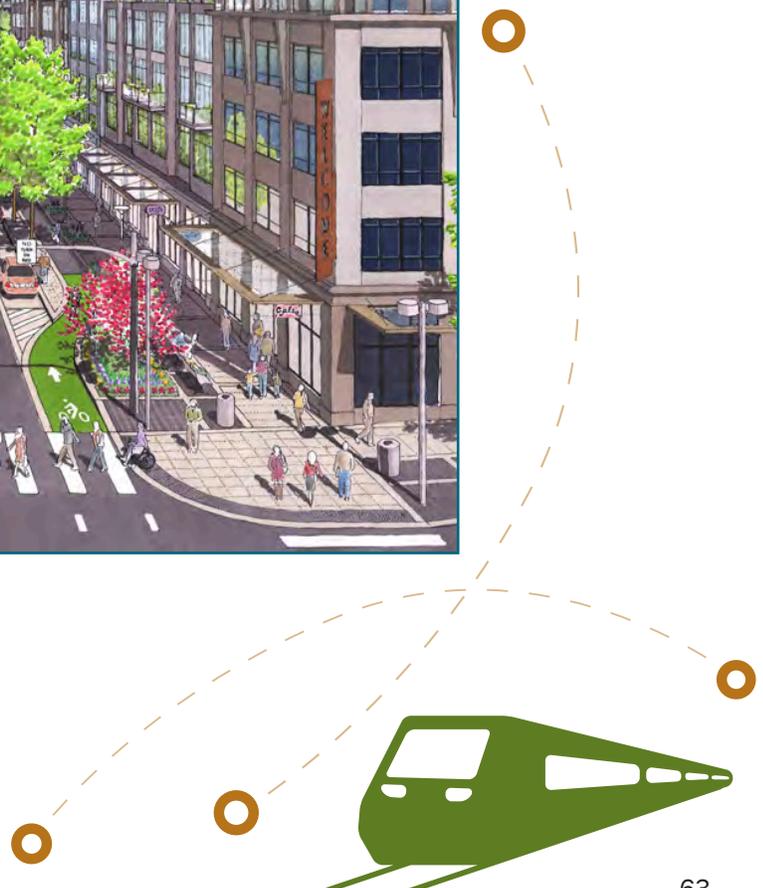
and interaction. These streets will be able to support high-density residential livability and a strong local business environment.

Redmond's two Main Streets are Cleveland Street in Downtown and 152nd Avenue NE in Overlake Village.

A well-designed Main Street becomes an important destination in its own right. The unique character of place and the active presence of local people will attract others from throughout the region. Each Main Street will have distinctive features that are designed as an integrated whole and that reflect the surrounding urban area. For more information about specific guidelines for Cleveland Street, refer to the 2013 amended "Downtown East West Corridor Study." For more specific design details for 152nd Avenue NE, refer to the 2010 "Overlake Village Street Design Guidelines."

Implementation

- Build new street connections in urban centers and Southeast Redmond to enable planned or approved land use growth.
- Transition existing streets into complete streets.
- Develop the two designated main streets: the Cleveland Street and 152nd Avenue NE.
- Improve modal corridors for quality connectivity between key destinations including Redmond neighborhoods, urban centers, and other regional destination.
- Improve SR 520 interchange areas for multimodal traffic operations and connections.



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Chapter 4.2:

Transit System Plan

Introduction

A comprehensive system of interconnected transit services is critical to improve and sustain Redmond's economic vitality, support the growth and development of Redmond's urban centers, and meet the mobility needs of Redmond residents, visitors, and employees. There are three key elements that will help the transit system grow to meet a broader range of travel needs throughout the day: 1) support a core network of frequent transit service and a complementary network of supporting services, as part of a comprehensive transit system; 2) leverage the mobility provided by transit investment by incorporating transit into the City's planning processes to improve access to, and the speed and reliability of, transit; and 3) identify key priorities, strategies, and actions between now and 2030 that leverage new opportunities and future light rail investment.

Strategic Approach to Transit

In order to be successful and meet Redmond's travel needs, the transit network must provide high-quality connections between the places that residents, visitors, and employees want to travel to and from with service that is fast, frequent, and available during the times of day when needed. Transit routes and stops must also be accessible, particularly because every transit trip starts and ends via another mode of travel, such as walking, biking, or driving.

Transit service that is frequent, accessible, and connects between local and regional destinations is necessary to support the growth and development of Redmond's urban centers. Redmond is already a major regional destination for employment, and is the second most dense city in the region in terms of jobs and housing, with over 8,300 people and jobs per square mile. Redmond's Overlake and Downtown urban centers will accommodate the majority of new housing growth. In addition, a significant amount of employment growth will occur in both of these urban centers, as well as in the Southeast Redmond neighborhood (see Figure 32).

This chapter identifies appropriate levels of service and strategic roadway corridors to support this growth, as well as provide robust neighborhood connections to the amenities, services, and jobs in our urban centers. These connections are particularly important in an environment of constrained roadway infrastructure. The images in Figure 29 illustrate one of the fundamental challenges we face and why a transportation network with increased reliance on alternative transportation modes is envisioned: moving 200 people in a two-block space means total gridlock by vehicle (even with five lanes) or needs only one lane width of two buses or one light rail train.

In addition, the priorities and actions identified in this chapter play two critical roles in support of light rail. First is leveraging existing and future frequent bus service to build the market along the future light rail corridor. This enables the City and the private sector to plan and build for future light rail capacity today. The second is prioritizing local transit connections to major regional transit hubs and future light rail stations, which leverages and extends the benefits of these important regional transit investments into adjacent Redmond neighborhoods, and reduces reliance on park and rides.

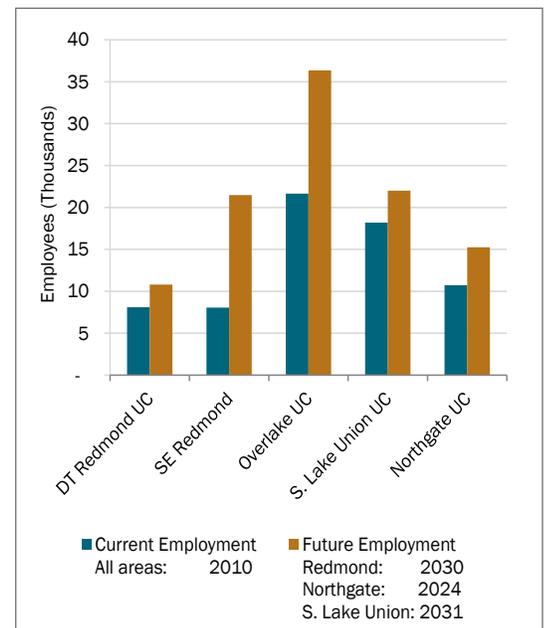
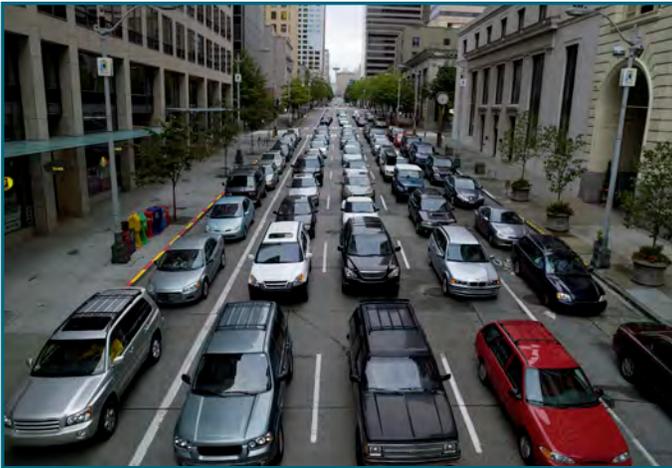


Figure 32. Employment growth



A light rail vehicle, simulated in the picture on the right, can hold as many people as this street full of automobiles.

During the interim period, when East Link will terminate at Overlake, maintaining and improving transit connections from Downtown Redmond and East King County to the Overlake Station will be particularly important because there is not adequate parking or roadway capacity to accommodate ridership growth through park and ride access in the Overlake neighborhood.

A common theme expressed by the community during the TMP outreach process is the ability to travel without a car, including by transit. Improvements to the quality of transit service, as well as increasing access to transit, will be critical to provide travel choices and mobility and enhance Redmond's quality of life for citizens, visitors, students, and employees. In the central Puget Sound region, transportation emissions account for the largest category (50 percent)¹ of all greenhouse gas emissions and are a major source of water pollution. Accommodating travel growth via transit, as well as other alternative modes, is a significant step towards achieving the City's environmental stewardship goals.

Transit System Development

The primary transit agencies operating in Redmond are Sound Transit and King County Metro. While Redmond does not provide transit service directly, it does play a role in identifying priorities and strategies for transit service implementation in collaboration with these transit agencies. Both Metro and Sound Transit face an uncertain funding environment today and into the foreseeable future. It is important for the City to identify the priorities for adding and maintaining transit service. The City will use the transit connections and level of service standards specified in this chapter to guide investments in transit service over time. These standards identify the most important "priority connections" between local and regional destinations, and specify appropriate levels of transit investment. In addition, these standards will be used to evaluate and assess the transit network as changes, restructures, and reinvestments occur. Where appropriate, the City may partner with transit agencies, employers, and nearby jurisdictions to help support the funding of key transit connections as described in the "Transit Service Program" in the TFP. These actions can help meet transit frequency and hours of operation standards.

The City plays a more direct role in facilitating bus transit speed and reliability, as well as improving access to bus and rail transit corridors and stops. Improving speed and reliability, as well as improving access for pedestrians and bicyclists, are critical for these corridors to meet community travel needs. The Transit Corridor Design Standards section of this chapter identifies the key strategic roadways for transit, and provides basic guidelines and strategies to help maximize benefits to the community provided by local and regional transit investment.

¹ Puget Sound Regional Council, Vision 2040

Transit Connections and Level of Service Standards

Identifying Priority Connections and Level of Service Standards

The priority connections and service standards in Figure 33 identify the most important local and regional connections for Redmond, and the levels of service needed to meet community needs and travel demand. The following process was used to develop the priority connections and service standards:

- Identify priority connections between key destinations, including neighborhood centers and major regional destinations, based on travel needs and demand, and desired connections between transit services.
- Apply network design principles, focusing on providing frequent transit service that connects Redmond's urban centers to the region, and Redmond neighborhoods to urban centers and the regional transit spine. Each connection is designed to meet a wide variety of user groups and trip purposes, and meet the needs of multiple markets.
- Identify preferred travel paths that represent a balance between travel speed and coverage (access to transit) for Redmond's urban centers and neighborhoods.
- Set appropriate "Service Families" that define the desired level of service in terms of the frequency of service by time of day. These standards are established by identifying potential transit demand based on population and employment density measures (persons and jobs per acre), as well as overall travel demand measures (all-day person trips) along the corridor.

Local connections are important: over one-half of employees working in Redmond live in surrounding Eastside neighborhoods.

Overview of Key Regional and Local Destinations

Connections to and from Seattle are important, representing the top transit travel destination for Redmond residents, employees, students, and visitors, and account for one-fourth of all work trips to and from Redmond. In addition to Downtown Seattle, the University of Washington is an important transit node for Redmond, not only because transit provides a connection between the region's primary learning institution and high-tech employment center, but also because it will connect with the developing North Link corridor and the region's second largest transit hub, which will be located in the University District.

The demand for connections between Redmond and key Eastside destinations creates a significant travel market that will be important to serve with transit. Combined, Eastside neighborhoods represent over one-half of employee home locations for Redmond employees.² The communities of Kirkland, Totem Lake, Downtown Bellevue, East Bellevue, Eastgate, and Sammamish are major destinations for employees, residents, and visitors in Redmond.

Local connections within Redmond are also important for Redmond's mobility and growth. The single largest job location for Redmond residents is Redmond; out of 22,000 workers living in Redmond, 9,000 (40 percent) live and work in Redmond. The overall market for local travel is large, with trips of less than five miles accounting for three-fourths of all daily person trips in Redmond. These short "local" trips are projected to grow at a faster rate than regional trips.

² From 2009-2010 Washington State Commute Trip Reduction (CTR) survey data for Redmond employers



King County Metro RapidRide coach

Transit “Service Families”

The Metro Strategic Plan and Service Guidelines define transit levels of service in terms of “Service Families,” which describe the desired frequency of service during three time periods:

Peak: 5 a.m. to 9 a.m. and 3 p.m. to 7 p.m. weekdays

Off Peak: 9 a.m. to 3 p.m. weekdays, 5 a.m. to 7 p.m. weekends

Night: After 7 p.m. all days

Service Family Description and Frequency Standard	Market Characteristics
<p>Very Frequent Highest levels of all-day service.</p> <p>Peak: Every 15 minutes or better Off Peak: Every 15 minutes or better Night: Every 30 minutes or better</p>	<p>Corridors that have the highest indicators of population and employment density, as well as the highest levels of travel demand. These are corridors connecting Redmond’s urban centers and urban centers within the region that provide a strong backbone of interconnected services, and have strong demand throughout the day.</p>
<p>Frequent High levels of all-day service.</p> <p>Peak: Every 15 minutes or better Off Peak: Every 30 minutes Night: Every 30 minutes</p>	<p>Corridors that have medium-to-high indicators of population and employment density, as well as high levels of travel demand that is more oriented towards the peak period. These are arterial corridors that connect major neighborhoods with Redmond’s urban centers, providing access to services in Redmond and frequent connections to the region.</p>
<p>Local Service Moderate level of all day service.</p> <p>Peak: Every 30 minutes Off Peak: Every 30 minutes* Night: Every 30-60 minutes*</p>	<p>Corridors that have moderate indicators of population and employment density, as well as moderate levels of travel demand throughout the day. These operate along secondary arterial or collector streets often serving neighborhood areas with no other transit connections.</p>

* Standard is higher than the equivalent service family in Metro’s Strategic Plan and Service Guidelines.

The priority connections identified in Figure 33 form the backbone for all-day mobility for Redmond residents, visitors, and employees. All connections will warrant all-day service from 6 a.m. to 10 p.m. or later as Redmond and the region continue to grow.

Alternative Transit Services

In areas of lower density, or areas where demand is dispersed and not along a single corridor, it may be more cost-effective to meet travel needs with alternatives to traditional “fixed route” service, such as Dial a Ride Transit (DART), vanpools, carpools, taxi vouchers, or community-access transportation. In 2012 King County adopted the “five-year implementation plan for alternatives to traditional transit service delivery,” which will guide the development and provision of a more comprehensive set of resources and service types. To create a more comprehensive transit system, it is important to continue to explore and implement a variety of alternative products to balance cost-effective service delivery, while meeting the diverse travel needs in Redmond and throughout the county. Redmond will continue to work with Metro to identify opportunities to implement new, innovative transit products that cost-effectively meet community travel needs.

Alternative transit services help meet diverse travel needs in Redmond and throughout the county.

Transit Level of Service Standards

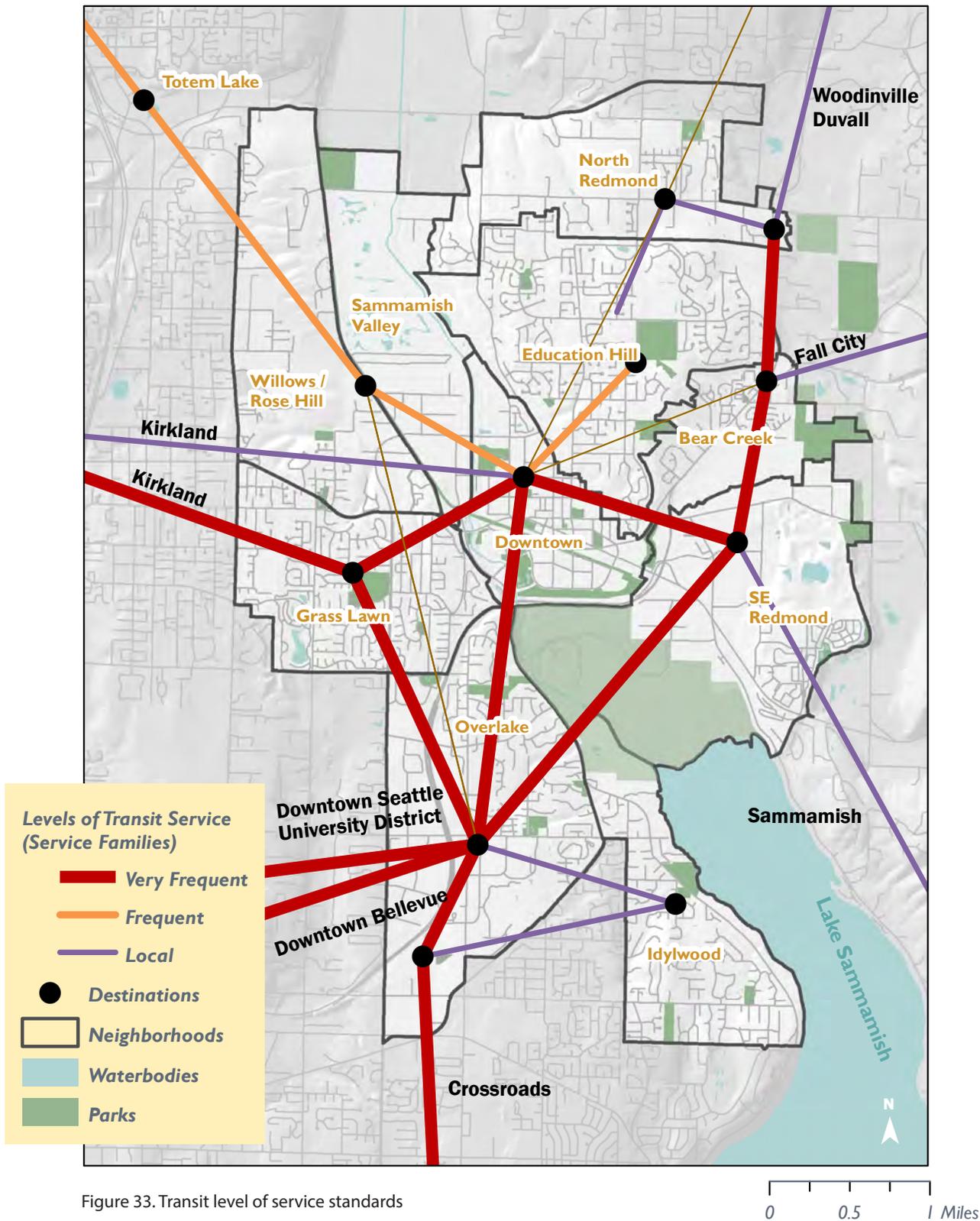


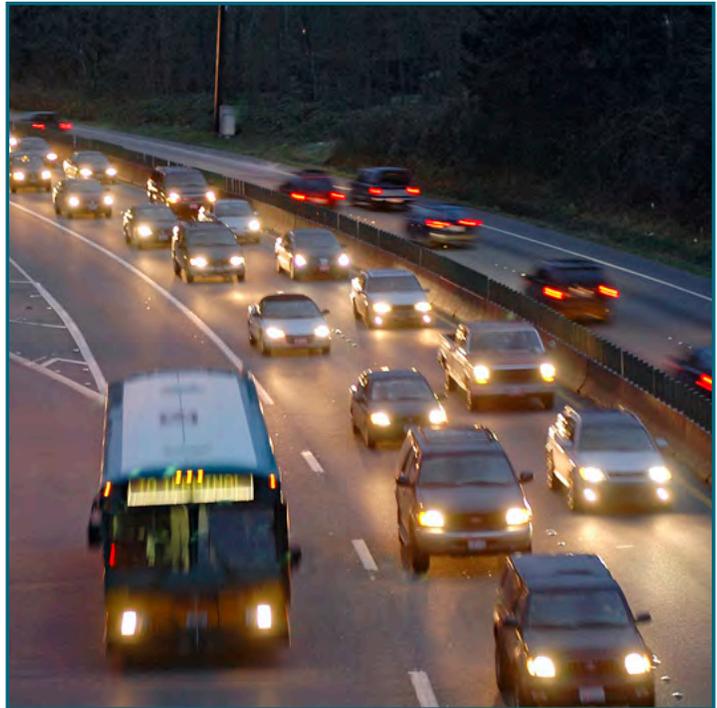
Figure 33. Transit level of service standards

“First Mile”/“Last Mile” Needs

It is important to meet the need for connections for the “first mile” between one’s residence and a transit hub, and for the “last mile” between a transit hub and one’s final destination. Transit operating on local arterials is often effective at meeting first mile and last mile needs. For example, over one-third of riders on the B-LINE between Bellevue and Redmond are connecting from, or connecting to, another bus.³ In other areas, alternatives to fixed route service may be more appropriate, especially where demand is dispersed over a wider area. Redmond will continue to work with King County Metro and Sound Transit to implement traditional bus service and develop other innovative approaches to help meet the growing need to connect to and from major transit hubs. There may also be opportunities to explore other innovative approaches, such as car and bicycle sharing programs, as part of a comprehensive approach.

Americans with Disabilities Act (ADA) and Paratransit Services

In Redmond, both Metro and Sound Transit provide services to historically disadvantaged populations, including students, youth, seniors, and people with disabilities. Regular bus service is intended to be the primary mode of transit for persons with disabilities, and all coaches are accessible for people with mobility devices. Additional paratransit services, such as Metro’s Access program, are available for eligible individuals with disabilities, and comply with the ADA requirement for curb-to-curb paratransit service as a “safety net” for people whose disabilities prevent use of accessible traditional bus service. The City will continue to work with transit service agencies to support mobility via transit, and provide accessibility in the street and pedestrian networks through the integration of ADA as part of standard street design and maintenance.



State Route 520

Coordination with Private and Other Transit Operators

In addition to Sound Transit and Metro, many other organizations provide transit services in Redmond for their customers, employees, members or residents. Several businesses provide shuttles for employees and customers, and both DigiPen and Lake Washington School District provide bus and shuttle services for students. Retirement facilities, both within and outside of Redmond, provide services to and from destinations in Redmond. These services are complementary to the public transit system, often providing connections to public transportation hubs, helping meet first-mile/last-mile needs. Areas for loading and unloading passengers, vehicle storage, “layover” areas, and passenger connections to public transit are all important for the success of these services. The City will continue to coordinate with organizations that provide these services.

Transit Corridor Design Guidance

The previous Transit Corridor and Level of Service Standards section identified the most important transit connections and appropriate levels of transit service investment that would be provided by Metro and Sound Transit. While the City does not operate transit services, the City has major transit responsibilities. These include building and shaping the transit operating environment, improving the community’s access to transit stops and corridors, improving transit speed and reliability through strategic investments in street infrastructure, and leveraging the ability of transit to serve current and future development. This section identifies the most important transit corridors and specific roadways

³ King County Metro - Rapid Ride B Line Customer Satisfaction Survey, December 2011

Designated Transit Corridors

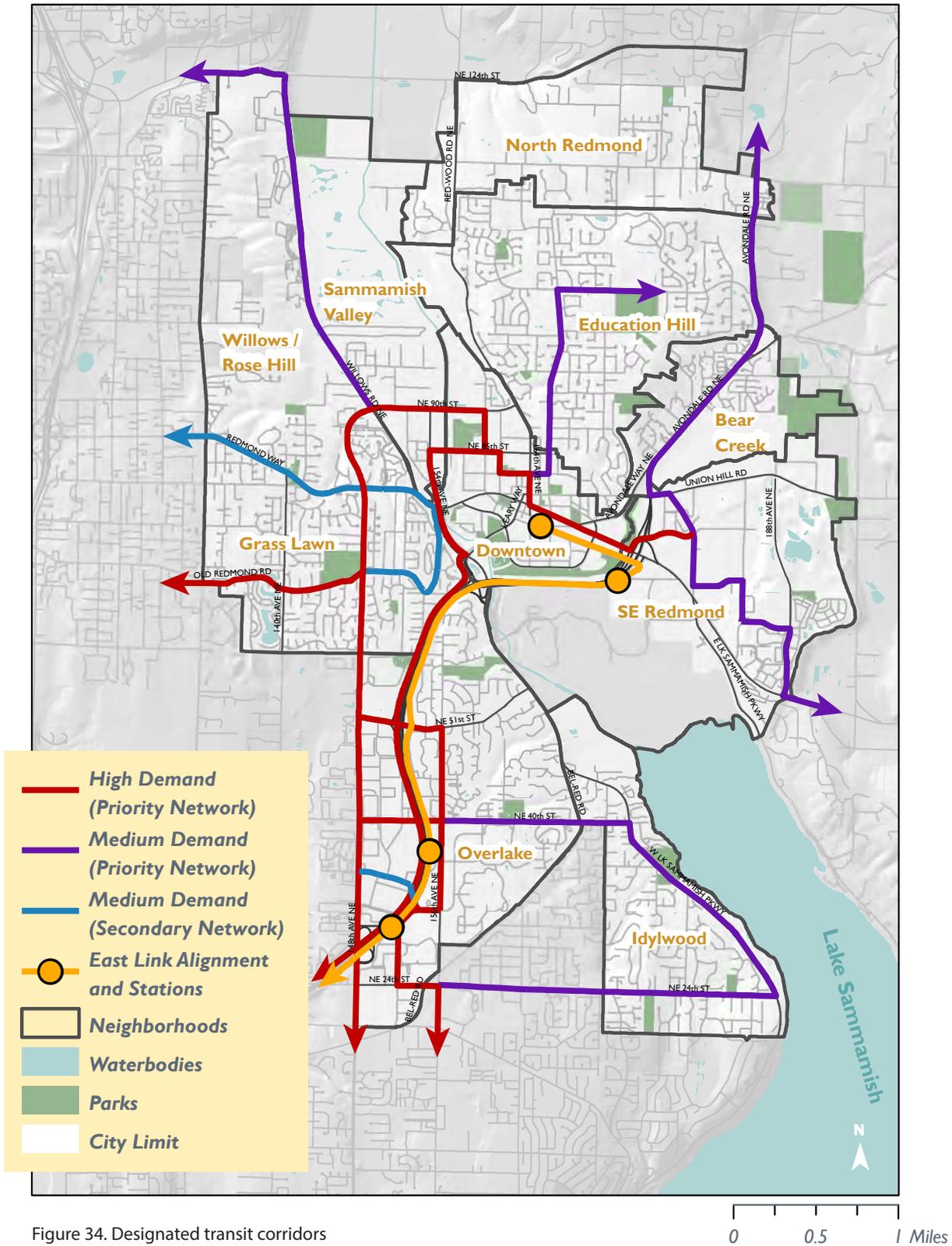


Figure 34. Designated transit corridors

for transit in Redmond, and outlines basic roadway and infrastructure guidelines intended to maximize the value provided by transit investment in our community.

These corridors are the strategic pathways that are priorities for transit service investment. They are where the City of Redmond will plan for and invest in transit speed, reliability, and access infrastructure improvements because they represent the best combination of potential market demand, coverage, and access within neighborhoods and urban centers, and support local and regional connections to and from key destinations. The standards are intended to guide the design of facilities along these corridors to accommodate transit vehicles (e.g., transit signal priority, transit stop design, and location) and indicate where access improvements for transit riders should be considered.

Detailed design guidance is included in Appendix F: Design Guidance, and defines guidance for high demand and medium demand transit corridors.

High Demand Transit Modal Corridors

These corridors include the major arterials and the SR 520 Freeway, connecting Redmond's urban centers and major neighborhood activity centers. These are recommended as a high priority because they possess the highest demand for transit and have the highest levels of service today and into the future. The person-carrying capacity of transit in these corridors is similar to an entire general purpose lane of travel and is critical to the functioning of the transportation system, particularly in the urban centers where transit is critical to the functioning of the entire transportation system and represents the most significant ability to accommodate peak travel growth. These corridors are the highest priorities for service hour and infrastructure investments, creating service that is fast, frequent, reliable, and easy to get to, and are key candidates for higher cost investments, such as dedicated transit lanes. The transit service standard for these corridors is for one or more routes with a combined frequency of 15 minutes or better throughout the day operating in the corridor. Wherever possible, service should be focused in these corridors.

Medium Demand Transit Modal Corridors

These corridors will have lower levels of service investment and ridership than high demand corridors, but are important parts of the overall transit network. These corridors support active transit patronage and provide important coverage and local access functions throughout the city by providing convenient access to Redmond's urban centers and the regional transit spine. Investments should focus on improving access to adjacent housing and important services in order to maximize this function, and on lower cost speed and reliability improvements such as transit signal priority. The transit service standard for these corridors is for at least one current or future route with a service frequency of 30 minutes or better all day.

We have an opportunity to improve connections to Redmond's urban centers and future light rail stations in anticipation of light rail's arrival in 2023.

Supporting Strategies for Transit

Transit Oriented Development

Encouraging, and integrating transit oriented development with transportation infrastructure and services is an important element of the strategies to prepare for light rail, support urban centers, and improve travel choices and mobility. This approach focuses on the support of transit oriented districts, rather than specific transit oriented buildings or single developments. The transit corridors identified in this chapter provide a framework that coordinates transit service investments with planned growth and density, and with strategic connectivity and access improvements, that work together to create and support successful transit oriented districts.

Transportation Demand Management

A key component of making transit useful for the community is ensuring that existing and potential riders have the information they need to understand and successfully use the transit network. This includes information about where bus routes travel to and from, what routes they use, where stops and stations are, the weekday and weekend service schedules, and travel times from point A to B. The City's Transportation Demand Management Program includes information and resources to help make transit a convenient choice for visitors, residents, and employees in Redmond. In addition, using the person-carrying capacity represented by available seats helps improve the overall efficiency of Redmond's transportation network.



Parking

Parking management and pricing play a role in determining transit use, viability, and performance, and help the City meet its mode share goals. For example, Seattle has achieved a 38 percent mode share for non-single occupant vehicle modes, in part due to the combination of high transit availability coupled with parking pricing. Accommodating more travel by alternative modes helps lower parking supply requirements, helping the City achieve a vibrant, walkable community. Parking pricing can encourage transit patronage by simply changing the economics of daily travel choices. It can be especially effective if coupled with a transit pass program. A commuter holding a transit pass is more likely to ride transit to avoid paying for parking than someone who must choose whether to pay a transit fare or pay for parking.

Private vehicles are one means of access to transit, whether by parking at park and rides or by dropping passengers off at stops and stations. Most park and rides in Redmond are located in our urban centers and are currently at or over capacity. In general, significant expansion of park and ride capacity is not desired in Redmond's urban centers, due to the high cost of providing additional parking, opportunity to better support ridership by using land for housing and jobs, and the limited ability to significantly expand parking in our urban centers. As demand for transit increases, parking management techniques and strategies that provide alternatives to additional parking, such as improved local transit, bicycle parking, or designated loading and unloading zones, will be implemented. Early expansion of transit parking in Southeast Redmond will provide a strategic opportunity to intercept regional trips from East King County and help meet the growing demand for transit when Light Rail arrives at Overlake.

Transit Centers and Layover Facilities

In addition to corridor elements that improve transit speed, reliability, and access, layover facilities are an important aspect of transit operations. Layovers are typically scheduled at the end of a route, where the bus or train may park and "layover" before starting the return trip. Layovers are built into route schedules for several reasons. They provide a cushion in the schedule for routes that encounter varying degrees of congestion and delay, thereby increasing service reliability. They allow for timing of key connections between routes, supporting "timed transfers." Finally, they provide drivers a brief period of time for restroom breaks. Meeting layover needs requires a space to park the transit vehicle as well as facilities for the transit driver. To accommodate additional transit service, it may be necessary to identify additional layover facilities. Due to the constraints on parking and space, there is limited ability to accommodate additional dedicated layover facilities in Downtown Redmond; however, additional layover facilities should be explored in Southeast Redmond.

Prioritizing Investments to Increase Transit Use

Future changes to the transit network will be required to adapt to East Link when it reaches Overlake in 2023, and again when East Link arrives in Downtown and Southeast Redmond after 2030. These events will not only prompt a review of the network of transit services to adapt to changes in travel patterns and mode shift, but also to account for redevelopment and densification of station areas in Overlake Village, Southeast Redmond, and Downtown. Below are the key implementation priorities for each major phase between now and 2030.

Now to 2023

The 10 years between adoption of this plan and the initiation of East Link service to Overlake in 2023 offer an important opportunity to develop a solid foundation for the arrival of light rail. The City's actions and strategies will focus on building a strong backbone of regional service along the future light rail corridor and improving local and regional connections to Redmond's urban centers and future light rail stations. Key priorities and actions during this period include the following:

Improve local and last mile transit connections to urban centers and the regional transit spine

Redmond will work with regional transit agencies to maintain and improve local transit connections to Redmond's urban centers and the regional transit spine. Options will include enhancements to traditional fixed route service as well as alternatives to fixed route service where appropriate, in order to improve coverage and access to transit. Focus areas will include Downtown, Overlake, Willows, Southeast Redmond, Bear Creek, Education Hill, and Idylwood.

Develop and implement innovative "access" improvement strategies

Redmond will create and implement strategies to improve access to transit corridors, including the designation of "loading and unloading" zones for transit patrons, the management of on and off street parking to maximize customer and transit patron access, the improvement of wayfinding, and bicycle parking facilities.

Implement speed and reliability enhancements along Redmond Way

Redmond will provide speed and reliability improvements along Redmond Way as part of the larger Redmond Way/Cleveland Street couplet conversion.

Develop a transit implementation plan

With consultant assistance, develop a transit implementation plan that identifies short- and medium-term actions and an implementation timeline to support and enhance transit service, speed and reliability, and access. The plan should identify transition strategies that support transit mobility during the construction of light rail, and strategies for potential bus service redeployment after the start of East Link service to Overlake.

2023 to 2030

The arrival of East Link in Overlake in 2023 will represent the addition of a major transportation link and transit backbone within the Eastside and between the Eastside and Seattle. As an interim



The 10 years between adoption of this plan and the initiation of East Link service to Overlake in 2023 offer an important opportunity to develop a solid foundation for the arrival of light rail.

Transit Service Coverage and Frequency, 2012

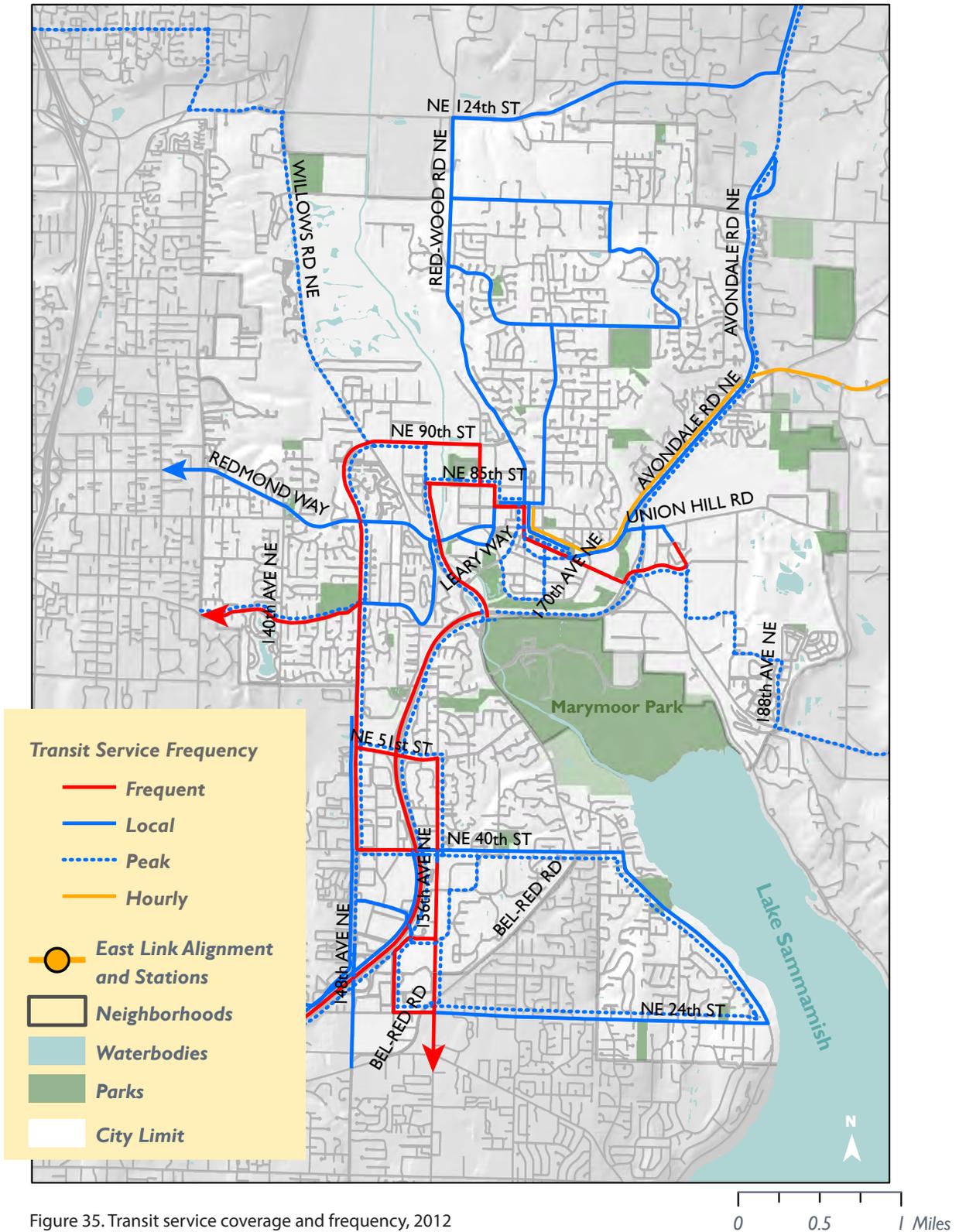


Figure 35. Transit service coverage and frequency, 2012

terminus, the Overlake light rail station will be a major access point for riders wishing to access the light rail corridor, and bus transit interconnections will be critical for travelers from Downtown Redmond, Southeast Redmond, and adjacent neighborhoods.

Support Overlake Transit Center Station as major transfer hub

Redmond will implement and improve multimodal connections to the Overlake Transit Center Station, including pedestrian, bicycle, and transit facilities. To facilitate access to Overlake and the light rail corridor, most transit services in Redmond should be reoriented to connect with the Overlake Transit Center Station to provide direct access to light rail.

Work with transit agencies to maintain and build the transit corridor between Overlake, Southeast Redmond, and Downtown

Direct connections between Downtown Redmond, Southeast Redmond, Overlake, and destinations in Seattle should continue to be supported and maintained. These connections are critical to support the continued growth and economic development in Downtown and in Southeast Redmond, accommodate growing travel demand to the new Overlake light rail stations, and build and maintain the transit market prior to light rail arriving in Downtown Redmond.

Work with Sound Transit to support early construction of transit commuter parking in Southeast Redmond

The early construction of park and ride facilities and associated multimodal street improvements in Southeast Redmond will help support the growth and development of the future light rail corridor, and will be necessary to support the growing travel demand along the SR 520 corridor and access to Overlake. Measures should be taken to ensure efficient and quick bus access to and from this facility.

2030 and Onward

The anticipated arrival of East Link in Southeast Redmond and Downtown Redmond will provide an important opportunity to improve connections and access in order to maximize the local value provided by this investment.



Support the Downtown Redmond and Southeast Redmond stations as major transfer hubs

Redmond will develop and implement strategies designed to facilitate transfers between the Redmond Transit Center and light rail station in Downtown. Elements will include wayfinding, pedestrian facilities and treatments, and transit route modifications to provide convenient connections between bus transit and East Link light rail.

Existing Service

Route and Description		Frequency (minutes)										
		Weekday					Saturday			Sunday		
		AM Pk	Mid day	PM Pk	Eve	Night	Day	Eve	Night	Day	Eve	Night
VERY FREQUENT AND LOCAL ALL-DAY ROUTES												
B	Bellevue-Crossroads-Overlake-Redmond	10	15	10	15	30	15	15	30	15	15	30
221	Redmond-Bellevue	30	30	30	30-60		30	60		60	60	
245	Kirkland-Overlake-Crossroads-Eastgate-Factoria	15	15	15	30	60	30	30	60	30-60	60	60
248	Avondale-Redmond-Kirkland	30	30	30	30	30-60	30	30-60		30	30-60	
249	Overlake-Bel/Red-Kirkland-Bellevue	30	30	30			45			45		
545	Redmond-Overlake-Seattle	8-10	15	8-10	10-30	60	30	30-60		30	30-60	
566	Overlake-Bellevue-Kent-Auburn	7-30	30	10-30	30-60							
931	Bothell-Woodinville-Redmond	30	60	30			60					
PEAK HOUR ROUTES												
216	Redmond-Sammamish-Issaquah-Seattle	30		30								
224	Redmond-Duvall-Carnation-Fall City	60-90		60-90								
232	Duvall-Redmond-Overlake-Bellevue	30		30								
242	Overlake-Seattle	20-30		30								
244	Overlake-Totem Lake-Kenmore	30		30								
250	Overlake-Seattle	30		30								
265	Overlake-Houghton-Seattle	15-20		15-20								
268	Redmond-Seattle	30		30								
269	Overlake-Redmond-Sammamish-Issaquah	20-30		20-30								
542	Redmond-Overlake-University District	15		15								
930	Redmond-Totem Lake	30		30								

Figure 36. Metro and Sound Transit routes, 2012 service levels

Transit Destinations and Connections

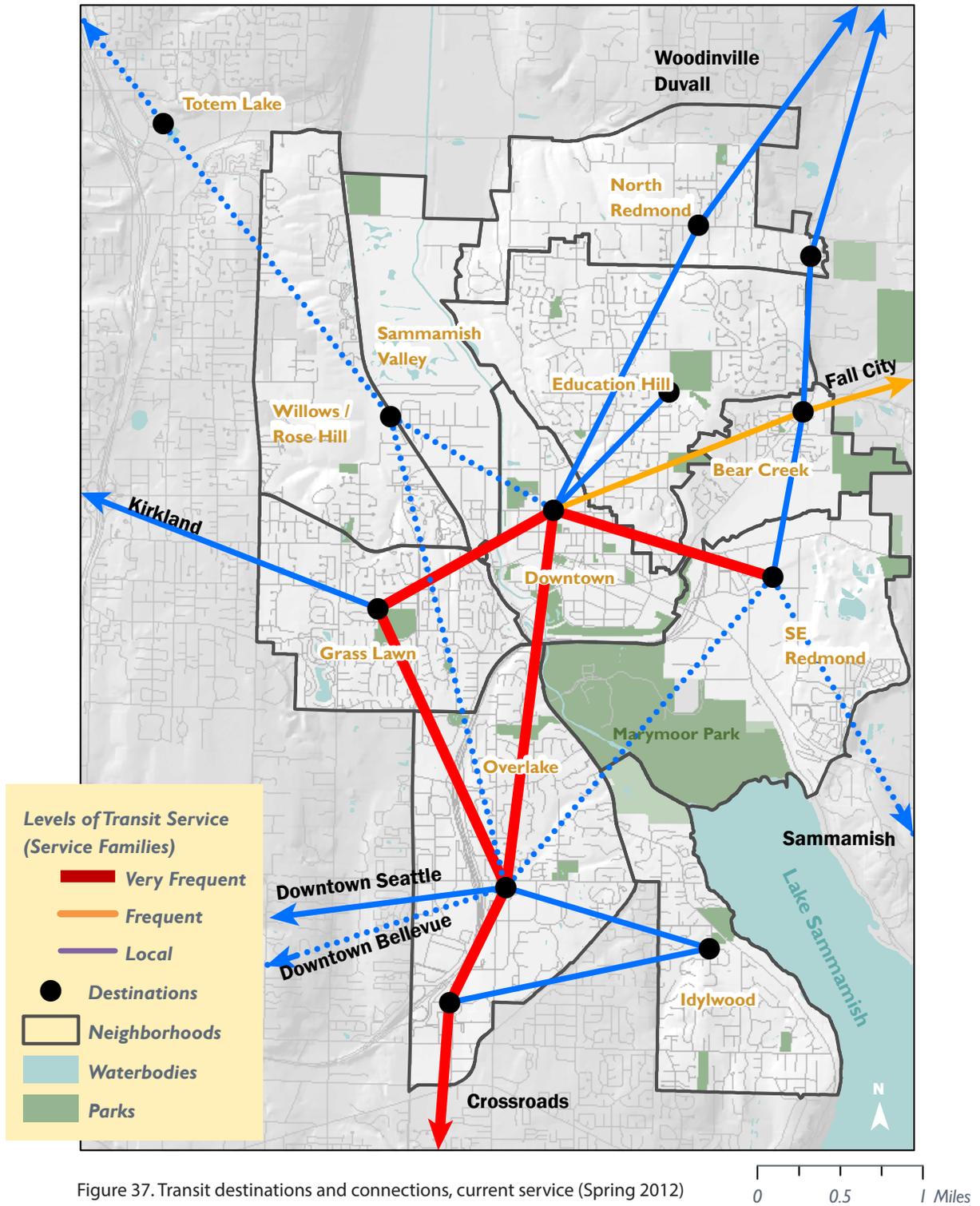


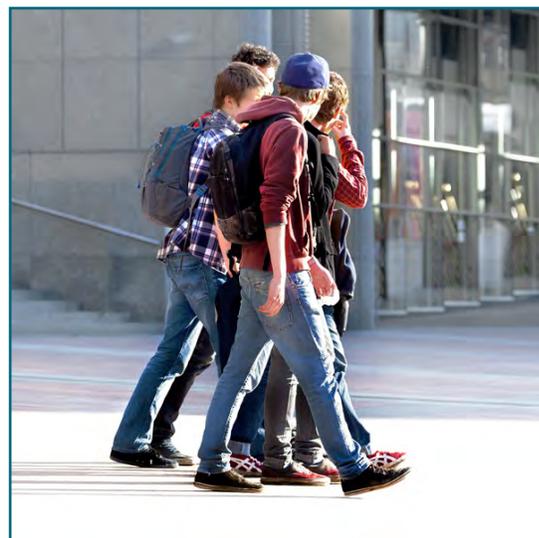
Figure 37. Transit destinations and connections, current service (Spring 2012)

Chapter 4.3:

Pedestrian System Plan

Introduction

Every trip, including transit and automobile trips, begins and ends with walking. Walking serves as a foundation for a successful transportation system by meeting significant urban center travel demand, providing efficient access to transit, connecting between neighborhood destinations, and creating a vibrant street life within the Redmond community. The pedestrian environment is as much about a sense of place (sidewalk cafes, spaces for events, gathering places for conversation, enjoying art and green spaces, and window shopping) as it is the most basic form of travel. An important part of the vision for this plan is creating a safe walkable Redmond both in the two urban centers and in all Redmond neighborhoods.



Strategic Approach for Walkable Redmond

The overall transportation vision and transportation strategies rely heavily on a successful pedestrian system that is interwoven into an integrated multimodal transportation system to create a walkable Redmond. The pedestrian strategic approach to making Redmond more walkable is threefold: 1) create high-quality pedestrian environments in urban centers and light rail station areas; 2) complete a high-density, well-connected network of pedestrian facilities throughout all Redmond neighborhoods; and 3) improve the safety and comfort of all facilities including pedestrian crossings and increasing the separation of pedestrians from traffic. This approach fits with both the overarching transportation strategies and the citywide guiding principles.

Transportation Strategies

Downtown is rapidly becoming an urban center with a dense mix of land uses. Overlake is not far behind, as the planning is already in place to transform Overlake into the second Redmond urban center. Within these two urban centers, work, play, and home will be just a short walk away, as walking will become the most significant mode of travel for accommodating these growing centers. The travel forecast model reveals that from 2010 to 2030, walking (as a percentage of daily travel) will increase more than any other mode within the Downtown and Overlake urban centers.

The pedestrian realm (sidewalks, urban trails, etc.) will be at the core of these two important urban places within the Redmond community. Walking is also critical for automobile trips since finding parking directly in front of any store or business can present a challenge. By parking once and walking to various destinations on well-designed sidewalks and paths, the urban experience becomes less stressful. The quality of the pedestrian experience will largely determine how successful the City is in creating vibrancy and economic vitality in these two urban centers.

A walkable Redmond will act as the catalyst to improve all travel choices and overall mobility. Access to conveniently placed transit stops is simplest and most efficient by walking. For regional trips, walking

Every trip begins and ends with walking.

to East Link light rail will provide fast and inexpensive access for the many residents and employees in the two urban centers. The forecast of ridership by Sound Transit for the Overlake Village light rail station shows that about 33 percent of all riders will walk or bicycle to the station. Many others will be able to walk to one of the frequent feeder bus routes such as the Metro B-Line to directly access light rail without needing a car.

Walking is essential to creating the sense of community in neighborhoods, as children walk to school, people walk to parks, commuters walk to transit stops, and neighbors connect with neighbors along the trails, paths, and sidewalks. Improved connectivity creating more direct connections to desired destinations will significantly shorten walking times, particularly between cul-de-sacs (see Figure 38), making walking an attractive form of travel compared to the automobile for short trips. Walking also provides basic mobility for those who do not have the choice to drive, such as teens and the elderly.



Figure 38. Connections help shorten travel distances

Citywide Guiding Principles

Walking improves economic vitality. Unlike all other modes of travel, there is not a direct cost for walking. The cost savings from walking are significant considering transportation costs are the second highest household expense in America next to the cost of housing.

Walking is also healthy for the individual and the environment. Walking and bicycling are the only forms of travel that combine exercise and transportation (“active transportation”), improving both personal and public health with no adverse impacts to the environment.

Pedestrian System Development

Walking will be an attractive mode of travel by providing a pedestrian system with a dense network of sidewalks and trails that connect directly to destinations. The walking environment will be useful, safe, comfortable, and interesting, and will also enhance community character by activating the urban centers and tying neighborhoods together to create a walkable Redmond.

Pedestrian Priority Zones

Urban walking environments will provide mobility for high numbers of pedestrians and form vibrant streetscapes that create a high quality of life in the Downtown and Overlake urban centers and near light rail stations as shown in the pedestrian zone map (Figure 39).

Main Streets, Shared Streets, and Linear Park Trails in the Urban Centers

In addition to wide and comfortable sidewalks on both sides of the streets in Redmond’s two urban centers, there will be special streets and trails to enhance and promote the overall walking environment.

The pinnacle of the pedestrian system in the two urban centers will be the main streets. Connected into the main streets and urban street grid system will be shared streets (also known as woonerven – these low volume, low speed narrow alleys will serve pedestrians, bikers, and automobiles) and trails. Each urban center plan has specifically identified a pedestrian system of shared streets and trails to support the walking environment in concert with the street network. Pedestrian crossings will be frequent and relatively short throughout the urban centers. Crossings will be well marked with enhanced safety features such as beacons or signals as needed. Sidewalks will be wide and have furnishing zones, bicycle lanes, and/or on-street parking to provide buffers from automobiles and street noise.

Pedestrian Priority Zones

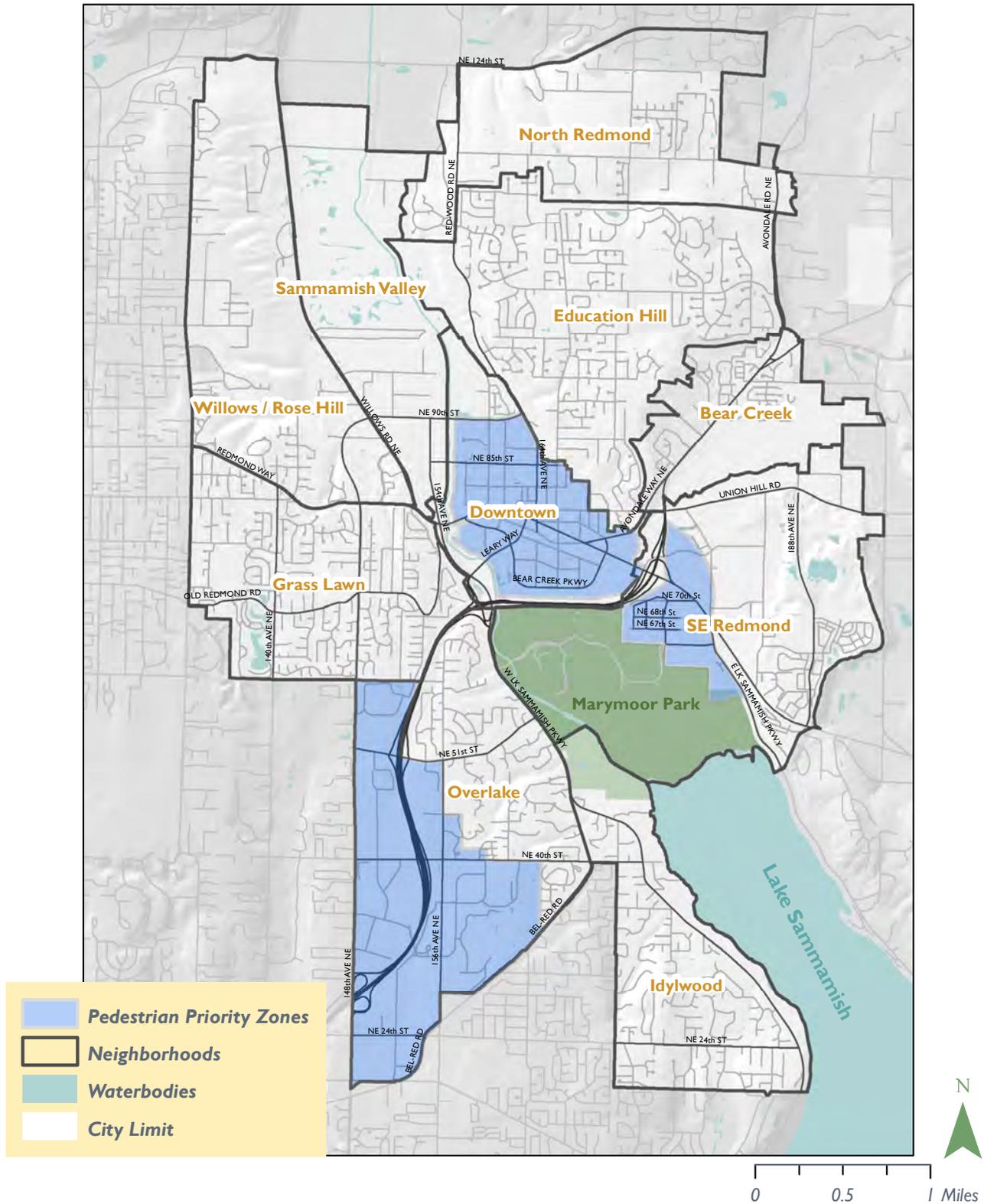
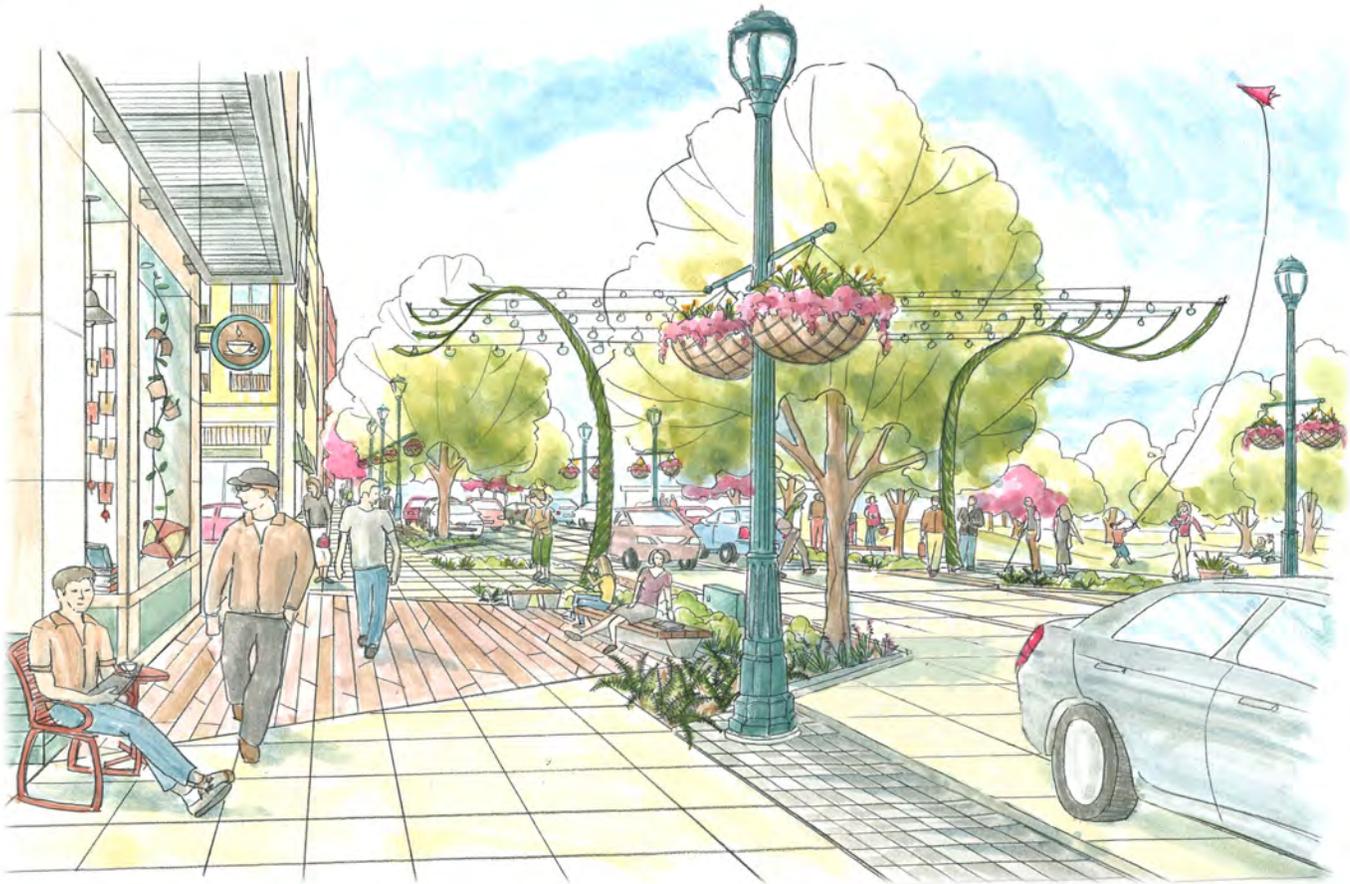


Figure 39. Pedestrian priority zones



Rendering of Cleveland Street in its future configuration as a pedestrian-oriented main street

Main streets, shared streets, and linear park trails offer distinct experiences that build off of one another. Main streets are a buzz of activity with shops, restaurants, sidewalk cafes, and pocket plazas for resting or people-watching. Shared streets offer larger pocket plazas that typically provide for sidewalk cafes or food carts. Automobile volumes and speeds are limited, inviting pedestrians to utilize the entire shared street. Linear park trails offer a relaxing recreational experience while also connecting into the vibrant urban experience, with spillover from the main streets.

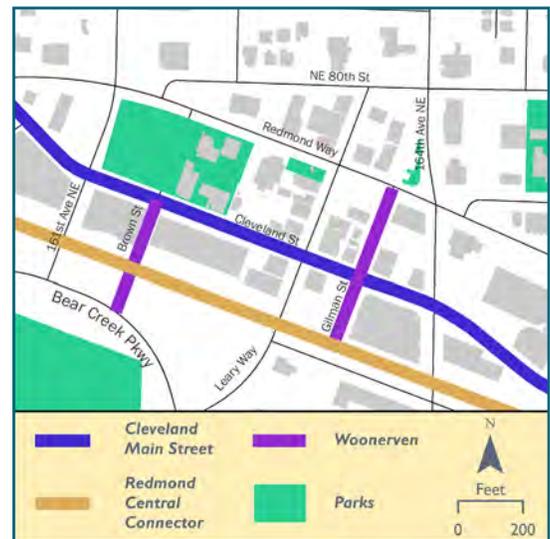
The close proximity of these facilities will create a memorable experience that draws in the Redmond community and regional visitors again and again.

Sidewalks and Pathways

Pedestrian facilities throughout the urban centers, such as sidewalks and interior pathways, will provide a wide, attractive pedestrian environment that provides a comfortable walking experience and creates a dense network of connections strategically linked with frequent, convenient crosswalks.

Pedestrian Crossings Urban Areas

Streets can be pedestrian barriers that add significant travel time for pedestrian trips. Frequent crossings will make streets more porous and



Central Downtown main streets, shared streets, and linear park trails

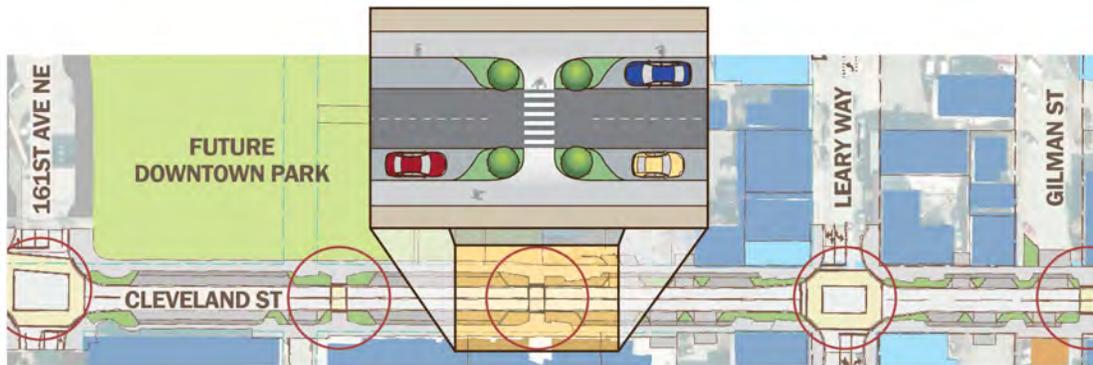


Figure 40. Pedestrian-friendly crossings in Downtown Redmond

easy to cross. The urban centers will include mid-block crossings to provide a finer-grained crossing network. Figure 40 illustrates a high crossing frequency with crossings placed at high demand crossing locations, while minimizing impact on automobile signal operations. Table 10: Pedestrian Crossing Design Standards in Appendix F provides further guidance.

Redmond’s urban centers will have short crossings because of curb bulbs (see Figure 41) and tighter curb radii, making walking convenient and comfortable.

Capacity

A clear through walkway area of a sidewalk is needed to make walking comfortable. Figure 41 provides space for competing needs while providing a minimum through walkway width and minimum through walkway taper to ensure continuity of the through walkway. Further design guidance is included in Table 9: Sidewalk Design Guidance in Appendix F.

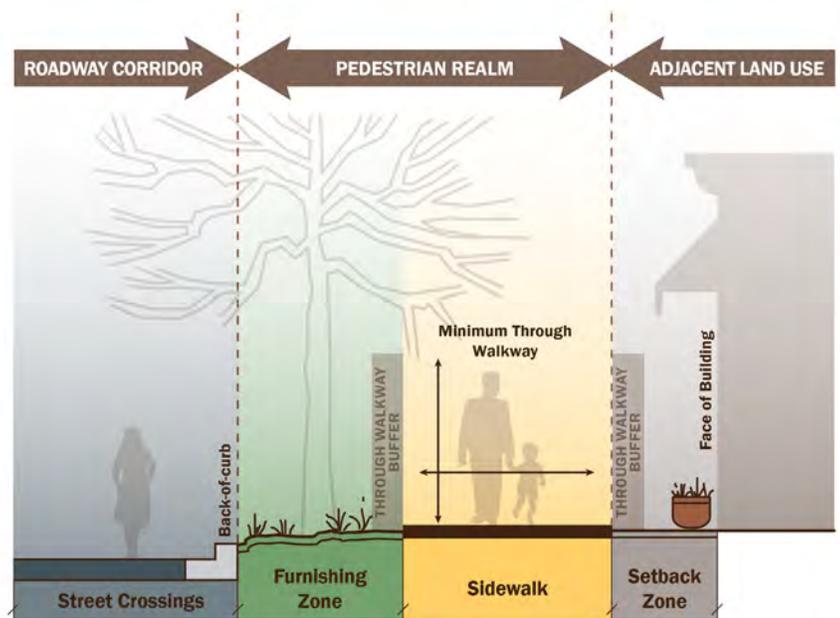


Figure 41. Cross section of the pedestrian realm

Figure 41 details the major elements of the pedestrian realm including:

- Street crossings such as crosswalks at signalized intersections or mid-block crossings.
- Furnishing zones that may include street trees (typical in urban environments) or planter strips (standard in neighborhoods).
- Sidewalks with a minimum through walkway to enable comfortable walking.
- A setback zone that enhances the pedestrian realm by allowing elements like sidewalk cafes and building articulation.

Residential and Mixed-Use Neighborhoods

Pedestrian facilities in neighborhoods will tie the community together by supporting safe and easy access to neighbors and community services like schools and parks, enabling greater pedestrian activity at community services, and enhancing neighborhood character by adding green to neighborhoods through landscaping and innovative stormwater treatments. Pedestrian improvements in neighborhoods will be focused on a more connected network of facilities that includes completing missing links, safe walk routes to schools, and meeting the particular needs of special population groups such as seniors and disabled persons. Providing for a safe pedestrian system to meet the needs of the most vulnerable populations makes for a safer and more comfortable pedestrian environment for all users.

Network Connectivity

Short trip lengths are essential to making walking an attractive travel mode. Therefore, a dense network of pedestrian facilities (sidewalks and trails) will tie neighborhoods together. Redmond will foster a partnership between the City, land owners, business owners, developers, and others to implement this highly connected pedestrian system that includes direct linkages to adjacent streets and trails, and connects cul-de-sacs together. Figure 42 is an example of a short new connection between NE 31st Court and 173rd Court NE, which improves connectivity between a relatively big residential area and Audubon Elementary School. This project was prompted by requests from students.

Table 8: Network Connectivity in Appendix F provides guidance on how the pedestrian system should be implemented to improve neighborhood connections.

Redmond's extensive network of trails will be improved for pedestrian connectivity, changing over time from having very few access points to having a high number of access points. This will dramatically increase the transportation value of the trail network by supporting the short trip lengths that pedestrians require to flourish.

Pedestrian Crossings in Neighborhoods

With more modest pedestrian volumes, crossing location in the neighborhoods will focus on providing access to community services (includes access to transit, churches, schools, and parks). Crossing higher volume streets can be a challenge because signalized crosswalks are often widely spaced. To improve access to community services, additional safe mid-block crossings will be installed, and existing mid-block crossings will be improved as needed. This greater frequency of safe pedestrian crossings will encourage the number of people walking within neighborhoods.

Capacity

Sidewalk widths in neighborhoods will provide a basic width for safe and comfortable walking that is appropriate for the anticipated level of pedestrian activity. Five feet provides space for two people to

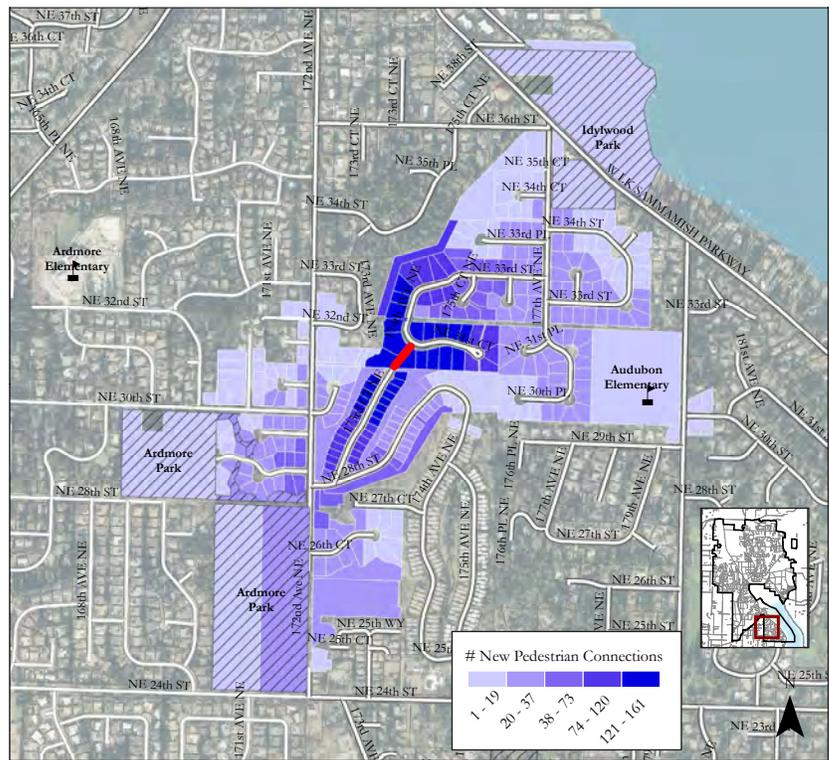


Figure 42. Walkability benefits of the NE 31st Court Trail

comfortably walk side by side and is the standard on local streets with lower automobile volumes. Areas with community services like schools, parks, and bus stops are likely to see heightened pedestrian activity levels, and will include greater sidewalk widths.

Americans with Disabilities Act (ADA)

The pedestrian system will be designed to provide mobility for all. Public and private investment supports the transition to a pedestrian system that is usable for the mobility impaired, including design treatments, such as curb ramps.

This approach also supports the City's compliance with the federal Americans with Disabilities Act (ADA). In order to ensure ADA compliance, the City will maintain its ADA transition plan.

Prioritizing Investments for a More Walkable Redmond

Many existing streets in Redmond were originally built without pedestrian improvements. The City is addressing this issue by funding a sidewalk program that builds pedestrian facilities, but funding levels and physical constraints will not allow the City to catch up and ensure sidewalks on both sides of each street by 2030.

Redmond will prioritize filling in sidewalk gaps based on safety needs and pedestrian trip generators that include transit stops, light rail stations, schools, parks, and other high generators. The 2030 goal is to complete sidewalks on both sides of every public street in the urban centers, adding sidewalks on at least one side of arterials, and building sidewalks on local streets where there is a notable benefit to neighborhood connectivity. Investments will be mixed between the urban centers and the neighborhoods.

The City will carefully track progress toward increased walking in the urban centers and neighborhoods through innovative measurement tools like connectivity analysis to help assure the best use of public funds in pedestrian system investment.

Implementation

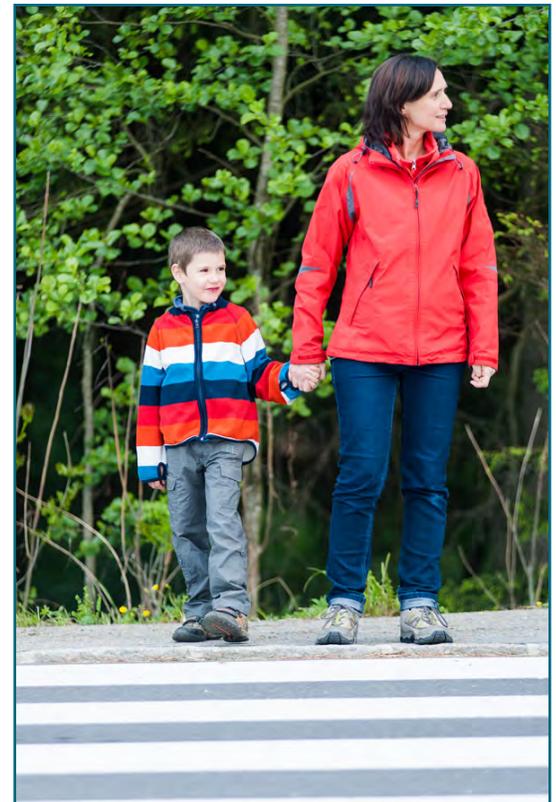
The vision for the pedestrian system will be achieved by:

- Creating high-quality pedestrian environments in the Pedestrian Zones (Downtown and Overlake urban centers and light rail station areas);
- Completing a high-density, well-connected network of pedestrian facilities throughout all Redmond neighborhoods; and
- Improving the safety and comfort of pedestrian crossings and separation of pedestrians from traffic.

Two key action steps towards achieving the vision are:

- Three Year Action Plan item #4: Reconcile Zoning Code with TMP Update.
 - Update the Downtown pedestrian system map and standards to enhance connectivity and encourage urban style activity and design.
- Three Year Action Plan – Other Activities item #5: Regional Trail Access Study will help identify new connections that have the ability to significantly improve the usability of the pedestrian system, particularly in neighborhoods.

A network of pedestrian connections helps bring neighborhoods together.



Physical improvements to the pedestrian system will be completed through a three-pronged approach:

1) Transportation Facilities Plan – Key projects include:

- Cleveland Streetscape
- Overlake Village Pedestrian & Bike Bridge
- SR 520 Trail Grade Separation at NE 51st Street

2) Private development will build complete streets including pedestrian facilities. Key projects include:

- Completion of the new street and pedestrian grid in Overlake Village
- Overlake Transit Center Pedestrian & Bike Bridge
- 152nd Avenue NE Main Street – Phase 1 (East)
- 152nd Avenue NE Main Street – Phase 2 (Completion between NE 24th Street and NE 31st Street)

3) Annual Pedestrian Program will fund completion of high priority pedestrian facility needs. Investment will be focused on completing missing links, improving safety, and providing for needs of the greatest generators of pedestrian traffic (e.g., pedestrian zones, schools, parks, transit stops, and others).



Architectural rendering of the future Overlake Village pedestrian-bicycle bridge



Chapter 4.4: Bicycle System Plan

Introduction

A “Bicycle Renaissance” is emerging in both Redmond and North America. This renewed interest in bicycling has sparked innovation in bicycle facility design and improved understanding of what gets people biking. Redmond will implement these new best practices and attract a broader segment of the population to bicycling as the system is completed. This reinvigoration of cycling in Redmond will help the community live up to its historical nickname as the “Bicycle Capital of the Northwest.”

Through decades of investment, Redmond has developed many miles of bicycle lanes and paved shared-use paths. The city is at a crossroads with an incomplete, disconnected network which substantially reduces the safety, comfort, and usability of the current bicycle system and is a major barrier to increasing bicycle ridership.

The Redmond Bicycle System Plan will finish connecting and upgrading the bicycle network. Many of these remaining connections and intersection improvements, such as off-street pathways and grade separations, are expensive, but will take advantage of the substantial local and regional network already in place.

The plan prioritizes providing a complete, connected “spine network” of safe, high comfort bicycle facilities that attract a vastly broader segment of residents and employees. As an example, the City of Portland invested into a complete network of high comfort facilities like cycle tracks and paved shared-use paths that resulted in a huge shift in the number of people willing to consider a bike trip. Research in Portland revealed that partially connected and mostly on-street facilities attract only around 10 percent of people to consider a bicycle trip, but roughly 70 percent of people are interested in bicycling on higher comfort facilities.

Strategic Approach to Biking in Redmond

The average trip length for all trips in Redmond based on the 2010 Travel Diary is 2.2 miles. This is a typical trip length on a bicycle and a relatively easy distance to bike if the available facilities between destinations are safe and comfortable for the user. The bicycle strategy to encourage a significant increase in bicycle trips has three main parts: 1) Complete a spine network of high comfort cycling facilities, such as paved shared-use paths, cycle tracks that physically separate the bicyclist from the street and automobile traffic, and bike boulevards on lower volume, lower speed streets; 2) in addition to the spine network, the strategy includes a dense network of on-street facilities that shorten bicycle trip lengths and also act as a feeder system to the spine of high comfort facilities; and 3) finally, abundant access to bicycles through a rental “Bike Share” program, a variety of convenient bike parking options, clearly marked bike routes, and robust education and encouragement programs round out the complete bicycle strategic approach for Redmond.



The four types of transportation cyclists in Portland (by proportion of population).

Most people would consider riding a bicycle if routes were sufficiently safe and comfortable.

Transportation Strategies

The suite of travel choices (walking, bicycling, transit, and automobiles) is necessary to provide an efficient, effective transportation system that accommodates planned growth in the two urban centers. Bicycles are particularly well-suited for short- to medium-length trips and often have equivalent travel times to automobiles in urban centers (especially when finding parking is considered). In addition, both Overlake and Downtown possess a gentle topography, thereby eliminating a major impediment to bicycle travel.

Bicycling is important for supporting light rail ridership. Vehicle parking will be limited due to cost and property impacts, whereas bicycle parking is inexpensive and takes up very little space. Bicycling also significantly increases the number of people that can conveniently access light rail without an automobile. Sound Transit estimates that by 2030, 33 percent of light rail riders will access the Overlake Village station by walking or bicycling (East Link Light Rail FEIS Appendix H1 Table 7-12, East Link Light Rail FEIS Appendix H1 Table 4-11).

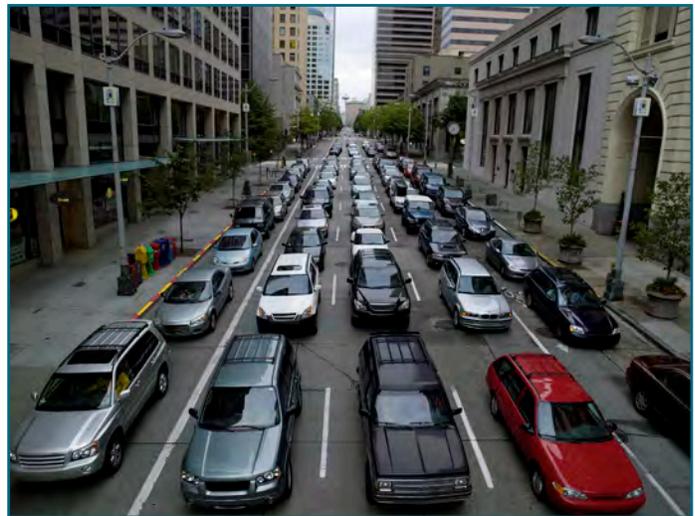


Figure 43. Spatial efficiency (image source: i-Sustain)

The images above (Figure 43) illustrate one of the fundamental challenges we face and why a transportation network with increased reliance on alternative transportation modes is envisioned: moving 200 people in a two-block space means total gridlock by vehicle (even with five lanes), but only takes one lane width when the same 200 people are riding bicycles

Bicycling is a particularly competitive mode of travel with the automobile when the trip is 2.5 miles or less. Considering that the average trip length in Redmond is 2.2 miles (from 2010 Travel Survey), bicyclists will be able to take advantage of the connected and higher comfort network of facilities that will be developed between now and 2030 for most of their transportation trips. As the bicycle system plan is implemented, numerous new neighborhood connections will help tie neighborhoods together to community services like buses, schools, and parks, and also link to the urban centers.

Table 5. Bicycling is one of the least costly forms of transportation.

Transportation Costs by Mode	
Mode	Cost per Mile
Car	59¢
Transit	24¢
Bicycle	5¢
Walking	0¢

Citywide Guiding Principles

Bicycling can increase economic vitality by decreasing household transportation expenses as shown in Table 5 at right.

Increasing overall bicycle ridership also results in a relatively safer biking environment by decreasing the rate of bicycle collisions (see Figure 44). Therefore, Redmond will provide high

comfort bicycle facilities that attract additional bicycle riders as a community investment in both economic vitality and safety.

Bicycling also improves personal and public health. Bicycles are people-powered transportation (“active transportation”) that get people out exercising, providing a plethora of health benefits from heart health to combatting obesity. Bicycling and walking are the only forms of travel that can include exercise while commuting.

Finally, bicycling supports environmental stewardship because it significantly reduces air and water pollution. Reducing emissions from transportation is the best method to reduce overall air pollution – 50 percent of carbon emissions come from transportation in our region.

Bicycle System Development

High Comfort Bike Facilities (“The Spine” Network)

Redmond will build a complete bicycle system of safe bicycle facilities that enables a broad array of the population to bicycle safely and comfortably to key destinations. Bicycle ridership will also be supported by access improvements, including bicycle parking, bicycle-sharing programs, and bicycle education and encouragement.

The uppermost tier of bicycle facilities, “High Comfort Facilities,” will attract a wide variety of users and encourage increased bicycle ridership because of physical separation from automobiles. Figure 45 (below) depicts a one-way separated cycle track, providing physical separation from automobiles and incorporating green bicycle lanes that highlight potential conflicts and encourage caution for drivers and bicyclists.

This backbone network of high comfort bicycle facilities (as shown in Figure 6, Bicycle “Spine Network” Map) has the greatest priority for high safety and comfort corridors and intersection crossings. Today 37 percent of the “Spine Network” is complete, largely through existing paved, shared-use paths, and is anticipated to reach 51 percent completion by 2030 and include investments like cycle tracks on Avondale Road and enhanced bicycle facilities on Old Redmond Road. High comfort corridor facilities (running the length of a corridor link) include:

- Paved, Shared-Use Paths. These are independent of the street network, providing significant physical separation from vehicles.
- Cycle Tracks. These are integrated into streets, but provide physical separation from automobiles and can be particularly effective when vehicle speeds and/or volumes are high.
- Greenway/Bicycle Boulevard. These low-automobile-volume streets include bicycle-supportive traffic calming, keeping automobile speeds low to ensure a safe, comfortable mixing of bicycles and automobiles.

High comfort facilities will provide positioning guidance for bicycles up to the stop bar at

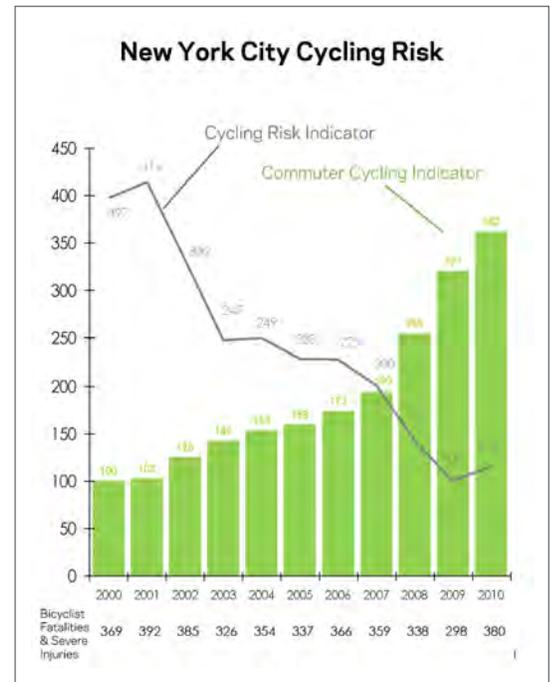


Figure 44. Collision rates have decreased by 71 percent in New York City as commuter bicycling rates tripled.



Figure 45. A cycle track. Image source: NACTO

Bicycle Modal Corridors

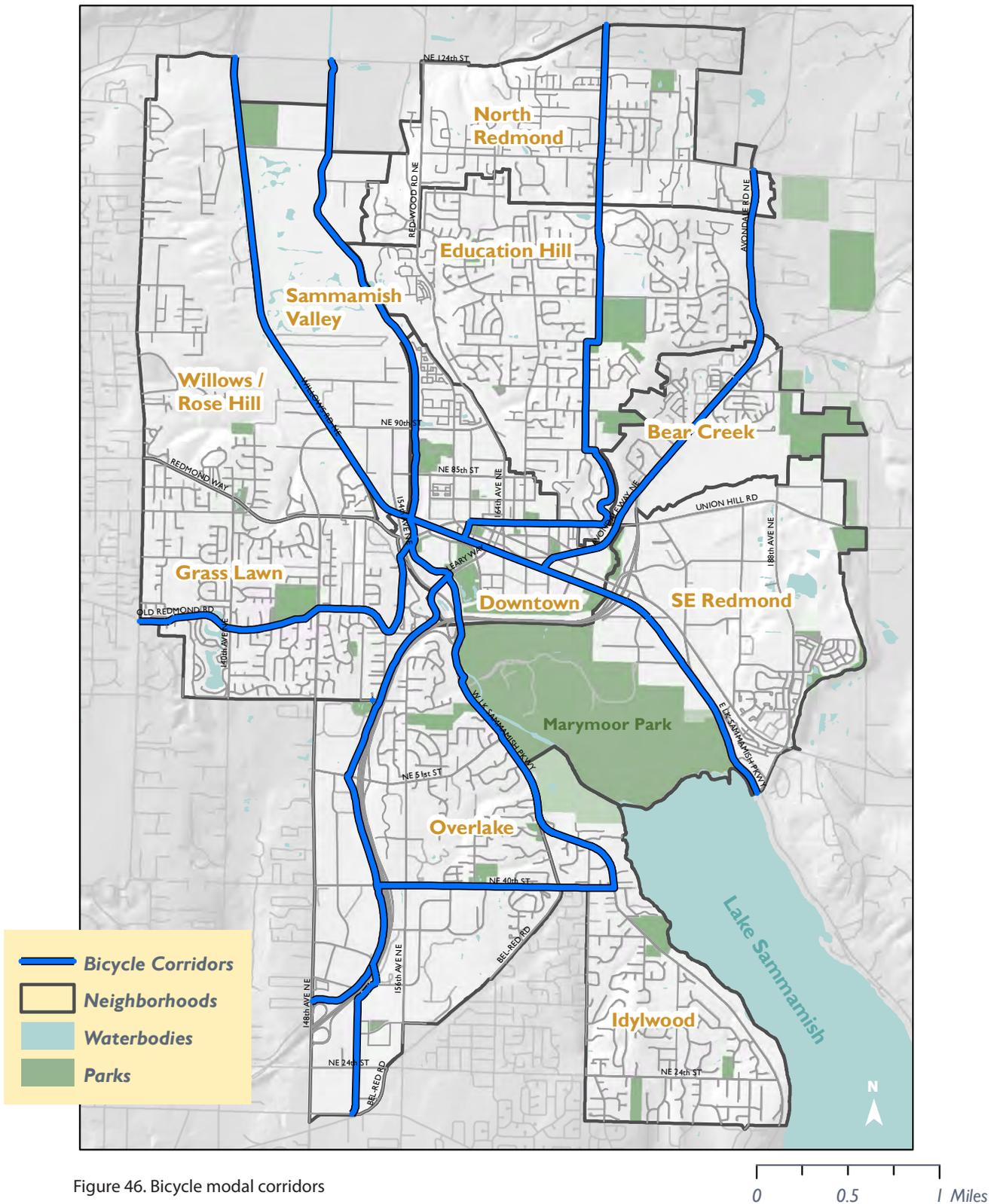


Figure 46. Bicycle modal corridors

intersections, with a priority for a dedicated zone up to the stop bar. Bicycle treatments through an intersection (see Figure 47) are recommended in order to best position bicycles and automobiles through an intersection, reducing conflicts with drivers and providing bicyclists with a safe and comfortable experience. Appendix F includes detailed design guidance for corridor (Table 4: Tier 1 High Comfort Bicycle Facilities) and intersection bicycle facilities (Table 7: Intersection Bicycle Facilities).

The Bicycle System Map details bicycle corridor facilities that will be built with City capital improvements and/or conditioned on adjacent development. These include specific high comfort facilities where currently considered feasible and two other tiers of bicycle facilities: standard and guidance bicycle facilities.



Intersection treatment (image source: NACTO)

Dense Bicycle Facilities Network Connected to Key Destinations

Standard bicycle facilities complete a dense bicycle network that connects to destinations like offices, homes, schools, restaurants, and parks citywide. These facilities ensure route directness and also act as feeder facilities for high comfort bicycle facilities. Standard facilities provide a designated space for bicyclists in the street corridor, but without physical separation from automobiles. The typical standard along a corridor bicycle facility is the bicycle lane. As bicyclists continue along a corridor and approach intersections, standard bicycle facilities should provide continued guidance up to intersection stop bars. Appendix F, Table 5: Tier 2 Standard Bicycle Facilities includes detailed design guidance.

At the lowest tier, guidance facilities are street treatments that help position bicyclists in shared lanes with automobiles and/or provide guidance on how to proceed forward. Shared lane markings, also called “sharrows,” are typical guidance facilities. Appendix F, Table 6: Tier 3 Guidance Bicycle Facilities provides further design guidance.

Bicycle Parking

Bicycle parking and storage is a necessary component of the Bicycle System Plan to make cycling an attractive transportation option. Bicycle parking that meets both short-term and long-term bicycle parking needs is also necessary to support biking in Redmond. Short-term parking allows a bicyclist to find a parking spot quickly for fast stops such as shopping or buying lunch. It needs to be located as close as possible to building entrances in a visible location. Weather protection for short-term parking is appreciated by bicyclists, but is not a necessity.

Long-term bicycle parking provides a place to store a bicycle while at work or at home. Security, such as bicycle cages with access limited by a key, is paramount for successful long-term bicycle parking. Since bicycles will be parked for a long time, weather protection is preferred.

City capital projects and programs will install bicycle parking, but the bulk of new short-term and long-term bicycle parking will be provided by new development. Bicycles will also access light rail in high numbers if enough secure long-term bicycle parking stalls are provided supporting light rail ridership.

Bike Share

“Bike sharing is an innovative approach to urban mobility, combining the convenience and flexibility of a bicycle with the accessibility of public transportation. Bike share systems consist of a fleet of bikes provided at a network of stations located throughout a city. Bikes are available on demand to provide fast and easy access for short trips.” (from pugetsoundbikeshare.org homepage)

Redmond is a charter member of the Puget Sound Bike Share, which is a partnership of cities, agencies, and businesses within King County. The vision is to provide residents, employees, and visitors access to a low-cost, flexible, and convenient transportation alternative with economic, social, and environmental benefits to Redmond and the region. The first installations will be installed in Seattle in 2014. In Redmond, bike sharing will be provided in the two urban centers, beginning as soon as 2015, and at future light rail stations

Bike share systems exist in over 200 cities worldwide, with over 30 systems in North America including Boston, Denver, and Chicago. These systems have been successful in increasing bicycle mode split by making bicycling more convenient and encouraging an abundance of bicycle trips throughout the day. Shared bicycles also act as an extension of transit trips, providing important last mile connections that make alternative transportation trips more successful. Lastly, bicycle share programs provide a great opportunity for recreational bicyclists to try out utilitarian bicycling.

Education and Encouragement

Many residents and employees have simply never tried bicycling for utilitarian transportation trips, and could benefit from both education and encouragement to try utilitarian bicycling for the first time. Education on how to ride a bicycle on all facility types will also help new bicyclists ride safely and confidently. Campaigns, classes, events, and promotions will help educate and encourage citizens and employees to consider bicycles for transportation as well as recreation trips. This will also create a self-sustaining program, as more cycling advocates are willing to educate their friends, family, and coworkers about how to ride safely day and night throughout the year and to encourage them to get out and try bicycling.

Protected, long-term bicycle parking is important for regular cyclists.

Bicycle Wayfinding

Bicycle wayfinding signage along with internet applications will be implemented to help guide users through the bicycle network in a safe, efficient manner. While many residents and employees have a mental map of the automobile network, they do not have a similar sense of the available bicycle network. This increases fear that traveling by bicycle is challenging and confusing. Wayfinding signage will help bicyclists navigate the bicycle network and ensure that bicyclists riding Redmond's network for the first time are directed to travel on the safest and most direct routes to their destination.

Prioritizing Investments to Increase Biking in Redmond

Redmond will invest in bicycling infrastructure through City capital investments, Redmond's Bicycle Program, grants, partner agencies, and private entities. City capital investments, partner agencies, and private entities will build bicycle improvements in the vicinity of specific projects or new development. The Bicycle Program will prioritize investments and leverage grants based on completion of the spine network, significant gaps and "bottlenecks" that create particularly unsafe situations, and feeder connections with the highest anticipated bicycle ridership. In addition, education and encouragement will be



Nice Ride bike share system in Minneapolis, Minnesota

a relatively small, but important investment to increase bicycle ridership. The performance monitoring chapter outlines how investments into bicycling will be measured in terms of increased bicycle ridership and completion of the Bicycle System Plan.

Implementation

The bicycle system will continue to evolve into the envisioned plan that provides:

- 1) A complete, connected spine network of safe high comfort cycling facilities;
- 2) A dense, connected network of on-street facilities; and
- 3) Abundant access to bicycles through supporting programs and facilities.

This evolution requires a number of steps. The first is Three-Year Action Plan item 13: Bicycle Facilities Design Manual Update which will review and update standards for high comfort facilities like cycle tracks and intersection treatments. The updated standards will then be applied to the design of future facilities to implement the bicycle plan:

TFP Projects

Improve bicycle infrastructure per updated Bicycle Facilities Design Manual when TFP projects are constructed on the bicycle system (see bicycle system map below)

Key projects identified on the TFP include:

- Redmond Central Connector Phase II
- SR 520 Trail Grade Separation at NE 40th Street
- Overlake Village Ped & Bike Bridge (partnership with Sound Transit)
- NE 40th Street Pedestrian and Bike Improvements from 520 to Bel-Red Road
- SR 520 Trail Grade Separation at NE 51st Street
- NE 116th Street and 172nd Avenue NE Roundabout
- Union Hill Phase III Widening
- 166th Avenue NE Rechannelization
- NE 116th Street Widening Phase I

Private Investment

New developments will upgrade bicycle infrastructure per updated Bicycle Facilities Design Manual when development projects are constructed on the bicycle system (see bicycle system map below).

Key projects identified on the TFP include:

- 152nd Avenue NE Main Street – Phase 1 (East)
- 152nd Avenue NE Main Street – Phase 2 (PSBS and Between NE 24th Street and NE 31st Street)
- Overlake Transit Center Ped & Bike Bridge (ST)
- NE 27th Street/NE 28th Street New Connection
- NE 73rd Street Extension
- NE 80th Street Trail Connection
- 150th Avenue NE and NE 51st Street Traffic Signal

Bicycle Program

Invest in high priority bicycle facilities and supporting programs, particularly high comfort facilities, that fill in the gaps in the bicycle system (see bicycle system map below) that are unlikely to be completed by TFP projects or private investment.

Key projects are likely to include cycle tracks (or other high comfort facility as identified in Action Plan item 12) Avondale Road Bicycle Facilities Study) on Avondale Road, high comfort facilities linking Education Hill to Downtown, extending the Puget Sound Energy Trail west up to NE 93rd Court, and new intersection treatments. Near-term improvements include a bicycle wayfinding system as guided by action plan item 7) Wayfinding Standards for Cyclists and Pedestrians.

Work with Puget Sound Bike Share to implement bike sharing in Redmond.

- Transportation Demand Management Program

Encourage employees and community members to bicycle instead of driving.

Chapter 4.5: Freight Access and Distribution

Introduction

Freight mobility (the physical movement of goods and services) is a critical component of Redmond's transportation system. While large delivery and manufacturing firms rely on Redmond's transportation network, especially at key locations in Southeast Redmond, hundreds of small businesses depend on reliable movement of goods and services throughout the city in order to thrive.

In Redmond, efficient, reliable freight mobility depends entirely on trucks moving over local and regional streets. Manufacturers, large retailers, extraction operations, and warehousing and distribution companies require reasonable access to a well-functioning network of freeways and major arterials. Small retailers, restaurants, and other businesses rely on delivery service vehicles that must circulate on regional and local streets and also must be able to park somewhere near businesses.

Vehicle sizes range widely from small vans to large tractor-trailer units. In recent years, there has been a trend toward larger food and beverage delivery vehicles, while at the same time there has been a trend toward smaller local parcel delivery vehicles.

Compared to the rest of the city, Southeast Redmond has a high concentration of major businesses with substantial delivery needs. These include companies that manufacture construction equipment and materials, regional retail and grocery stores, and mail and package service centers such as UPS and USPS. Downtown Redmond, Overlake, and smaller commercial areas depend on daily deliveries by a wide variety of operators – a relationship that will be key to the economic viability of these areas in the future.

The City completed a Freight Mobility Study in 2009. Based on information from that study, this plan accommodates freight mobility in three ways:

1. Establishes a two-tier freight route system to facilitate reliable connections between Redmond streets and regional routes and facilitate access between major manufacturing sites and Redmond streets. (Though only a portion of Redmond streets, the freight route system forms a complete and connected system.) The intent of establishing the freight route system is that in this system, it is a priority to support truck operations as part of improving, maintaining, and operating streets. Appropriate street design standards (pavement depth, turning radii at intersections, etc.) that are context sensitive to individual streets, will address the needs of truck operations. Outside of this system, truck operations are accommodated. However, supporting truck operations, especially those of large-size trucks, is not a priority for improving, maintaining, and



In Redmond, efficient, reliable freight mobility depends entirely on trucks moving over local and regional streets.

operating streets outside of the freight route system. Instead, other considerations such as keeping narrower and slower streets in residential neighborhoods have priority.

2. Addresses congestion and truck traffic bottlenecks with strategic capital improvement projects.
3. Provides guidance for ensuring accessibility of local delivery services to small retailers, restaurants, and other businesses, especially in the two urban centers: Downtown and Overlake.

Two-Tier Freight Route System

The two-tier freight route system (Figure 1) includes “primary truck streets” and “truck access streets.” Primary truck streets accommodate through truck traffic in Redmond, which are arterials that directly connect with regional roadways; e.g., SR 520, or arterials that currently have high volumes of trucks and expect to remain so in the future. Truck access streets connect the major industrial and commercial area in the Southeast Redmond neighborhood with primary truck streets. The intent of designating truck access streets is to support access and movement of trucks between manufacturing companies and primary truck streets, which are important to the economic vitality of manufacturing companies. However, designating truck access streets is not meant to increase truck volumes on those streets, nor intended to increase the speed of trucks on truck access routes. When making improvements on truck access streets, it is important to integrate the needs of trucks and other users. For example, in some locations in Redmond homes front truck access streets, so it is important to have safe pedestrian crossings across truck access streets.

Primary truck routes include:

- SR 520 from 148th Avenue NE to its terminus at Redmond Way (SR 202)
- Redmond Way from 132nd Avenue NE to West Lake Sammamish Way
- Redmond Way (SR 202) from SR 520 to the east city limits
- Avondale Road from Redmond Way (SR 202) to the north city limits
- Bellevue-Redmond Road from West Lake Sammamish Parkway to NE 20th Street
- West Lake Sammamish Parkway from Redmond Way (SR 908) to West Lake Sammamish Parkway
- 148th Avenue NE from Redmond Way to the south city limits
- West Lake Sammamish Parkway from south city limits (1900 block) to Redmond Way
- NE 51st Street from 148th Avenue NE to SR 520
- NE 90th Street from Willows Road to 154th Avenue NE
- 154th Avenue NE from NE 90th Street to West Lake Sammamish Parkway
- 148th Avenue NE from Redmond Way to Willows Road
- Willows Road from NE 90th Street to the city limit
- NE Union Hill Road for its entire length in Redmond

The following streets within the Southeast Redmond area are truck access routes:

- NE 76th Street from SR 520 east to 188th Avenue NE
- 178th Place NE/180th Avenue NE from Union Hill Road to Redmond Way
- 185th Avenue NE from Union Hill Road to Redmond Way
- 188th Avenue NE from Union Hill Road to Redmond Way



Freight System Plan

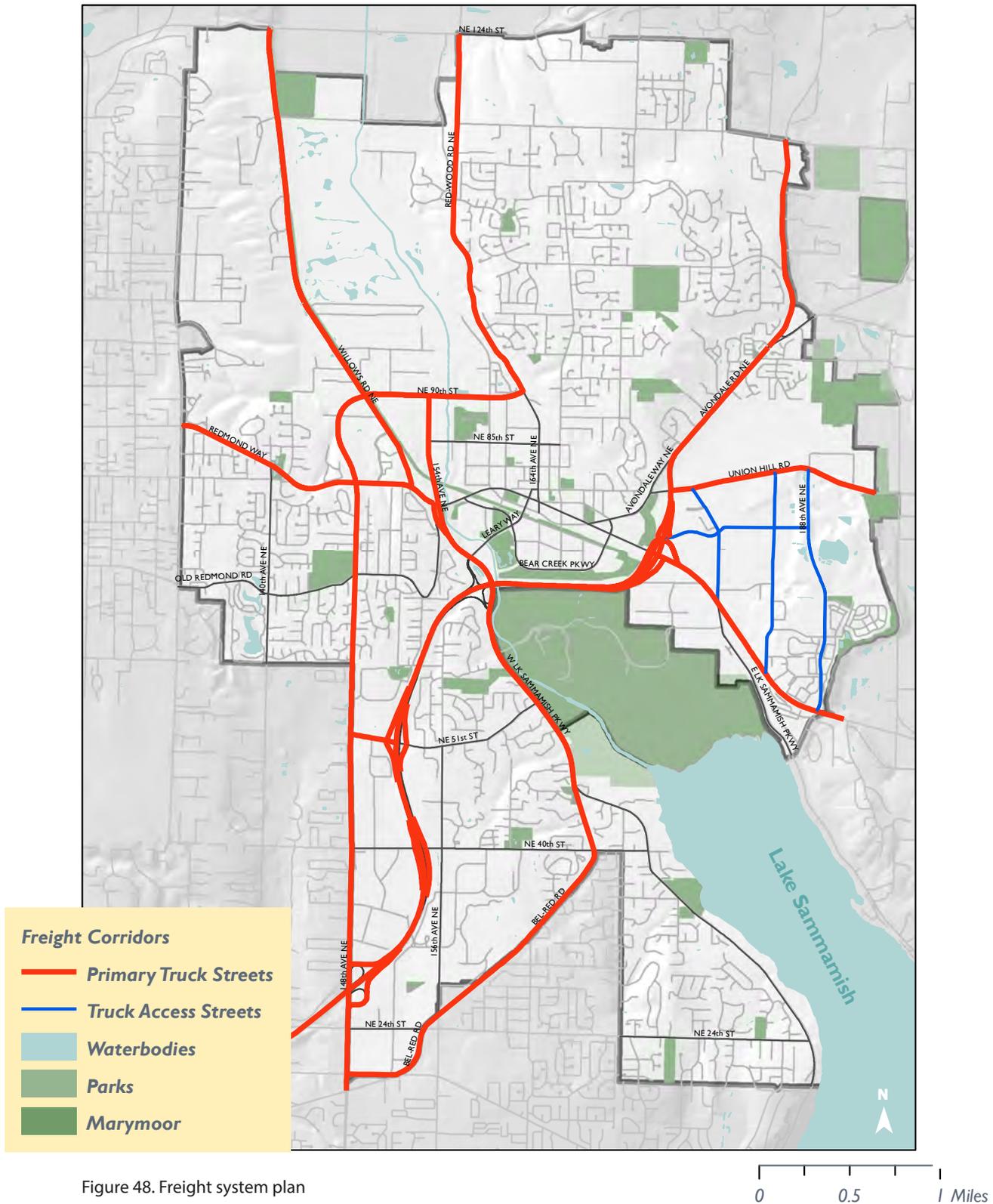


Figure 48. Freight system plan

Implementation

Capital Improvements Addressing Congestion and Bottlenecks

The Buildout Plan addresses congestion and bottlenecks for freight traffic as well as general traffic through intersection and roadway improvements and adding new connections. One example is the Union Hill Road Phase III project, for which the City recently received a grant.

In addition to capital improvements included in the Buildout Plan, Redmond is actively working with WSDOT on the SR 520 Corridor Planning Study. This study will identify improvements at the end of SR 520 in the vicinity of Union Hill Road, which is a bottleneck for trucks from manufacturing companies and the UPS distribution center along Union Hill Road.

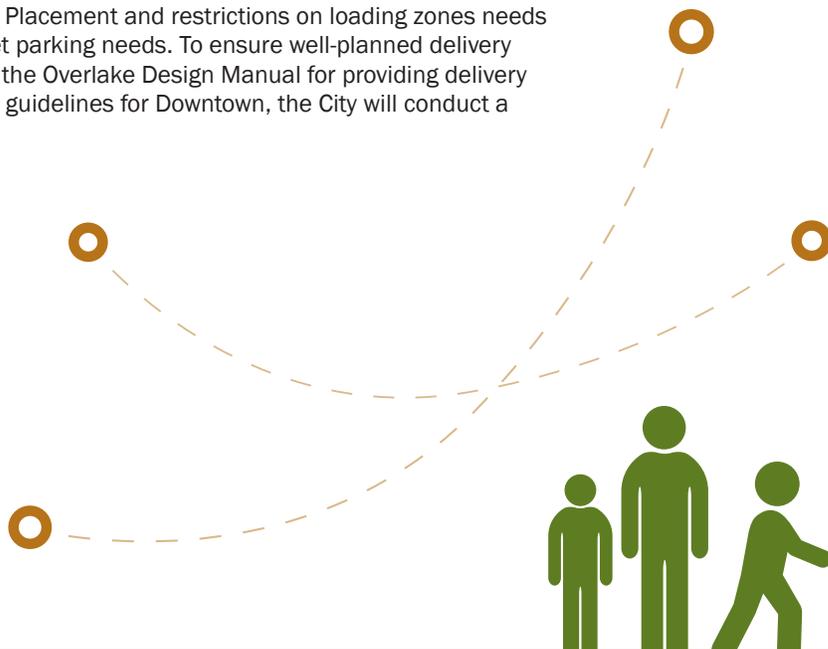
Local Truck Loading and Unloading

Over the past couple of decades, Redmond's retailers, restaurants, office buildings, grocery stores, and a wide range of other businesses have become increasingly dependent on frequent delivery of commodities and parcels. Retailers no longer have significant on-site storage, relying instead on a steady flow of incoming parcels, resulting in significantly lower lease costs for a given amount of active sales floor space. Restaurants increasingly emphasize fresh produce — from fresh fish, to fruits and vegetables, to milk and bread — in their menus, which require multiple deliveries each day. Offices and civic buildings depend on reliable overnight parcel deliveries. Even a small office building may receive deliveries from two or three different services, with each coming one or two times a day.

This steady, high-frequency flow of commodities and parcels throughout the city is essential to the vitality and growth of Redmond's businesses. These delivery services have specific needs, including a highly connected street network to facilitate efficient circulation and the availability of delivery parking near businesses. The need for a highly connected street network was identified and addressed in the City's 2005 Transportation Master Plan, and is also a major focus of this update.

Addressing the need for accessible delivery parking, or truck loading and unloading, is an element of the City's efforts to guide and encourage the development of Redmond's two urban centers — Downtown and Overlake. In addition, as infill development and redevelopment proceeds in these urban centers, the City is working to ensure that alleys, drive aisles, and streets have substantial on-street parking provided as part of the fabric of the centers. Placement and restrictions on loading zones needs to be planned and coordinated with general on-street parking needs. To ensure well-planned delivery access, the City has developed guidelines as part of the Overlake Design Manual for providing delivery parking in the Overlake Village area. To provide such guidelines for Downtown, the City will conduct a parking study as part of the Three-Year Action Plan.

Redmond businesses and customers depend on the steady flow of goods throughout the city.



Chapter 4.6: Parking Plan

Introduction

Redmond is a growing city, with a vision for two vibrant urban centers in Downtown and Overlake. By 2030 the City anticipates growing to a population of 78,000 residents and an employment base of 119,000 jobs, with three-quarters of new residences and two-thirds of new commercial floor area to be developed in Downtown and Overlake. Parking is a key piece of our transportation infrastructure and will play an important role in supporting this growth, providing access for residents, customers, visitors, and employees. The amount, location, and management of parking have significant impacts on economic viability, resulting community character, and the ease of access for residents, visitors, customers, and employees. This chapter provides strategies and actions to proactively address parking's role in supporting and shaping our city, and capitalizes on opportunities to attain our long-term growth, mobility, economic, and land use objectives.



Advancing the Strategies

Support Urban Centers

A coordinated approach to parking that addresses parking supply through “right sized” parking standards and the development of strategic public parking facilities, coupled with proactive parking management that optimizes the value provided by limited parking inventory, is a critical element that supports the growth and development of Redmond’s urban centers. A common problem in developing urban areas is not a deficiency in the total amount of parking that is available, rather it is that high demand parking facilities are full, while other nearby parking facilities are empty. For example, the Downtown Parking Study found that overall there is adequate supply of parking within Downtown. However, this supply had not been actively managed, resulting in high value parking sites being inefficiently utilized, with high occupancy and low turnover rates, while less convenient parking stalls remained underutilized and available.

Managing parking facilities so the most convenient spaces are available to priority uses, such as customers or freight deliveries, and making the parking system easy to understand, supports Redmond as a positive and convenient place to do business, improves the vitality of current business owners, and helps support additional businesses in the future.

There is an opportunity to take strategic steps to reduce the total amount of parking that is required for new development, to increase economic vitality, and achieve the desired growth and development. The cost of parking is significant, up to \$35,000 per space for structured parking, and the amount of parking required can often “make or break” a particular development project. This is particularly important as our urban centers transition from a suburban to a more urban environment, and new development must compete with lease rates from nearby developments with surface parking. In addition, an oversupply of parking wastes resources, and

Parking plays an important role in supporting growth and providing access for residents, customers, visitors, and employees.

limits the amount of land available for more valuable purposes. The Overlake Parking Management Plan found that over 100 acres would be needed if all required parking

Supporting Sustainability and the Natural Environment

Implementing a coordinated approach that decreases the total amount of new surface parking for new development reduces the overall negative impacts on the local natural environment, and supports the City’s environmental sustainability goals. Large surface parking absorbs and retains heat from sunlight contributing to a “heat island effect.” In addition, ground covered in asphalt is impermeable, preventing natural infiltration. This increases total peak runoff during rain events, contributing to erosion, as well as transporting pollutants such as oil, gas, grease, and heavy metals to our local watersheds.

Goals for Parking

As illustrated by the challenges and opportunities above, too much parking wastes resources, increases costs for current and existing development, and negatively impacts the resulting community character, natural environment, and economic vitality. At the same time, a lack of parking availability, or inadequate pedestrian access to parking facilities, limits access to key destinations, businesses, and services, hurting both mobility and economic vitality. Therefore, there are four interrelated objectives that should be addressed by the City’s approach to parking:

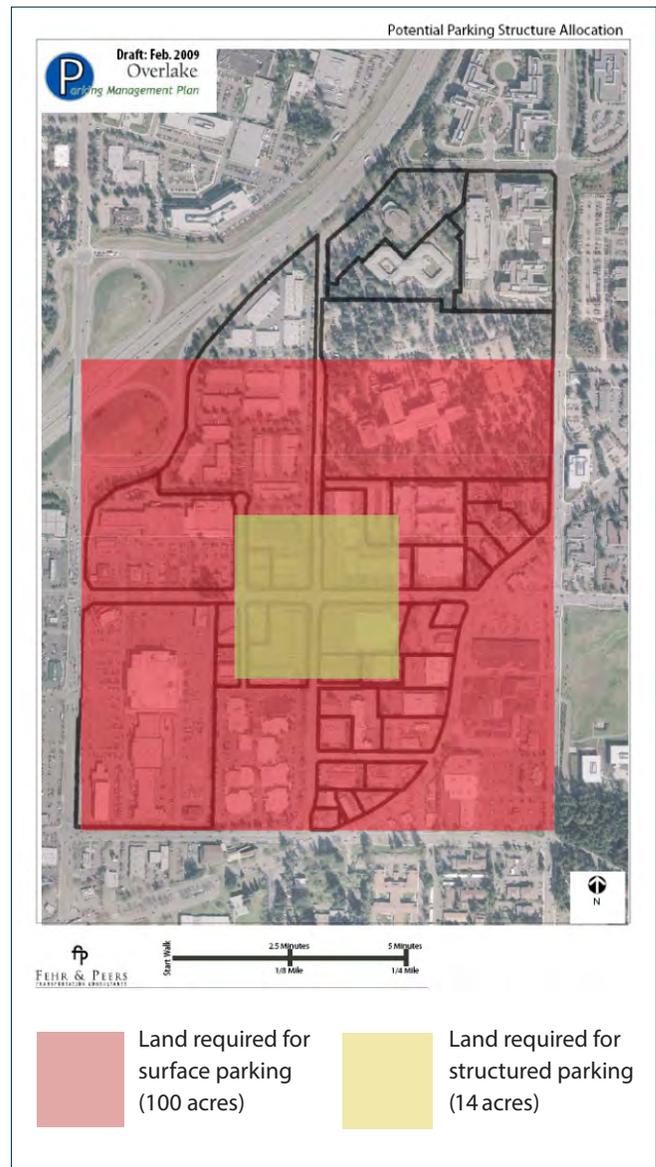
1. Reduce the total amount of parking needed to support development.
2. Seek to establish parking facilities that are designed and located to support our land use vision.
3. Manage parking to support and facilitate access to businesses, services, and residences.
4. Ensure that walking routes to and from parking are safe and comfortable.

The following statement summarizes these four interrelated objectives:

We should seek to have as little land use dedicated to parking as is possible, but should ensure that we have as much parking as we need – designed, located, and managed in a manner that supports our economic, land use, and community character goals.

It is the goal of this parking plan to balance these intertwined challenges and opportunities by implementing the strategies, methods, and actions that:

1. Optimize the use of limited parking inventory.
2. Improve access to businesses by managing short-term and long-term parking, and provide a coordinated strategy for freight access.
3. Support an easy to use and easy to navigate parking system.
4. Balance vehicle parking needs with the City’s land use vision.
5. Provide a clear path for development in our urban centers.



Surface parking requires significant amounts of land.

6. Support existing businesses and recognize that different uses have different parking needs.
7. Anticipate and establish a framework to manage impacts.
8. Incorporate TDM and parking management techniques.
9. Monitor the use and respond to changes in demand or supply.
10. Maintain intended function of the overall system.
11. Respond to community input and needs.
12. Take an integrated approach.

Coordinated parking strategies save money and valuable land.

System Development

Optimizing Parking in Mixed-Use Centers

As Redmond’s urban centers become more dense and walkable mixed-use areas, there is an opportunity to approach parking needs at the area level, as opposed to the individual business or parcel level. In essence, in urban, mixed-use districts, parking should be managed and treated as a utility. The goal of an area-wide strategy to parking is to optimize the utilization of the overall parking resource, facilitate desired new development, support and improve access for customers, residents, employees, and freight in a cost-effective manner, and support a “park once and walk” strategy that reduces traffic and increases pedestrian activity. Many of the parking strategies listed in this section are important tools that help with the successful implementation of an area-wide parking strategy. By considering parking supply and implementation on an aggregate basis, rather than as individual lots for individual parcels or businesses, the City can optimize the use of total parking supply, support more compact development, increase development affordability, reduce overall costs to the community, and take actions that directly and indirectly support the development of our urban centers as walkable places.

Given the unique nature of Redmond’s two urban centers, and the distance between them, the City should implement unique and tailored parking plans for Overlake and Downtown.

Parking Management

Parking management seeks to ensure that as many people as possible have the opportunity to reach their intended destinations and participate in their planned activities, that the use of the available parking supply is optimized and efficient, and that the overall parking system is functioning as intended. Parking management is often implemented through pricing, permits, time limits and designated drop-off, freight, and delivery locations. A key to successful implementation is the prioritization of the parking resource to meet local needs. For example, the Downtown Parking Study found that even though there was enough aggregate parking supply, prime on-street parking spaces were occupied by employees and residents. Visitor parking was perceived as being unavailable for customers and visitors. Through coordinated implementation and enforcement of permits and time limits for on-street parking, the Downtown Parking Management Program sought to prioritize customer access at high demand locations, thereby improving overall access and increasing the economic value provided by the existing parking supply.

One important objective of a parking management strategy is optimizing the “occupancy” rate, or the percent of spaces that are occupied during periods of peak demand. The industry standard is a target of up to 85 percent, where up to 85 percent of on-street parking spaces are occupied. This target maximizes the use of the available on-street resource, while at the same time parking is available to the customer or visitor, and reduces the time and traffic dedicated to drivers searching for parking. Parking management through the issuance of permits and time-limited parking provides an important mechanism to achieve an optimal parking occupancy. For example, in Downtown, by providing a limited number of on-street monthly parking permits, the City gains control of how the on-street system is utilized, and will be in a position to ensure that the 85 percent occupancy standard is met, as well as derive a source of revenue to support ongoing parking programs and strategy implementation.

Another important objective is improving “turnover,” or the number of times a space is used each day, for high demand locations. As density increases, and mixed use development becomes more prevalent in our urban centers, managing on-street parking to prioritize customer access and increase short-term parking turnover at high demand locations allows more customers to reach more businesses, all within available parking resources. This creates an attractive and convenient place to do business for residents and customers, increases the amount of available space that can be dedicated to active and revenue generating uses instead of parking, helps create a vibrant, active pedestrian-oriented place, and supports the economic vitality of Downtown Redmond. This provides an important opportunity to support economic vitality and improve access to local businesses

The City should continue to manage on-street parking resources as valuable infrastructure with the aim of maximizing turnover and economic productivity in high demand locations and facilitating lower turnover and longer term vehicle storage in lower demand locations. New technologies that streamline monitoring of the parking system, and improve real time information and communication to the public, should be explored as the City’s urban centers continue to grow and develop.

Management Tools for Freight Access and Deliveries

Local deliveries and freight access are important to the local economy. Measures should be taken to accommodate local deliveries, such as the identification of specific loading zones, or shorter term time limits, such as 15-minute limited parking that can accommodate both passenger drop-offs and freight deliveries. Spaces can be dedicated for deliveries all day, or during specific time periods when appropriate. In many cases, alleyways or side access to buildings are appropriate zones to accommodate freight and delivery access. In addition, working with local businesses to stage deliveries during off-peak periods, where appropriate and feasible, is an effective strategy to accommodate delivery and freight needs. The City should periodically review the demand for delivery and loading zones, and designation of dedicated loading zones should be done in cooperation with neighborhood businesses, property owners, and residents.

Enforcement

Enforcement is critical for effective parking management implementation. Enforcement requires resources to implement, both in labor and equipment, and the main goal of enforcement is to ensure that the parking system is operating as planned and as needed. Enforced rules should be clear and understandable, and should be designed to support the objectives of the parking system, such as turnover, access for priority users, or reduced “spillover” impacts from other uses.

Shared Parking

Shared parking allows a single parking resource to be shared among different adjacent land uses to take advantage of different periods of peak demand, thereby reducing the total amount of resources that need to be dedicated to parking. This can be a single private lot shared between two nearby uses, or a central “public” parking lot for a neighborhood or district. Shared parking is currently allowed in the Redmond Zoning Code, and can be used by a developer to reduce the overall amount of parking provided by a development. To be successful, parking should be shared between land uses that have

Economic Benefits from Parking Management

The Downtown Redmond Parking Study estimated that each customer spends approximately \$20 per visit and that the parking space turnover rate on average is 3.23 times a day. That equates to \$65 per day times 250 days or \$16,250 per space in annual sales to retailers. Using the 300 two-hour parking spaces in the enforced Downtown Parking area for customers, estimated retail sales would be \$4,875,000 annually. Retail sales tax to the City would be \$41,438 annually.

An employee using the same parking space has a turnover rate of one time per day with an estimate of \$5 retail spending. That equates to \$5 per day times 250 days or \$1,250 per space annually. The outcome accommodates more visitors and customers resulting in positive sales revenue. In addition, managing the city’s existing asset of on-street parking decreases the need of incurring capital costs of approximately \$20,000 to \$50,000 per stall to build new parking.

Local deliveries and freight access are important to the local economy.

nonconcurrent peak parking demand. For example, shared parking between office and retail uses is often successful because the demands for the two uses occur at different times.

Centralized Parking Facilities

In Redmond’s urban centers, there is a growing opportunity to develop and foster centralized parking facilities. Centralized parking facilities treat parking resources like a common utility, and allow parking to be shared among several land uses, such as residential, office, and retail. This reduces the amount of parking necessary for each nearby development. In addition, a centralized parking facility further encourages a “park once” strategy, where a traveler may park once and walk to multiple destinations within the neighborhood or district. Safe, comfortable walking routes are critical for the success of off-site parking, including centralized parking facilities, and have a large impact on the ability of a centralized parking facility to serve nearby uses.

Joint public-private parking partnerships

Joint public-private parking partnerships are often found within mixed-use neighborhoods and seek to reduce the costs of jointly developed private office, retail, or residential uses, or the private development can serve to defray some of the public cost in developing a shared parking facility. These public-private partnerships can occur through a variety of arrangements including:

1. Public acquisition of land and sale or lease of land/air rights not needed for parking to accommodate supporting private use.
2. Private development of integrated mixed-use development with sale or lease-back of the public parking portion upon completion.
3. Through a public development authority or other special purpose entity such as a public facility district created for the project or urban area.

Innovative parking strategies help improve access to transit.

Transit Rider Access and Park and Rides

There is strong demand for parking at transit centers and park and rides that have good regional express transit service. The Overlake Transit Center, Redmond Transit Center, and Bear Creek Park and Ride spaces are at, or over, 100 percent capacity on most weekdays. While the opportunity to expand park and ride stalls within Redmond’s urban centers is limited, actions should be taken to expand parking facilities for transit patrons in strategic areas, such as Southeast Redmond, or through partnerships that use existing parking spaces that are underutilized during the day. In addition, actions that maximize access within available resources, such as designating drop-off zones, and enforcement to ensure that park and ride stalls are utilized by transit patrons, should be implemented.

Customer Information/Legibility

In order to be successful, the overall parking system should be easy to use and understand for the end user. The Parking Stakeholders’ Advisory Committee cited easy-to-access, easy-to-understand parking resources as a key guiding principle. The City should capitalize on the opportunity to support an easy to use parking system through the implementation of “wayfinding” signage within the public right-of-way, as well as through improved online and print materials, and the use of new technologies as they become available.

“Right Sizing” Parking Requirements

“Right sizing” parking requirements seek to set parking minimums, and maximums that balance parking demand and supply, and take into consideration the cost of development and overall space available within a neighborhood.

In particular, minimum parking requirements have a significant impact on the overall cost of development, and the resulting development footprint. The City's vision, especially for Redmond Urban Centers, targets a much higher proportion of employees over time using transportation modes other than driving alone, leading to a situation where the current parking requirements may need to be adjusted downward more commensurate with desired and expected levels of parking demand. For example, the Overlake Parking Management plan found that the parking development standards for Overlake generally support the Overlake vision. However, the study found that the requirements need further evaluation to determine how specific standards can be used to achieve the desired mixed-use development pattern and multimodal travel objectives.



In-Lieu Fees

The City has adopted an In-Lieu Fee program, where a developer can reduce the minimum number of required parking stalls through a fee “in-lieu” of parking. Funds are dedicated toward funding shared public parking facilities within a neighborhood. Often, the in-lieu fee is less than the cost of providing the parking directly, and supports the development of a shared parking resource, where each public space can serve multiple users and multiple land uses throughout the day. As a result of higher turnover and use throughout the day, 100 public parking spaces provided through a fee-in-lieu program can be equivalent to 150 to 250 private parking spaces.⁴

Demand Management

The Transportation Demand Management Plan in this TMP highlights the strategies and actions the City takes to maximize the efficiency of the City's infrastructure to support mobility and economic development. These are implemented in coordination with the overall parking plan, in part to accommodate growth and development while minimizing the amount of parking demand, and associated parking facilities needed. Programs that focus on employee parking demand and programs that focus on urban areas with higher levels of transit access often have more opportunities for successful parking demand management implementation. Parking pricing is an effective transportation management strategy, as well as a parking management tool.

System Implementation Steps

Complete a Public, Shared Parking Facility in the Downtown Urban Center

Provide a “parking product” in the Downtown to create a safe and positive customer experience with parking and the Downtown.

Establish a Shared Parking Resource in the Overlake Urban Center through a Public-Private Partnership

In order to provide a shared parking resource and facilitate the “right sizing” of private segregated parking in the Overlake urban center, work with local property developers to establish a shared parking resource in the vicinity of the North Village Park in the Overlake Village, to serve nearby land uses and the 152 Avenue NE retail corridor.

⁴Victoria Transport Policy Institute <http://www.vtpi.org/tdm/tdm89.htm>

Continue to Implement Parking Management in Downtown

As part of the citywide parking program implementation, continue the successful implementation of Downtown Parking Management, including enforcement, communication, and community outreach. As development occurs and parking demand increases or changes, the performance of the overall program should be monitored; and the Downtown Parking Management Program should be adapted to meet changing needs.

Develop and Implement a Parking Management Strategy in the Overlake Neighborhood

With consultant assistance, monitor and evaluate parking demand in the Overlake Village. Create a parking management program for Overlake that focuses on reducing or, in the long term, eliminating minimum parking standards, and creating a residential parking permit program as needed. Refine parking credits for mixed-use developments.

Coordinate Parking Management with Freight/Delivery Needs

Future development of parking management in Downtown and Overlake Village should evaluate and provide for freight delivery needs and transition strategies as these centers develop. Potential solutions include designating loading/unloading zones that are protected during specific times of day.

Establish Additional Shared Use Parking through Public-Private Partnerships

Establish and support additional shared use parking facilities in Redmond's urban centers and employment areas where appropriate through:

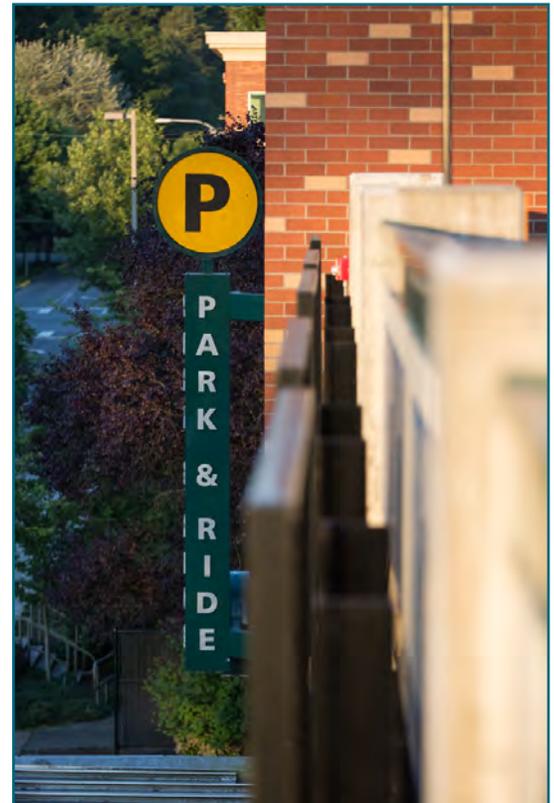
1. The negotiation of shared use and/or lease agreements with owners of strategically placed existing private lots to provide for an interim supply of parking where needed.
2. The lease or acquisition of strategically located land parcels for use as future public off-street parking locations.
3. Partnerships to implement coordinated public parking, with a focus on pay per use pricing, utilizing existing facilities. Elements should include standardized signage and wayfinding to help make the overall parking system easy to use.

Conduct a Parking Study for Downtown, Overlake, and Southeast Redmond

As part of the Three-Year Action Plan (Chapter 8), identify actions, implementation timeline and transition strategies for parking to support development of Overlake, Downtown, and Southeast Redmond. The Downtown element should include an evaluation of the amount and type of parking needed to support access and to create a more pedestrian-friendly environment.

Incorporate Parking in City Planning Processes

As part of the ongoing planning process, the City should include an assessment of the interplay between parking's role in providing access



and sheltering pedestrian zones from traffic, and other needs such as travel throughput for bikes, transit, and vehicles. In particular, attention should be paid to on-street parking requirements, as well as parking minimums, maximums, and design standards for development.

Continue to Develop and Improve Parking Information Materials

Parking information materials should continue to be developed and improved in order to enhance the understanding and access of the City’s overall parking system. Actions should include coordinated wayfinding signage in rights-of-way to direct visitors to off-street locations, and online and print materials. New technologies should be explored to improve the usability and function of the overall parking system.



Develop a Source of Ongoing Funding for Parking Management

Establish a parking fund as a mechanism to direct revenues derived from parking to a dedicated fund for each neighborhood or parking zone. Dedicate all net parking revenues for parking and maintenance operations within the neighborhood or zone and ensure ongoing parking solutions that are financially sustainable.

“Right Size” Parking Requirements

Evaluate adjustments to minimum and maximum parking ratios for new development, to determine specific standards that can be used to achieve the desired mixed-use development pattern and multimodal travel objectives. Assure that access impacts of new development are meaningfully addressed and are correlated to actual parking demand and new or planned shared parking facilities.

Regional Policy Participation

Continue to participate in county and regional forums that address the nexus between parking regulations, mixed use, and transit oriented development.

Work with Local Transit Agencies to Provide Commuter Parking Resources

Continue to work and collaborate with local transit agencies to provide commuter parking resources, such as leasing existing parking for park and ride use, or improved parking management techniques for existing park and ride lots. The City supports the early development of increased commuter supply parking in Southeast Redmond to help “prebuild” the transit market for light rail in Southeast Redmond, and to mitigate increased travel demand along the SR 520 corridor, especially when light rail arrives at Overlake.



Chapter 4.7:

Transportation Demand Management

Introduction

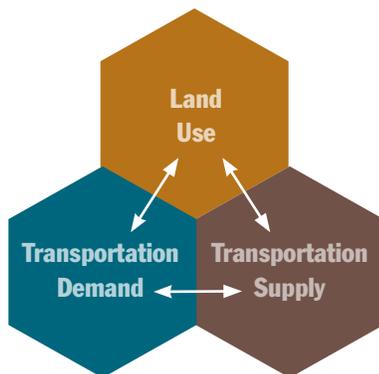
Realizing the City's vision will require an integrated, strategic approach to transportation that manages current and future transportation assets to maximize mobility, increase access, and support growth and development. The City, Redmond businesses, and the community have a strong track record of collaboratively using Transportation Demand Management (TDM) tools to expand mobility and access, improve travel choices, and support continued growth and development. The strategies and actions identified in this plan focus on partnerships, coordinated policies, and innovative tools that leverage this past success, and chart a new direction, to support travel choices, mobility, economic vitality and the growth and development of Redmond's urban centers.



Strategic Approach to TDM

There are three major elements that are part of an integrated approach to transportation planning and implementation:

Transportation Demand Management (TDM) seeks to implement policies, programs, and strategies that proactively manage transportation demand to achieve a balance between Land Use, Demand, and Supply in support of the City's vision. Rather than a replacement for actions that address transportation supply and land use, TDM works in coordination with these actions to achieve the City's vision.



Transportation Demand

The travel needs of people, goods, and services

Land Use

The places people and goods travel to and from

Transportation Supply

The infrastructure used for travel

What is TDM?

Transportation Demand Management (TDM) includes strategies that change travel behavior (how, when, and where people travel) in order to increase transportation system efficiency and achieve specific objectives, such as improved mobility, road and parking cost savings, increased safety, energy conservation, and pollution emission reductions (Victoria Transport Policy Institute).

Redmond's approach focuses on tools, resources, programs, and partnerships that improve access and mobility to support economic growth and community character, and make alternative travel choices easier to use and access.

Traditionally, TDM has been seen as a tool to manage and mitigate peak period congestion. A broader, more integrated approach to travel needs is necessary to support the City's vision. The City's approach to transportation takes a "systems-based" approach that focuses on a broad range of strategies, actions, and outcomes. This approach supports a well-functioning, holistic "transportation system" that supports the City's vision. Using programmatic elements will support a well-functioning system that, in the end, is much more than the sum of its parts. There are three main advantages to TDM that should be leveraged to support a successful transportation system:

Flexible: TDM measures can be adapted to meet a specific need, or for a unique audience or user group. The City regularly partners with local businesses and schools to develop TDM solutions that are tailored to achieve outcomes.

Quick: When compared with capital projects, TDM measures can be implemented quickly, with less lead time. Combined with flexibility, this allows TDM measures to be both timely and responsive to a community travel need.

Cost effective: The costs of TDM measures can be scaled to be appropriate to meet the need in a cost effective manner, and are typically less costly than physical infrastructure projects.

Implementing Innovative Tools to Support Growth and Vitality

The City has an integrated and successful TDM program that focuses on partnerships and collaboration with larger employers and providing outreach and resources to meet travel needs and address travel demand. This has greatly enhanced the person-carrying capacity of the City's transportation infrastructure. For example, the tools, resources, and mobility support provided by the City's flagship Redmond Trip Resource and Incentive Program (R-TRIP) has resulted in increased efficiencies and effective person-carrying capacity equivalent to four freeway lanes of capacity. The City will continue to develop and implement innovative tools, in collaboration with the community, to help increase access and maximize the person carrying capacity of our infrastructure.

Meeting a More Diverse Set of Travel Needs

As Redmond's urban centers and employment areas develop, it is important to address a broader range of travel needs throughout the day in addition to meeting commute needs during the peak travel period. Redmond will expand its approach to TDM to provide support to smaller employers and residents, as well as visitors and customers, in coordination with the City's "Think Redmond" buy local/go local program.

Making Redmond an Attractive Place to Locate and Grow

Cities compete to attract investment that creates and retains jobs. Successful TDM programs reduce transportation costs for new businesses and make workplaces more attractive, key to attracting skilled talent in today's economy. In support of Redmond's broader economic development

Case Study: Supporting Economic Growth in Overlake

Through a comprehensive package of resources, incentives, and partnerships, the majority of growth in the Overlake Neighborhood has been supported by increased bicycle, transit, pedestrian, carpool, and vanpool travel. Overlake grew significantly over the past 10 years, with new commercial and office development.

During the same period use of alternative transportation, particularly transit, increased substantially, and the share of trips taken in a single occupant vehicle dropped from 70 percent to approximately 60 percent. As a result, while there has been strong growth in total person trips, the growth in vehicle demand, and the associated demand on the City's roadway infrastructure, has stayed fairly constant.



Growth in Overlake has been supported by increased transit, bicycle, pedestrian, carpool, and vanpool travel.

Implementation Actions and Priorities

The following section outlines program elements, implementation actions, and new direction for TDM as part of the City's overall approach to transportation.

Develop Tools and Resources for Individual Travel Choices

The City provides creative resources, tools, and incentives for Redmond residents, employees, and businesses through the award-winning and nationally acclaimed Redmond Trip Resource and Incentive Program (R-TRIP), a public-private partnership between the City, local employers, King County Metro, and the Greater Redmond Transportation Management Association. This unique program is actively used by local businesses to manage their own transportation programs, and offers nearly 24,000 employees and residents a one-stop place for resources, travel information, "starter" incentives for transit, vanpool, carpool, bicycling, and walking, and enables users to track and view the impact and benefits of their travel activities. These elements are instrumental in providing improved information, resources, and incentives that make travel choices, such as walking, biking, transit, carpooling, and vanpooling, more accessible and easier to use.

Continue to Implement and Adapt the Redmond Trip Resource and Incentive Program (R-TRIP)

Continuing to leverage the R-TRIP tools to provide information, resources, incentives, and starter fare subsidies will assist the individual commuter starting or joining a vanpool, carpool, or using transit. Key areas for growth for this program are further integration with social media to help expand outreach, and leveraging interactive travel information tools that make alternative transportation choices easier to use, such as OneBusAway, which provides real-time transit arrival and departure information.

Develop Innovative Outreach Materials and Events

The City collaborates with community groups to develop innovative travel information materials, such as Redmond's Bicycling Guide and Transit Map, as well as custom materials for employers, schools, and community groups, to help meet and support travel needs. Through the R-TRIP program, the City also actively engages with employers, employees, and the community at transportation events hosted throughout Redmond. The City should seek additional opportunities to streamline electronic distribution of commute and travel information through online and social media channels.

Provide Transportation Assistance and Resources for Redmond Businesses and Organizations

A key element of Redmond's TDM program is providing tools, resources, and support to businesses and community organizations to develop innovative transportation programs and solutions. The R-TRIP program, described above, provides innovative online management tools that are used by employers and community groups to manage their own transportation programs. This makes the City's investments more effective by leveraging and combining resources, promotes more efficient and entrepreneurial use of transportation resources, and reinforces Redmond as a positive place to do business.

Enhance R-TRIP Online Tools and Management Features to Support Business and Community Travel Programs

The City should continue to develop and improve the online management tools provided through the R-TRIP system. Areas for growth include adapting existing tools to better accommodate residential- and

The City supports an entrepreneurial approach to TDM, with a focus on providing support and resources for local businesses and community organizations to develop innovative transportation solutions.

school-based travel programs, and supporting the implementation for groups of smaller employers, for example, at business parks.

Implement the R-TRIP Grant Program to Meet Community Travel Needs
The R-TRIP Grant Program provides seed funding for new or enhanced commute programs through a grant application process. The City should continue to implement this grant program to meet employer and community travel needs, and should leverage opportunities to coordinate with other City programs and goals, such as grant opportunities for public parking in downtown.

Streamline Regulation in Support of the City's Vision

All new major commercial developments in Redmond are required to implement Transportation Management Programs as a condition of development. In addition, large employers are required to implement the Washington State's Commute Trip Reduction (CTR) program. Both programs support the development of tools and resources for alternative travel choices at individual employment and development sites in Redmond. These programs help support the City's mode split goals, as well as Washington State's Environmental Protection and Growth Management Acts.

Support and Enable Innovative "Private Sector"-Based Solutions

As part of the "Budgeting by Priorities" process, the business community priority highlights the need for Redmond to take an active role in providing efficient processes and proactive support when it comes to regulation. The role of the City acting as a "guide" versus a "regulator" is key to collaborative problem solving. In support of this approach, the CTR and Transportation Demand Management programs should continue to be implemented in collaboration with employers and property owners to develop innovative solutions that are effective at supporting transportation needs, as well as effective at meeting program goals. Flexibility and innovation in achieving desired outcomes should be encouraged, and data and ongoing performance measurement should be used to monitor progress and guide future actions.

Develop Tools to Support Successful Outcomes

Many of the tools provided by the City, such as the R-TRIP program, are actively used by employers and property owners to support successful on-site TDM programs. The City should continue to develop and enhance these tools to provide collaborative, business-supportive resources that successfully streamline implementation of both the State Commute Trip Reduction Program and the City's Transportation Demand Management Program.

Update the Transportation Demand Management Program for Overlake

Redmond's Comprehensive Plan has established a goal of 40 percent or more of peak period trips to occur via alternative travel choices by 2030 for peak period trips in the Overlake Neighborhood (TR-37). The mode-share targets for new transportation management programs in Overlake should be updated to be consistent with this policy.

Commute Trip Reduction (CTR) Law

The Washington State Legislature adopted the Commute Trip Reduction law in 1991, incorporating it into the Washington Clean Air Act. This law affects larger employers (>100 employees arriving during the a.m. peak period) in the state's most populated counties. The goals of the program are to reduce traffic congestion, reduce air pollution, and petroleum consumption through employer-based programs that decrease the number of commute trips made by commuters driving alone.

Transportation Management Programs

Since the mid-1980s, all new major commercial developments in Redmond have been required as a condition of development to implement transportation management programs. The goal of these programs is to achieve a 70 percent or lower rate of commuting by single occupant vehicles. Elements of these programs include on-site information and resources for alternative travel choices, designated carpool and vanpool parking spaces, and ongoing monitoring and measurement of program success.

Coordinate Planning and Implementation to Support Neighborhood Based Outcomes

A holistic, coordinated approach will be critical to achieve Redmond’s vision for its two urban centers. The City is taking a deliberate approach that coordinates economic development, transportation, and growth, through Growth and Transportation Efficiency Center (GTEC) planning, and leverages regional, state, and federal grant matching opportunities that support more efficient focused development within centers.

Develop an Urban Centers TDM Implementation Strategy for GTEC

A framework and implementation plan should be developed for the City’s GTEC program in order to integrate TDM actions with infrastructure improvements, facilitate growth, and maximize the efficiency of transportation infrastructure as Redmond’s urban centers transition from a suburban to a more urban environment. Elements include a performance-oriented commute options program and a consultant-assisted survey of travel options use and opportunities for urban centers.

Coordinate and Support the City’s Parking Strategies

As the City continues to grow and mature, managing the use of both on-street and off-street parking supply will become increasingly important to maintain and increase access to businesses and services. The City should facilitate and support property owner and employer efforts to manage their available parking to balance competing needs (e.g., between employees and customers). New tools and solutions should be developed to address emerging issues, including parking management and parking spillover mitigation, and the transition to lower parking requirements. Redmond’s Zoning Code identifies TDM programs as a tool that can provide flexibility for minimum parking requirements for new development, and model programs and guidelines should be developed to help with the successful and easier implementation of this tool.

Implement TDM Tools in Coordination with Major Construction Projects

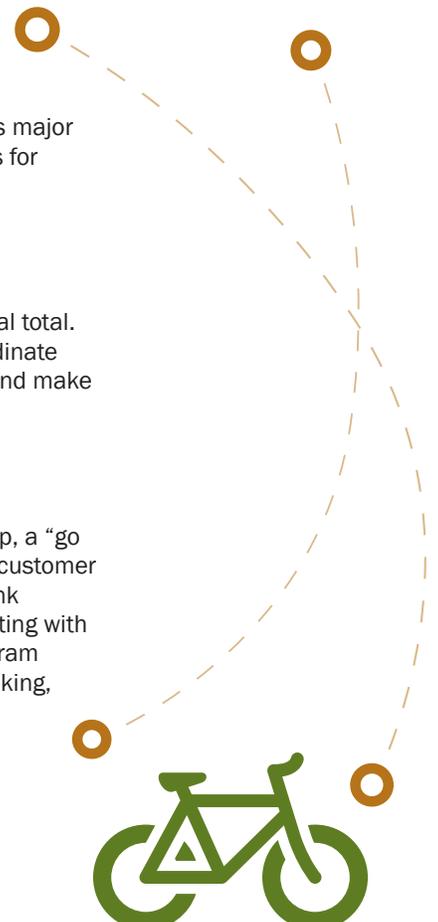
When significant transportation construction affects travel to, from, or within Redmond, such as major road closures, or construction on major highways or freeways, information about and incentives for alternative travel choices should be made available.

Leverage the City’s Economic Development Potential

Redmond is a major employment destination, and its weekday population exceeds its residential total. As part of a broader economic development strategy, there is an important opportunity to coordinate TDM actions and outreach efforts to leverage the economic activity of Redmond’s work force, and make Redmond a great place to live, work, and play.

Support the Think Redmond “Buy Local” Economic Development Program

Encourage reinvestment back into the local economy by using the “Think Redmond” partnership, a “go local, be local” program that promotes Redmond as a destination for customers, and supports customer access by walking, bicycling, carpooling, or taking the bus. Elements include incorporating “Think Redmond”-branded incentives as part of the R-TRIP commuter rewards outreach, and coordinating with cultural events and arts programs that enhance Redmond’s identity as a destination. This program enhances Redmond’s image and identity, inspires customer loyalty, and helps make biking, walking, and transit use viable choices for non-commute trips by actively supporting travel choices.



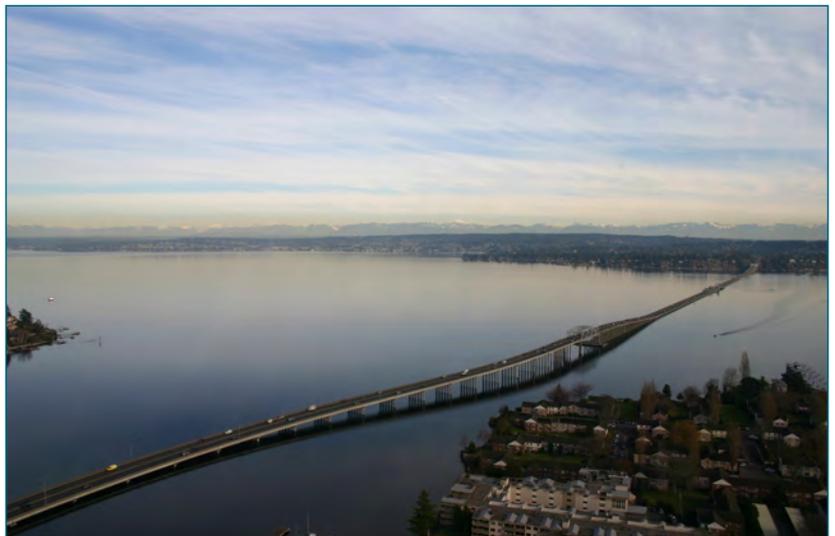
Chapter 5: Regional Transportation

Introduction

Redmond has a two-part role in regional transportation. First, many of the city's transportation facilities are part of the regional travel network. Redmond's streets carry regional pass-through traffic in addition to serving local circulation and access needs. Second, Redmond has interests in and relies on regional transportation projects and services that are the responsibility of other public agencies, including the Washington State Department of Transportation (WSDOT), Sound Transit, and King County Metro. Redmond participates in regional transportation policymaking in a variety of settings, including standing committees (e.g., Eastside Transportation Partnership, King County Regional Transit Committee, and King County Growth Management Planning Council), task forces (e.g., the SR 520 Bridge Replacement and HOV Program, and I-90 Tolling), and representation on major regional transportation policy bodies (e.g. the Puget Sound Regional Council, Sound Transit Board).

This chapter identifies Redmond's regional transportation issues and interests, and the actions needed to support the Transportation Master Plan's (TMP) strategies to prepare for light rail, strongly support urban centers, increase travel choices and mobility, improve neighborhood access, and increase freight mobility. Examples include: supporting Sound Transit 3 planning to extend East Link light rail to Downtown Redmond; implementation of the SR 520 Multimodal Corridor Study, improving regional corridors and increasing access to Redmond's urban centers through better highways, streets, and trails; more effective transit connections between regional transit and jobs and housing, eliminating gaps in transit service between neighborhoods; and greater use of technology for the movement of people, freight, and goods. These actions also support the achievement of the City's vision.

The intent of this chapter is to support Redmond's elected officials, staff, and community members as they advocate for the city's regional transportation interests and build strong, effective regional partnerships. A regional transportation system that functions efficiently is critical to the economic vitality of Redmond and the region. After identifying the city's issues and interests in the next section, the chapter concludes with recommendations for advancing these as part of the TMP's Three-Year Action Plan.



Regional Transportation Issues and Interests

Redmond's key regional transportation issues and interests are contained in this section and are divided into the following issue areas: Corridors; Public Transit; Funding, Planning, Maintenance, and

Security; The Environment and Sustainability; Parking; and Technology. The following table summarizes the TMP strategies supported by each issue area.

Table 6. Support for TMP strategies

Issue Areas	TMP Strategies				
	Prepare for light rail	Support urban centers	Improve neighborhood access	Increase travel choices and mobility	Improve freight mobility
Corridors	X	X	X	X	X
Public transit	X	X	X	X	
Funding, Planning, Maintenance and Security	X	X	X	X	X
Environment and Sustainability		X		X	
Parking	X	X		X	
Technology		X		X	X

Corridors

Critical corridors that provide regional access to Redmond for commuters, residents, visitors, and movers of freight and goods include SR 520, I-405, I-90, and Eastside arterials. Regional trails along highways and in separate rights-of-way are also critical corridors that provide bicycle and pedestrian access to the city for commuters, residents, and visitors. Achieving Redmond’s interests as described below would support all five TMP strategies.

SR 520

The 12.8-mile SR 520 corridor is Redmond’s primary regional transportation connection linking the city with the University District and Downtown Seattle. SR 520 is a prime corridor for new development which will create high-paying jobs and help grow the state’s economy. Redmond’s adopted Comprehensive Plan accommodates significantly higher-density residential and employment growth along portions of the corridor.

Investments in the SR 520 corridor will improve travel comfort, reliability, safety, and transit connections. The investments include: the new SR 520 bridge, continuous high occupancy vehicle (HOV) lanes, new freeway lids, rebuilt interchanges, a complete bicycle and pedestrian trail, and increased transit service across the SR 520 bridge to complement tolling. The new SR 520 bridge (with some modifications) will be able to accommodate a future light rail alignment.

The state legislature set the cost of the SR 520 Bridge Replacement and HOV Project improvements at \$4.65 billion (2009, excluding light rail). With \$2.43 billion in secured funding for the new SR 520 bridge and Eastside improvements, the state is working to identify additional funding of \$2.22 billion to complete planned improvements in Seattle. Furthermore, funding will be necessary for projects identified in the SR 520 Multimodal Corridor Study discussed below.

Issues and Redmond’s Interests

Complete funding for the SR 520 Bridge Replacement and HOV Project

Additional funding is needed to build the section of the project in Seattle between I-5 and the west approach to the new SR 520 bridge. Projects in this segment include additional vehicle lanes, a new

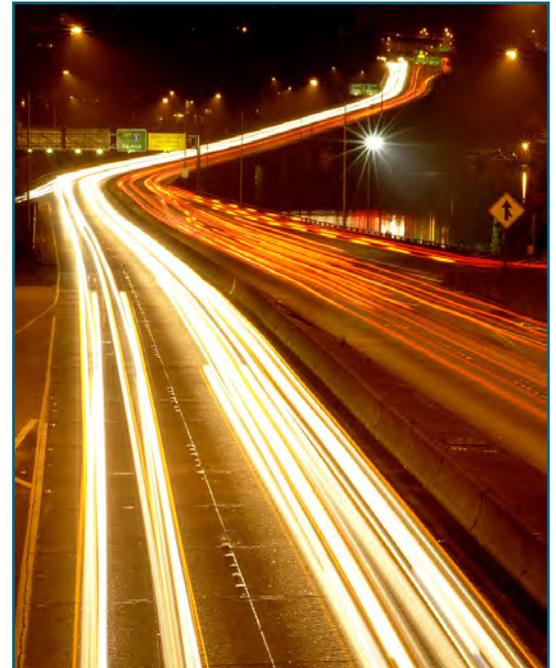
State Route 520 is Redmond’s primary regional transportation connection.

SR 520/Montlake interchange, a bicycle and pedestrian trail, and arterial transit stops, some of which connect with the University of Washington Husky Stadium Central Link light rail station.

Complete and Implement the SR 520 Multimodal Corridor Study between I-405 and Avondale Road

Build identified projects over time including:

- The Overlake Access Ramp and Trail Connection at the SR 520/148th Avenue NE interchange and the remaining half of the SR 520/124th Avenue NE interchange in Bellevue to provide critical safety and mobility improvements.
- Grade separation of the SR 520 bicycle and pedestrian trail at NE 40th Street, NE 51st Street, 148th Avenue NE, and through the SR 520/I-405 interchange. This will significantly decrease conflicts between bicycles, pedestrians, regional transit service and vehicles; decrease delay for all modes; and improve access and connectivity to multiple job centers.
- Grade separation of the East Lake Sammamish Trail at the SR 520/SR 202 interchange. Completion of this trail would fill in the final missing link creating a continuous regional trail from Ballard to Issaquah around the north end of Lake Washington.
- Final design for the eastern terminus of the SR 520 corridor in Redmond.
- Related to this corridor study, the City supports additional engineering analysis to determine:
 - Timing of transition from 2+ to 3+ person use of the HOV lanes and their optimal location (inside or outside lanes).
 - Need for HOV direct access connections with the local street network.
 - How to efficiently and effectively manage traffic on the SR 520 corridor, especially through the SR 520/I-405 interchange.



SR 520 High Capacity Transit Plan

Implement the *SR 520 High Capacity Transit Plan*. A key element of this plan for Redmond's interests is the development of the Montlake Multimodal Center and the Evergreen Point Freeway Station (as part of the *SR 520 Bridge Replacement and HOV Project*). The Evergreen Point Freeway Station will become the main transfer point between the Eastside, Downtown Seattle, and the University District. The plan states that good transfer connections, including rider amenities, such as real-time bus arrival information, high service levels, and a well-designed transit station at Evergreen Point Station, are necessary for quality transit service.

Future high capacity transit in the SR 520 corridor

Support Sound Transit's study of Link light rail transit between Redmond, Kirkland, and the University District as identified in Sound Transit 2.

I-405

While Redmond's primary regional transportation connection is the SR 520 corridor, the City supports continued implementation of the I-405 Corridor Program approved in 2002. The \$10.9 billion (2002) plan calls for a range of both transportation capital projects and services for the 30-mile corridor between Renton and Lynnwood, including: adding up to two new lanes in each direction; developing a BRT line with stations and expanded transit centers; improving key arterial streets; creating 1,700 new vanpools; building 5,000 new park and ride spaces; building eight new bicycle and pedestrian crossings over the freeway; and increasing local transit service by up to 50 percent.

As of 2012, over \$1.5 billion in projects have been completed in Kirkland, Bellevue, and Renton. These include construction of auxiliary and general-purpose lanes, braided ramps at the I-405/SR 520 interchange and a new I-405/NE 10th Street Bridge. Further projects are under review, and projects on SR 167 (through Kent and Auburn) and SR 512 (between Puyallup and Tacoma) are under consideration as additions to the *I-405 Corridor Program* paralleling I-5.

Issues and Redmond's Interests

Fund I-405 Corridor Program projects and services

Support continued funding of planned corridor projects and services that provide critical mobility and safety improvements. Ensure that planned projects bring I-405 up to current environmental standards. Support Sound Transit 2 (ST2) study of bus rapid transit in the I-405 corridor to examine service and capital improvement needs and identify opportunities to enhance service and connections to Redmond. Of particular importance is a funding plan that allows for planning, designing, and constructing a complete interchange at I-405 and SR 520 which is currently a current bottleneck for HOV, transit, and general purpose traffic on SR 520.

Freeway-to-freeway HOV connections where strategically needed

Full freeway-to-freeway HOV connections, particularly in the critical SR 520/I-405 interchange area, carry significant expense and would have major visual impacts on surrounding neighborhoods. These connections should be considered and compared to other capital improvements and prioritized in light of other needs.

I-90

As part of the Sound Transit East Link Project, the existing I-90 two-way HOV lanes will be relocated to the outer roadways in both directions between Seattle and Bellevue. This will allow the East Link light rail alignment to be located in the center roadway. In another section of I-90 between Bellevue and North Bend, WSDOT completed the *I-90 Bellevue to North Bend Corridor Study* to identify short- and long-term projects to address safety and mobility over the next 20 years. I-90 is not only the state's key east-west corridor connecting western and eastern Washington, it is also identified in ST2 as a study area for the future extension of high capacity transit between south Bellevue and Issaquah.

Issues and Redmond's Interests

Implementation of ST2

Support relocating the I-90 two-way HOV lanes to the outer roadways and construction of the East Link light rail line in the center roadway.

Improvements to I-90 east of Bellevue

Support consideration of a potential future high capacity transit line between Seattle and Issaquah as part of a subsequent phase of the Sound Transit Link light rail system. Support identification and consideration of funding for projects yet to be identified that improve highway, transit, HOV lanes, freight operations, and projects that increase seismic safety and reduce natural hazards (landslides).



Tolling

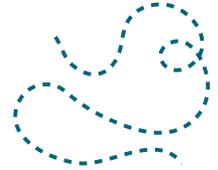
Support concurrent tolling of I-90 and SR 520 to fund capital improvements, manage traffic operations to reduce congestion, and minimize diversion of traffic to other highways and arterials.

Eastside Arterials

In addition to the SR 520, I-405, and I-90 corridors, Redmond's arterials also provide connections between the city and regional destinations, especially to east King County and Snohomish County. Arterials such as Willows Road, Redmond-Woodinville Road, and Avondale Road are used by drivers as alternatives to congested highway corridors such as I-405. Other Redmond arterials are significantly impacted by regional pass-through traffic. These include 148th Avenue NE, Bellevue-Redmond Road, Union Hill Road, West Lake Sammamish Parkway NE, and many streets in Downtown Redmond and Overlake. Residential neighborhoods are adjacent to most of these streets, and many streets pass through important local commercial areas. For Redmond the challenge is ensuring that arterial corridors are well-designed and compatible in scale with the City's land use and community character goals.

Miles of Trails

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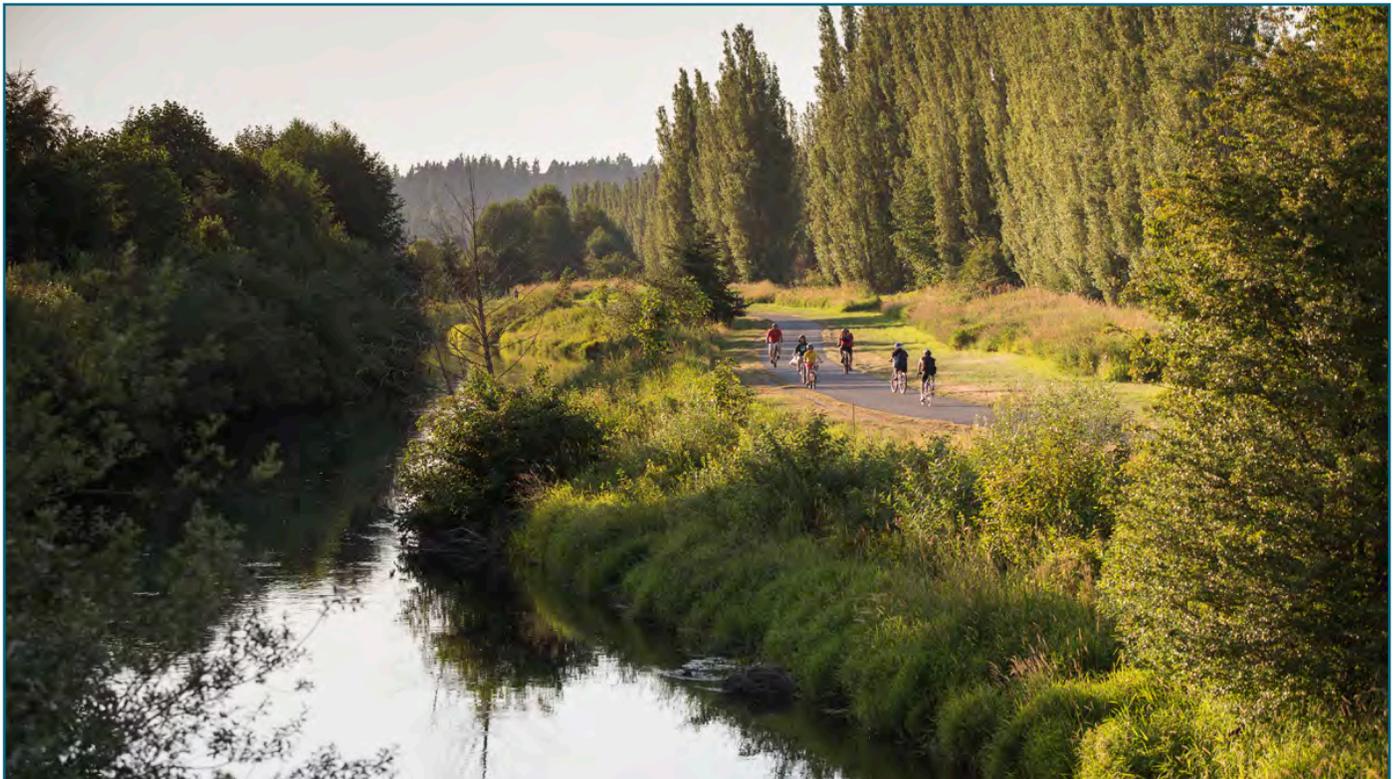
Issue and Redmond's Interest

Manage access to and through Redmond

The City does not believe it can or should mitigate continued traffic growth from suburban and rural areas in east King County, particularly those outside the urban growth area boundary. Continuous expansion of Redmond's arterials to compensate for an insufficient network of regional roadways outside Redmond is detrimental to the city's community character and quality of life. For this reason, Appendix D calls out the maximum number of traffic lanes for each corridor beyond which the local street arterial system will not be widened. The City supports limited expansion of local streets and highways to accommodate regional traffic, consistent with the Buildout Plan.

Regional Trails

The TMP's street, bicycle, and pedestrian modal plans identify how Redmond plans to provide for the access, circulation, and mobility needs of bicyclists and pedestrians. The modal plans identify



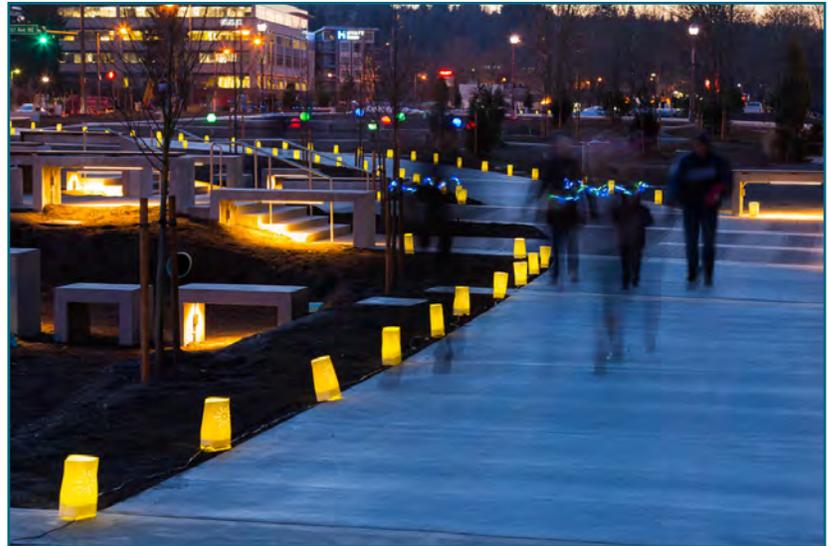
connections both as part of the street network and as separate trails that connect local and regional destinations. Existing regional trails in and around Redmond include the Sammamish River Regional, East Lake Sammamish, Tolt Pipeline, Redmond/Puget Sound Energy, Bridle Crest, SR 520, Evans Creek, and Bear Creek trails.

Issues and Redmond's Interests

Redmond Central Connector

The City is currently developing the Redmond Central Connector, a multimodal corridor within the former BNSF right-of-way through Downtown Redmond and along Willows Road. The Central Connector provides a link to local and regional parks and trails, accommodating existing and planned City and regional public projects. The City's interest is that the Redmond Central Connector includes the following features consistent with the adopted master plan:

- Extend to the north city limits and tie in directly with BNSF trail/Kirkland cross town corridor
- Pedestrian-oriented connection that accommodates bicycles in Downtown and a bicycle-oriented facility outside of Downtown that links to the Bear Creek and East Lake Sammamish regional trails to the east and the Sammamish River Trail to the west in the near term, eventually extending north to NE 124th Street and tying into the Cross Kirkland Corridor.
- Access to park space that activates Downtown, providing opportunities for art and community engagement.
- Existing and future utility easements by Puget Sound Energy, Cascade Water Alliance, and King County.
- The City's regional stormwater trunk line, low impact development infiltration opportunities, and accommodation for other existing and proposed City utilities.
- Planned north-south street crossings and bicycle and pedestrian connections to be developed by the City and private developers.
- The extension of East Link light rail to the terminus at the proposed Downtown Redmond Station.



Bicycle and pedestrian connections between Redmond and Seattle

The *SR 520 Eastside Transit and HOV Project* will extend the SR 520 Trail for bicyclists and pedestrians to connect with the new SR 520 bridge and Montlake interchange. However, a portion of the trail in Bellevue is located outside the SR 520 right-of-way, on circuitous arterial streets around the SR 520/I-405 interchange. The City supports a direct connection of the trail within the SR 520 right-of-way through the SR 520/I-405 interchange. In addition, the City supports full grade separation of this important regional trail from Redmond to Seattle including 148th Avenue NE, NE 40th Street, NE 51st Street, and Leary Way. These grade separations are also included in the SR 520 Multimodal Corridor Recommendations.

To support growth, mobility, and to make transit a real travel choice, transit service must connect Redmond's neighborhoods to urban centers and urban centers to the region with frequent, all-day service.

Safety for bicyclists and pedestrians

Ensure that bicycle and pedestrian facilities located on city streets, in separate alignments and connecting to freeways, are well marked and safe. Grade separate regional trails crossing arterial streets to reduce conflicts between vehicular traffic and bicyclists and pedestrians. In addition to the SR 520 Trail, grade separate East Lake Sammamish Trail through the SR 520 and SR 202 interchange and where it crosses over Bear Creek.

Public Transit

Public transit connects Redmond residents, jobs, and visitors with the rest of the region, operating on local streets and regional corridors to provide mobility and access for people to get to a variety of locations. Transit also provides walking and biking access to regional trails and local paths that are adjacent to or within a short walk of bus routes.

In Redmond, driving and transit are two key travel options. Should someone choose to drive from Redmond to Downtown Seattle, the trip route is typically by way of the SR 520 freeway, which is relatively open except during congested morning or afternoon rush hours. However, should one choose to travel by bus, the trip can become more complicated; transit options range between limited (only during morning and afternoon peak hours) to frequent all-day service, with access to transit routes varying by neighborhood. Transit riders may have a one-seat ride, or may need to drive or transfer to other bus or rail lines to reach their destination. As identified in the *Comprehensive Plan* and *TMP Strategies*, Redmond needs transit service that is competitive in terms of travel time, reliability, comfort, and convenience with driving.



The Transit section of the TMP identifies issues and interests that are focused on improving transit service to more effectively meet the mobility needs of the community consistent with four TMP strategies: preparing for light rail, support for urban centers, travel choices and mobility, and neighborhood access. General transit issues and interests are identified next and are followed by two subsections that do the same in relation to transit services provided by King County Metro Transit and Sound Transit.

General Transit Issues

Transit services must:

- Provide very frequent all-day service and connections that are necessary to support the Downtown Redmond and Overlake urban centers. These urban centers are focal places for jobs and housing and are where additional residential and employment growth will be concentrated. Frequent service from downtown Redmond and Overlake to downtown Bellevue and downtown Seattle also helps to prepare for future light rail service that will serve the same travel market.
- Connect Redmond's neighborhoods to urban centers and urban centers to the region with frequent all-day service. Connections such as these support the community by creating real travel choices.
- Be designed to close critical service gaps where service is missing or infrequent and where there are poor first mile/last mile connections and circulation among neighborhoods. For example, there is no first mile/last mile connection between regional transit serving the Bear Creek Park and Ride and surrounding jobs and housing. There are no connections between the Education Hill and Bear Creek neighborhoods, particularly along Avondale Road.
- Support transfers to frequent regional service by minimizing wait time between routes.
- Be based on a network of direct and frequent transit corridors, with fewer off-route deviations (for example, Route 930 along Willows Road) creating a simpler, more understandable system of origins and destinations.

To support growth, mobility, and to make transit a real travel choice, transit service must connect Redmond's neighborhoods to urban centers and urban centers to the region with frequent, all-day service.

Transit supportive capital improvements must:

- Improve transit access, speed, and reliability. This includes funding and construction of HOV access lanes that connect Redmond streets to SR 520 and arterial HOV access lanes, where necessary and effective, to allow transit and high occupancy vehicles (HOVs) to avoid congested areas while accessing SR 520. In Overlake these connections should emphasize transit access to HOV lanes near the SR 520/NE 40th Street and SR 520/NE 51st Street interchanges. In Southeast Redmond, the emphasis should be on both transit and HOV access in the SR 520/SR 202 interchange areas.

King County Metro Transit

On July 12, 2011, the King County Council approved the *Strategic Plan for Public Transportation 2011-2021* (Strategic Plan) and the *King County Metro Service Guidelines* (Service Guidelines). The Strategic Plan identifies Metro's transit vision, mission, goals, objectives, strategies, and a performance measurement system. The Service Guidelines are intended to allow Metro to manage the transit system and make decisions about expanding and reducing service based on productivity and determine if revisions to transit service are necessary.

The Service Guideline's focus is on managing the transit system by establishing target service levels for transit corridors based on productivity, social equity, and geographic value. However, the 2011 Metro Service Guidelines understate the transit needs on the Eastside. They do not identify all of the transit service needs today nor in the future, result in service to meet these needs, or identify service to address growth. In addition, allocation of Metro transit service in the current period of declining revenue could result in an estimated 27 percent decrease in Metro service to Redmond, which could significantly decrease service levels.

Table 7. King County Metro Transit reports and plan updates, 2012-2015

Action	Due
Annual Service Guidelines Report Corridors analyzed-All Day & Peak Network <ul style="list-style-type: none"> Over- and under-served corridors Route performance Changes since last reporting period Connectivity with other transit providers Potential changes to Strategic Plan and Service Guidelines 	Annually on March 31
Strategic Plan & Service Guidelines Update <ul style="list-style-type: none"> Adoption of updates to the Strategic Plan & Service Guidelines The 2013 Update at a minimum includes: <ul style="list-style-type: none"> Changes that may be necessary to achieve the 5-Year Implementation Plan, and Changes necessary to address the results of the collaboration process focused on the methodology for adding service The 2015 Update - re-adopt or address unanticipated issues 	Annually on April 30
Alternative Service Delivery: Five-Year Implementation Plan <ul style="list-style-type: none"> Review of best practices Stakeholder involvement Constraints Recommendations Local service needs Costs/benefits of options Strategies to build ridership Timeline 	June 15, 2012 (Informs the April 30, 2013, Strategic Plan and Service Guidelines Update)
Refine guidelines methodology <ul style="list-style-type: none"> Incorporate input from local jurisdictions Factors, methodology, and prioritization of service additions Align factors used to serve/connect centers in All-Day & Peak Network Additional service priority for centers 	October 31, 2012 (Preliminary Report) The final report is part of the April 30, 2013, Strategic Plan and Service Guidelines Update
Biennial Report on Strategic Plan Performance Measures (KC Ord. 17143, Section 5) Review of performance measures of objectives, strategies, and peer comparisons	March 31, 2013 and 2015 (Part of the Annual Service Guidelines Report)

Issues and Redmond's Interests

Metro Transit service

Overall, the City's interests with respect to Metro Transit are to achieve an interconnected transit network on the Eastside between urban centers, neighborhoods, and the regional transit spine. More specifically, this includes:

- Frequency of service to/from and within urban centers, such as between Overlake and Kirkland, Overlake and East Bellevue, and an express connection between Downtown Redmond and Bellevue.
- Connections from neighborhoods to urban centers and the regional transit spine by, for example, maintaining local service that connects to neighborhoods such as Education Hill and Idylwood, providing all-day service for neighborhoods such as Willows, and filling gaps in service where none exists today, such as portions of Education Hill, Idylwood, North Overlake, and Southeast Redmond.
- Implementation of alternatives to fixed route service, such as Dial a Ride Transit, or other innovative lower cost services, as an integral part of a comprehensive transit system:
 - Less productive fixed route service (local/hourly) may be candidates for alternative transit service;
 - Areas where service is not provided today may be candidates for alternative transit service;
 - Alternative transit service pilot projects are implemented and lessons learned are used to develop and incorporate alternative services into the transit system operated by Metro Transit;
 - Alternative transit services and performance measures are incorporated in decisions to allocate service throughout the transit system in all funding scenarios, not just when revenue is growing.
- Balance between existing needs and needs resulting from growth:
 - Add service for all service addition priorities, and not in order of Service Guideline priorities. Service added for growth cannot occur only after the other priorities have been met;
 - Identify transit service that is necessary to serve growing employment and residential areas in Redmond and the Eastside;

- Update the Service Guidelines to reflect, rather than understate, Redmond’s transit needs in terms of service hours, frequency, and geographic coverage.
- Collaboration with Metro to improve transit planning and operations:
 - Address gaps in service, including the lack of first mile/last mile connections, between regional transit routes, and connections to jobs and housing;
 - Value actions jurisdictions have taken, or will take, to create transit-friendly environments;
 - Expand transit partnerships and coordination with jurisdictions and their plans for growth;
 - Continue stakeholder involvement, including development of solutions and service refinements;
 - Support development of a Metro long-range plan for transit service, in addition to near-term changes.

Transit supportive capital improvements

- Continue to identify local improvements that improve transit speed and reliability.
- Work to improve access to transit through development of patron loading and unloading zones, implementation of parking management techniques, and potentially development of small-scale leased park and ride lots.
- Support development of a park and ride facility in north Sammamish to increase transit access for those in east King County to help reduce the high level of demand on Redmond’s existing park and rides.

Transit revenue

Ensure that there is a fair balance between transit taxes collected from Redmond and the Eastside, and transit service provided.

The following table lists the King County Metro reports and plan updates to be delivered between 2012 and 2015 and the issue areas to be addressed. These reports and plan updates are one of the ways in which the City can pursue its interests both by City staff participating in the various working groups and through elected officials serving on regional transportation boards and committees.

Sound Transit

On November 4, 2008, voters approved *Sound Transit 2* (ST2), a \$17.8 billion¹ rail and bus expansion of the regional transit system. The Eastside’s share of ST2 includes \$6.4 billion to build the East Link light rail line between Seattle, Bellevue, and Redmond-Overlake, add approximately 49,000 hours of regional express bus service, and add parking and transit facilities. ST2 also funds three planning studies of future light rail connecting Redmond, Kirkland, and the University of Washington (in the SR 520 corridor), future light rail connecting South Bellevue to Issaquah, and development of bus rapid transit service in the I-405 corridor.

While ST2 did not fund construction of East Link light rail between Overlake and Downtown Redmond, funding helped identify light rail alignments, station locations, and to conduct preliminary environmental review in the likelihood that this connection would be included in the next phase of regional transit investments.

Consistent with the TMP strategies, the City should advocate and work with Sound Transit for regional transit improvements service described below.

The City of Redmond is working to bring light rail to Downtown and Southeast Redmond by 2030.

¹ Year of expenditure, 2009-2023, including inflation.

Issues and Redmond's Interests

Extension of the East Link Project to Downtown Redmond

Complete East Link Project between Overlake and Southeast Redmond and Downtown Redmond (Segment E) by 2030. Support continued work on the design of this segment and seek funding for its construction as part of the next phase of high capacity transit investments.

Final design, permitting, and construction of the East Link Project

Continue to work with Sound Transit to ensure that the East Link Project is designed to be consistent with *Redmond Comprehensive Plan*, *Redmond Zoning Code*, and other City development regulations. Work to ensure that project delivery is consistent with the ST2 plan approved by voters and that East Link service to Overlake begins in 2023.

Overlake Transit Center Station

As the interim terminus of the East Link Project (Segments A through D), the Overlake Transit Center Station has the potential to draw significant vehicle traffic into Overlake from those seeking access to the East Link light rail service. The City's interest is to discourage additional vehicle traffic in Overlake by supporting bicycle, pedestrian, and transit access to the Overlake Transit Station. Early development of the East Link Southeast Redmond Station and the planned 1,400-space parking structure, with frequent direct bus service connecting to light rail at the Overlake Transit Center Station, could mitigate some traffic impacts by drawing traffic from Sammamish and east King County away from Overlake.

Overlake Village Station

Secure complete funding to build a pedestrian/bicycle bridge across SR 520 to connect the Overlake Village Station with employment and housing.

Regional Express Bus Service

Regional Express Route 566 (between Overlake, Downtown Bellevue, Renton, Kent, and Auburn) should be extended to Downtown Redmond in preparation for the extension of light rail north from Overlake, to support the Downtown Redmond urban center. With the arrival of East Link to Overlake, direct express bus service, Route 545 or equivalent, between Downtown Redmond, Southeast Redmond, to destinations in Seattle via Overlake along SR 520 needs to be continued. These connections will be critical to support growth and regional travel needs to and from these neighborhoods, and to address traffic impacts due to the interim terminus of East Link at the Overlake Transit Center Station

Funding, Planning, and Maintenance

Redmond relies on regional, state, and federal funding leveraged with local funds to provide transportation programs, projects, and services (see Chapter 7 - Transportation Facilities Plan, for more details). Adequate funding is threatened by unreliable and declining revenue sources (e.g., gas taxes paid per vehicle mile of travel will continue to decline as more fuel efficient vehicles and electric vehicles replace older vehicles). To meet the funding challenge, additional stable local, regional, state, and federal revenue sources are needed to build and maintain regional transportation facilities. One of the keys to successfully achieving funding is to have Redmond's *Comprehensive Plan* and the TMP in alignment with the Puget Sound Regional Council's (PSRC) *VISION 2040* and *Transportation 2040* that guide the four-county region (King, Pierce, Snohomish, and Kitsap). This alignment helps Redmond to successfully compete for regionally distributed federal grant funds that are leveraged with City and



private funding to pay for regionally significant improvements such as the NE 36th Street Bridge in Overlake completed in 2011.

The issues and interests in this section primarily support three TMP strategies: support for urban centers, improving neighborhood access, and improving freight mobility.

Issues and Redmond's Interests

User fees

Existing user fees, such as ferry and bus fares, help support the state ferry system and public transit. Truck weight fees are a traditional street and highway funding source and have been in place for many years. However, new applications of user fees, also called value pricing, road pricing, and, more commonly, tolling, are already playing a greater role in raising transportation revenue. New variable tolls are providing revenue to construct the new SR 520 bridge. As part of the 520 Tolling Implementation Committee's report to the state legislature in 2009, tolling of both the SR 520 and I-90 bridges was considered. The legislature authorized tolling of the SR 520 bridge and will be studying I-90 in 2013 and 2014.

The City supports tolling of regional transportation corridors including SR 520 and I-90 to improve and balance traffic flows across Lake Washington in addition to raising revenue, and should support the use of toll revenue to help meet increased demand for transit. Tolling and user fees for freeways and regional arterials in the central Puget Sound region are important strategies contained in the adopted PSRC *Transportation 2040* plan. These strategies help to pay for improvements, maintenance and operations, and help make transit and carpooling more convenient and cost competitive (see also Parking below).

State and federal revenue

Both PSRC and WSDOT are involved in planning and funding regional transportation facilities and connections that serve Redmond. It is important that Redmond work directly with agency staff and elected officials at the regional, state, and federal level to ensure that Redmond receives funding from federal and state sources for transportation improvements that support the City's mobility, access, and circulation needs.

Maintenance

Increasingly there is recognition that the transportation system, particularly streets, highways, and bridges, needs to be adequately maintained. The City recognizes this need and supports greater funding for maintenance and replacement of transportation facilities due to age and hazards arising from human and natural causes including:

- Ongoing maintenance and repair of regional trails, arterials, highways, and bridges.
- Resurfacing travel lanes and trails and ensuring that bridges have adequate earthquake structural support. In Redmond, this includes arterial bridges crossing the Sammamish River at Redmond Way, NE 85th Street, NE 90th Street, and NE 116th Street.
- Federal and state planning for a safe and secure transportation system, participation in regional emergency management planning and community preparation for catastrophic disaster and smaller emergency situations.

Three TMP Strategies

Support for
urban centers

Improving
neighborhood
access

Improving
freight mobility

User fees will be an increasingly important source of revenue for transportation improvements in the future.

Environmental Sustainability

The City can take further action to advance environmental sustainability goals by supporting alternative sources of energy for motor vehicles and reducing pollution generated by our current transportation system.

Development of alternative energy sources for motor vehicles can reduce petroleum dependence and pollution, leading to a healthier and more sustainable future. The transportation system currently uses 71 percent of all petroleum consumed in the U.S., and 95 percent of the transportation system is powered by petroleum. Growth in vehicle miles of travel in Washington has far outweighed the state's population growth. Between 1980 and 2008, Washington's population grew by 60 percent from 4.1 million to 6.6 million, while vehicle miles of travel grew 92 percent, from 28.9 to 55.6 billion miles per year in the same time period.

In terms of pollution, the transportation system is the source of 45 percent of greenhouse gases generated in Washington, significantly higher than the national rate of 28 percent. Surface water runoff is the leading pollutant in regional waterways, affecting Puget Sound, Lake Washington, Lake Sammamish, and the Sammamish River. Regional transportation projects such as the *SR 520 Bridge Replacement and HOV Project* and the *I-405 Corridor Program* incorporate improvements that minimize water runoff impacts and are good examples of the environmental benefits of planned regional transportation facilities.

The issues and interests below support two TMP strategies: support for urban centers and increasing travel choices and mobility.



Issues and Redmond's Interests

Alternative Fuels

Fund and actively support locating, permitting, and constructing facilities that provide energy to alternative fuel vehicles.

Air quality improvements

Reduce pollution from ozone and particulates in addition to greenhouse gas emissions. The City can leverage its infrastructure investments that improve air quality by seeking public and private sector partnerships. For example, the City supported the early development of infrastructure for the delivery of alternative non-fossil fuels, such as recharging stations for electric vehicles, as a way improve air quality.

Water quality improvements

Improve the management of surface water quantity and quality in conjunction with transportation investments and by seeking public and private sector partnerships. For example, the City is working with Sound Transit and property owners to develop a regional stormwater retention/detention system in Overlake in coordination with the Sound Transit East Link Project.

Parking

Developing and managing parking in Downtown Redmond and Overlake, including parking pricing and location, is necessary to provide effective access and mitigation of traffic impacts in neighborhoods surrounding planned East Link light rail stations. The parking issues and interests below support three TMP strategies: preparing for light rail, support for urban centers, and increasing travel choices and mobility. Parking pricing is also supported regionally in the PSRC *Transportation 2040* plan

and combines with regional tolling to encourage more travel choices by transit, carpooling, walking, and biking.

Issues and Redmond's Interests

Access to light rail service

Redmond's Downtown and Overlake urban centers are characterized by dense, mixed land uses connected by a multimodal transportation network. Consistent with the urban character of these places, primary access to East Link light rail service will be by pedestrian, bicycle, and bus connections rather than driving.

Locating future parking facilities

Locate future parking facilities in lower density areas outside Redmond's urban centers where vehicular traffic and access to transit is better accommodated. A park and ride facility in Southeast Redmond will improve access to light rail service from the surrounding lower density suburban and rural areas of Sammamish and east King County.

Accommodating demand for park and rides

To support increasing demand for existing park and rides, parking management techniques, and strategies that provide alternatives to parking, such as improved local transit, first and last mile services, or designated pick-up and drop-off areas, should be implemented.

Technology

New technology is available to improve mobility and manage the regional transportation system and provide travel time information to drivers, transit riders, bicyclists, and pedestrians. The City can effectively promote technology through policies, codes, and other actions that support better management of regional highway, transit, and trail networks. Technology issues and interests primarily support three TMP strategies: support for urban centers, increasing travel choices and mobility, and improving freight mobility.

Issue and Redmond's Interest

Improve the efficiency of the regional transportation:

Apply Intelligent Transportation System (ITS) strategies to manage congestion, increase travel reliability, and provide travel information for transit, traffic incidents, and alternative travel routes:

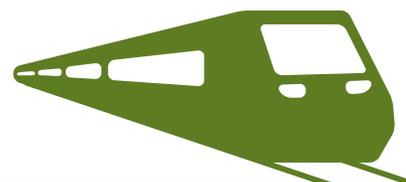
- Integrate traffic signals, transit preemption, alerts on electric signs, and navigation systems on local and regional arterials.
- Study the extension of automated traffic management (ATM) systems for the region, beyond use on freeways, but also for transit and arterial operations.

Implementation

Implementation actions are to annually review the TMP Regional Transportation Chapter to:

- Maintain a current list of City issues and interests based on the most current local, regional, and state transportation policies and legislation.
- Ensure that the chapter is coordinated with the City's annual legislative agenda.

A complete update of the chapter will be provided with each update to the TMP.



Chapter 6:

Maintenance and Operations

Introduction

Maintenance and operations of the transportation system is about taking care of what we have and maximizing the use of the current system. A well-maintained and operated infrastructure is vital to an effective and functional transportation system. However, the needs for keeping up the transportation system in Redmond have become greater with the overall aging of the infrastructure, continued system expansion, increased travel on the system, and compliance requirements for the Americans with Disabilities Act (ADA) and environmental mandates. This chapter establishes the approach that Redmond will strengthen its efforts in maintenance and operations and describes the major needs.

Strengthen Maintenance and Operations Efforts

Currently the Transportation Facilities Plan (TFP) does not identify funding for the full range of maintenance and operations activities. Only a few capital improvement¹ projects and certain specific programs in the TFP are targeted specifically for major maintenance (for example: seismic repair of the 148th Avenue NE Bridge and the Pavement Management Program). This represents only a portion of systematic maintenance and operations activities needed to keep up the transportation system. Day-to-day maintenance and operations, such as routine cleaning, pothole filling, and signal operations, are part of Redmond's operating budget and achieved through a blend of City staff and contracted services. Though seemingly less noticeable than capital improvements, the day-to-day maintenance and operations are essential to the City vision aspiration for "high- quality services" and a critical part of the systematic efforts by Redmond in helping people get to where they need to go in a safe and efficient manner.

These two joint resources (TFP and maintenance operating budgets) are not adequate to maintain current levels of service into the year 2030. To keep up with the increased demands as the system ages and expands, Redmond must invest significantly more into maintenance and repair between 2013 and 2030. Correspondingly, the Three-Year Action Plan provides direction to examine and assess the appropriate funding levels for maintenance and operations of the entire transportation system and the funding levels for all programs in the TFP, including those dedicated to maintenance and operations.



¹ A capital improvement is a public facility expenditure costing \$25,000 or more with a useful life of five or more years.

In addition, Redmond will incorporate maintenance considerations into the design of capital projects, and will include funding for maintenance and operations at the earliest stages of new capital project development. Determining needs and resources for maintaining and operating future transportation facilities will become an essential part of the planning and budgeting efforts for new improvements. Therefore, how to maintain and operate new transportation facilities needs to be planned into the design well before final design and construction of new facilities to the transportation system. One practice that many jurisdictions use in accounting for maintenance and operations is that a certain portion of the capital improvement budget is explicitly allotted to maintenance and operations of new facilities.

Finally, in order to accurately capture the needs in maintenance and operations, Redmond will ensure that its inventory of the transportation infrastructure is updated regularly. The comprehensive information of what the transportation infrastructure consists of, and the status of individual facilities, will help Redmond use its resources where most needed.



Major Needs in Maintenance and Operations

Maintenance

Pavement

Redmond owns and maintains 143 centerline miles of pavement, including 54 miles of arterials and 89 miles of residential streets. Approximately five miles of new streets are expected to be constructed between 2013 and 2030. Other streets could be added by annexation and development in the future.

Redmond proactively preserves the City's pavement infrastructure in good condition to maintain a safe transportation system and minimize life-cycle costs of capital facilities by resurfacing streets regularly.

The performance target for pavement management is an average pavement condition index score above 70 of a possible 100. The current average pavement condition index score, 79, is the lowest score since 1995 when Redmond started surveying pavement conditions biannually. Declining condition scores are due to the aging of our street network, utility and construction related trenching operations, and increased vehicular traffic, especially heavy trucks and buses. All of our arterial streets will require resurfacing by 2027.

In addition to resurfacing pavement, upgrading sidewalk curb ramps into compliance with the Americans with Disabilities Act (ADA) was included in all resurfacing projects starting in 2007. Although important and necessary, this requirement of upgrading curb ramps has lessened the available funds for resurfacing by about 20 percent. Also, deteriorated sidewalks, curbs, and gutters in poor condition within the overlay project area are also often replaced to achieve efficiency and cost savings. To maintain service levels above a PCI rating of 70 through the year 2030 will require a significant increase in funding.

The City of Redmond contains 143 miles of roadway, including 54 arterial miles.

Redmond Bridges

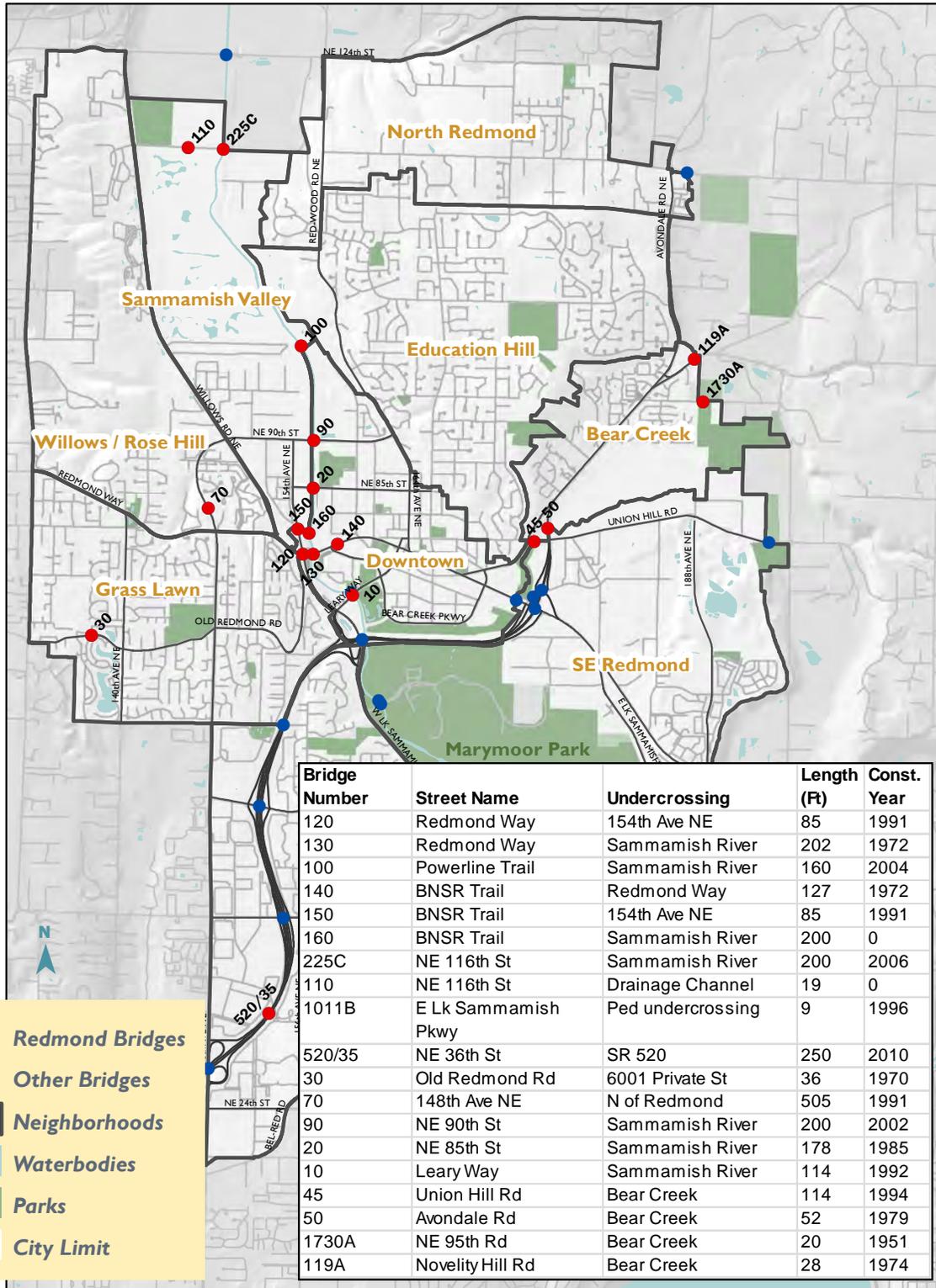


Figure 49. Redmond bridges

0 0.5 1 Miles

Bridges

Redmond owns 18 bridges. They are regularly inspected and repaired to maintain structural integrity and safety (Figure 49). The conditions of the City's bridges are maintained to meet the National Bridge Inspection Standards (NBIS) and pertinent state requirements.

Two bridges have structural deficiencies, which make them susceptible to damage caused by earthquakes. Both of these need replacement or major repairs in the next six years: the NE 95th Street Bridge over Bear Creek and the 148th Avenue NE Bridge north of Redmond Way. Both projects are included in the 2013-2030 Transportation Facilities Plan.

Sidewalks, Curbs, and Gutters

Redmond owns 235 miles of sidewalks. Preliminary estimates show that about 4 percent (nine miles) of sidewalks are in poor condition. Maintenance activities for sidewalks should focus on those in poor condition. Two segments of sidewalks in very poor condition have been included as separate projects in the TFP:

- NE 40th Street between 164th Avenue NE and Bel-Red Road; and
- Cleveland Street between 164th and 168th Avenues NE.

Along with replacing sidewalks in poor condition, sidewalk and curb ramps that are not compliant with ADA requirements will need to be replaced. Also, new curb ramps will be added to intersections where they do not exist in compliance with Redmond's ADA transition plan. The City of Redmond owns about 4,000 ramps and approximately 70% of them significantly deviate from ADA requirements.

In addition to damaged sidewalks, concrete curbs and gutters in poor condition will also need to be replaced. There currently is no systematic program or specific funding to replace long segments of sidewalks or curbs and gutters. Most replacement and repairs are currently done on an interim basis by City crews through grinding or asphalt ramps to reduce trip hazards or through other City capital improvements, such as pavement management projects, and private development projects.

Transit Stops

The Power and Facilities Section of King County Metro Transit maintains all Metro Transit properties and provides services such as graffiti removal, vandalism repairs, and bus stop upkeep. It also handles environmental issues as they occur and maintains the safety and overall appearance of Metro's transit facilities. Redmond coordinates with King County Metro for the maintenance needs of transit stops within the City of Redmond and works to ensure compliance with Redmond design standards and ADA accessibility standards.

Traffic Signal and Communications Devices

Redmond currently owns 104 traffic signals. Twenty-five additional traffic signals are expected to be constructed by 2030. The signal and communications devices for these traffic signals have a useful life ranging from 5 to 30 years. The devices that need to be replaced over time include:

- Signal hardware - signal poles, mast arms, signal heads, pedestrian indications and push buttons, junction boxes, conduit, electrical wiring, and in-pavement/video vehicle detection.

Accessibility improvements are a major component of the City's maintenance program.



- Signal control equipment - signal cabinets, electrical service cabinets, UPS (backup battery power) cabinets, and ITS (Intelligent Transportation System) cabinets, as well as electronics inside cabinets, such as signal controllers, conflict monitors, and detection systems.
- Transportation Management Center (TMC)/Communications – CCTV cameras, video display, PCs, signal and camera control software, communication systems with fiber-optic and copper cables, modems, and switches.
- Flashing Beacons/Special Equipment/Signs – includes school zone flashers, pedestrian crosswalks, illuminated speed limit signs, and overhead and pole mount signage at traffic signals.

There currently is no systematic program to replace electronic traffic signal devices. For example, the traffic signal controllers within each signal cabinet are essentially computers that need to be replaced periodically (about every 5-7 years). Equipment replacements are currently done as failures occur or more sporadically through other capital improvement projects.

The City's electronic transportation system infrastructure is emerging as a maintenance responsibility.

Street Lights

Redmond currently owns 1,300 street lights. An additional 1,000 street lights are expected to be constructed by 2030. In addition, Puget Sound Energy (PSE) owns 2,700 street lights in the City of Redmond. Redmond maintains City-owned street lights and pays for the maintenance of PSE-owned street lights.

Regular Street Upkeep

Regular street upkeep is provided through continuing daily operations of the City's Maintenance Division including:

- Minor repairs of assets in the right-of-way, including pavement, sidewalks, signs, markings, pathways, curbs, and gutters;
- Regular street sweeping;
- Designated snow/ice response routes clear of snow/ice is a priority commitment during adverse weather conditions and events (insert a picture of snow plow truck);
- Landscape management in the right-of-way, including vegetation control, irrigation, and plants; and
- Inspection and repair of stormwater infrastructure, such as catch basin, underground vault, and pond.

Operations

Traffic Signal Operations

Intelligent Transportation Systems (ITS) improves transportation safety and mobility through the integration of advanced communications technologies into the transportation infrastructure and within vehicles. There are a broad range of ITS applications, such as web-based traffic cameras, traffic signal coordination, and a traveler information system via dynamic message signs. ITS technologies have resulted in a wide range of benefits, such as decreased fuel consumption and travel time, and improved traffic flow. Currently, most ITS applications focus on vehicle and transit operations.



Future applications will have the capability to provide additional emphasis on improving safety and mobility for pedestrians, cyclists, and special needs populations.

Due to the proven benefits of ITS, Redmond relies on ITS to reduce delay and improve safety for travelers. The current ITS captures traffic information from the field and feeds traffic information to two sources in real time:

1. To travelers via a web-based traffic camera display
2. To Redmond's Traffic Management Center

The other important components of ITS include:

- Advanced signal control and detection at intersections for efficient traffic signal operations,
- Closed circuit television (CCTV) installed at intersections that collect real time travel information, and
- A high-speed communications channel to relay information between the field and the Traffic Management Center.

Figure 3. Redmond Traffic Management Center.

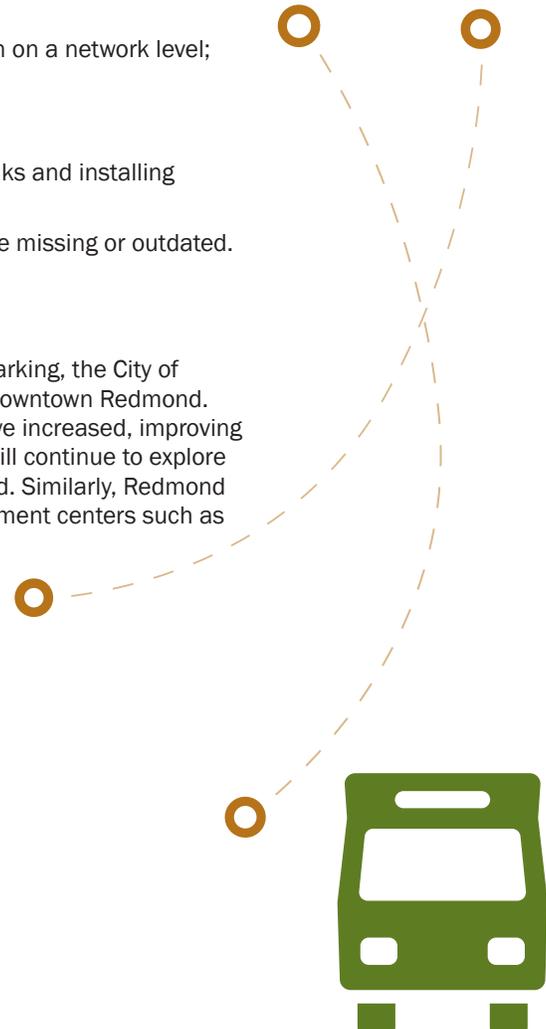
To improve its ITS as a tool in managing traffic and providing travelers with up-to-date traffic information, Redmond will explore the following:

1. Improving its use of reliable ITS technologies for all modes of travel, including pedestrians, bicyclists, transit, drivers, and freight;
2. Creating web- or mobile-based applications to provide traffic flow information on a network level;
3. Increasing the coverage of CCTV in Redmond;
4. Installing dynamic message signs at key locations in Redmond;
5. Providing a reliable communications system by filling in missing fiberoptic links and installing redundant path; and
6. Updating traffic signal control and detection devices/software where they are missing or outdated.

Parking Management

In response to the community's request for increased availability of on-street parking, the City of Redmond started monitoring parking duration for on-street parking spaces in Downtown Redmond. This practice has proven effective. Overall parking availability and efficiency have increased, improving access and economic vitality to Downtown Redmond. In the future, Redmond will continue to explore how to further improve parking availability and efficiency in Downtown Redmond. Similarly, Redmond will explore appropriate parking management methods in Overlake and employment centers such as Southeast Redmond.

*Report potholes or other maintenance needs to City staff by visiting:
<https://www.redmond.gov/Transportation/StreetOperations/PotholesPavementRepair/>*



Chapter 7:

Transportation Facilities Plan

Introduction

The Transportation Facilities Plan (TFP) is the long-range financially constrained portion of the Buildout Plan. The Buildout Plan contains all the capital needs identified to provide a complete and well-maintained transportation system for the City of Redmond well into the future. The TFP has been prioritized to best meet the transportation vision in support of the 2030 land use plan. This 18-year Transportation Facilities Plan is financially constrained by the revenue forecast for that same time period consistent with the Washington State Growth Management Act.

The chapter describes three elements essential to the formation of the TFP: its relationship to the Buildout Plan, the revenue forecast, and a strategically prioritized list of specific capital improvements and programs.

The Buildout Plan

The Buildout Plan is an ambitious list of important multimodal improvements needed to address gaps and issues in the current transportation system. Appendix E contains the unfunded portion of the Buildout Plan). The full implementation of the Buildout Plan over time is expected to be a partnership among all stakeholders of the transportation system in Redmond, including neighboring jurisdictions, private developers, businesses, residents, and granting agencies.

The Buildout Plan, Transportation Facilities Plan, and Three-Year Action Plan

The priority portion of the Buildout Plan (Figure 50) is the 18-Year Transportation Facilities Plan (TFP), a funding- constrained plan guiding transportation investment between 2013 and 2030. These priority projects and programs are the City's commitment to transportation improvements needed to keep pace with growth, complete system deficiencies, and provide for essential operations and capital maintenance needs. Furthermore, the Three-Year Action Plan (Chapter 8) identifies high-priority action items to move the TFP forward and begin implementation between 2013 and 2015.

Revenue Sources and Forecast

Process to Develop the 2013-2030 Revenue Forecast

Each of the revenue sources has been forecasted through 2030. The forecast makes assumptions about basic considerations, such as the state of the economy, whether the City would continue to devote that revenue source to transportation, and rate changes.

The first six years of the TFP revenue forecast are derived from the revenue projections in the 2013-2018 Capital Investment Program (CIP) approved through the Budgeting by Priorities process in 2012. The remaining years (2019-2030) are calculated based on a flat rate (does not include inflation)

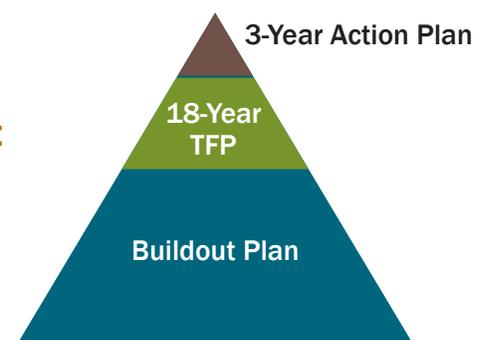


Figure 50. Relationship among the Buildout Plan, TFP, and Three-Year Action Plan

to match the project cost estimates which were estimated in 2012 dollars. Project cost inflation in outer years (2019-2030) can be estimated only if the City knows exactly what year each project would be initiated. While this is known for the Capital Investment Program (CIP), it is not known for the entire 18-year period.

Overview of Revenue Sources and Assumptions

The City's transportation investments are supported by a variety of revenue sources (Table 8) that include:

- **City taxes and fees** – General funds from property and sales taxes, Business Transportation Tax, transportation impact fees, etc.
- **Funds from other governmental agencies** – Grants from state and federal transportation agencies, cost participation by other cities in Redmond projects, and transfers of funds pursuant to agreements, such as the BROTS agreement with Bellevue.
- **Developer payments** – Funds provided by developers to ensure access and mitigate site-related transportation impacts.
- **Miscellaneous** – Interest earnings, carry-forward fund balances associated with projects initiated in prior years, intergovernmental transfers, and other funds.

Table 8. TFP revenue forecast 2013-2030

Revenue Source	Forecast (\$M) 2013-2030	Percent	Description of Source
General Fund Transfer	41.9	10%	Council appropriation from City general fund
Pavement Management General Fund	5.4	1%	Council appropriation from City general fund
Real Estate Excise Tax	34.2	8%	Tax on property sales in Redmond
Motor Vehicle Excise Tax	7.0	2%	State transportation funds to Redmond
Other Jurisdictions	2.7	1%	Cost participation by other agencies in Redmond projects
Federal and State Grants	28.2	7%	Cost participation grants for specific projects
Business Tax	40.8	10%	Employment based tax - Redmond employers
Impact Fees	132.2	31%	Transportation impact fee cash payments by developers; or construction value by developers
Developer Contributions	88.8	21%	Value of developer payments or construction for specific projects; not impact fee credited
Miscellaneous Sources	23.4	6%	Interest earnings, rent, surplus property, revenue for completed projects for concurrency
Miscellaneous Carryovers	18.9	4%	Funds brought forward; net of debt payments, non-tfp projects and overhead
	424.0	100%	

Individual revenue sources are described in more detail below:

- **General Fund** – This revenue source is comprised of sales tax, property tax, utility tax, and other licenses and fees. Transportation currently receives 55 percent of the 5 percent General Fund revenues that are transferred to the CIP functional areas (minus development revenues and significant one-time collections). However, one-time monies can be received to support specific transportation capital projects. Forecast Assumption: assumes continuation of City Council appropriation at 55 percent of the 5 percent General Fund transfer to Transportation.

- **Pavement Management General Fund Transfer** – By policy, \$300,000 per year is transferred from the General Fund to the Pavement Management Program for the preservation of roadway asphalt. Forecast Assumption: assumes General Fund transfer will continue at historical level of \$300,000 per year.

- **Real Estate Excise Tax (REET)** – REET is a tax on all sales of real estate at a rate of 0.5 percent of the selling price of a property within Redmond city limits. King County collects REET funds for the City and distributes them to the City. REET is restricted to expenditures on capital projects. Transportation also currently receives 55 percent of the REET tax. Forecast Assumption: assumes transportation will continue to receive 55 percent of REET collected in the city. REET declined by approximately 50 percent from its historical base during 2009-2010 and only slightly grew in 2011-2012, resulting in a lower baseline for forecasting.

- **Motor Vehicle Fuel Tax (Gas Tax)** – In Washington State, cities receive a portion of the state-collected gasoline tax. Gas tax is imposed as a fixed amount per gallon of gas purchased and is dedicated to transportation capital improvements. As fuel efficiency increases, the amount of gas taxes collected per mile of travel will decrease, but this is expected to be offset by population increase over the next 18 years. Forecast Assumption: assumes continuation.

- **Transfers from Other Jurisdictions** – Cost participation from other agencies in Redmond projects. Forecast Assumption: based on historical collections.

- **Business Tax** – Currently, a \$57 fee is assessed per employee to businesses operating in Redmond to support transportation and transportation demand management projects. Forecast based on estimated growth in employment. Business taxes are instrumental in leveraging grants. Forecast Assumption: assumes continuation at rate of \$57/FTE (full-time equivalent) and is projected to grow by approximately 1.2 percent per year, commensurate with projected employment growth in the city. This forecast does not include approximately 50 percent of the business tax revenue collected which is used to pay outstanding debt for the Bear Creek Parkway project.

- **Impact Fees** – The City collects impact fees from developers for their impact on the transportation system. Impact fees are dedicated to transportation capital improvements that provide new capacity. The fees cannot pay for existing deficiencies in level of service for the public facilities or normal maintenance and repairs. Impact fee revenue is subject to credits for developer-constructed improvements for capacity projects within the TFP. Impact fee revenue is a blend of developer-constructed improvements (credits to impact fees) and cash payments based on land use. Impact fees are instrumental in leveraging grants. Forecast assumption: based on 2030 land use targets and 2013 fee schedule. Commercial, industrial, and retail impact fee forecast is based on historical trend of business tax collection commensurate with projected employment growth in the city. Single-family and multifamily forecast is calculated based on 2030 land use targets. Assumes no rate increase beyond 2013 for forecasting purposes.

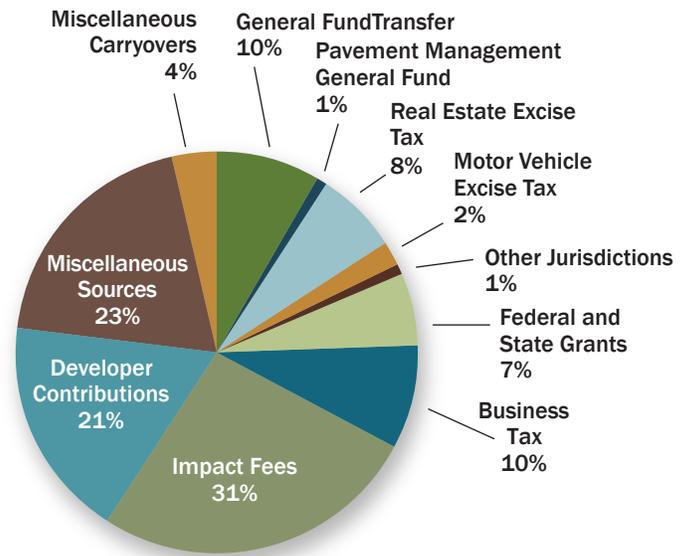


Figure 51. TFP Revenue Forecast, 2013-2030

- **Developer Contributions** – Comprised of cash payments towards specific projects or the value of developer constructed improvements that exceed impact fee credits. Forecast assumption: based on existing developer agreements or known contributions to specific projects. Forecast does not speculate contributions into the future beyond known agreements.
- **Federal and State Grants** – Contributions by a federal or state government to support a particular transportation improvement. Each grant has specific rules and guidelines about what type of projects they will fund. Grants generally require a funding match that the City must contribute towards the cost of the project. If a project uses federal funds the level of analysis, documentation, outreach, and commitment is generally more detailed or stringent. Forecast assumption: grants that have been awarded are included in the first six years. Future grant revenue forecast is conservative.
- **Miscellaneous Sources and Carryover** – Comprised of interest earnings on cash balances in the transportation fund, rental income, surplus property sales, other miscellaneous sources, and carry-forward fund balances associated with projects initiated in prior years.

Overview of Forecast and Growth Assumptions – 2013-2030

Forecast Assumptions

- Forecasts flat to moderate growth in revenues that reflect a slowly rebounding economy.
- The forecast does not include any increases to rates or new sources of revenue.
- Revenues and project costs also include the portion of CIP-funded projects that have occurred prior to 2013 and are continuing into the 2013-2018 time frame.
- Ensures debt obligations are paid from existing revenues.

Growth Assumptions

- Growth pays for growth – Impact fees and developer contributions account for 48 percent of the TFP revenues.
- Pipeline projects are either underway or have concurrency through a development agreement.
- Transportation impact fees paid by developer are a blend of built projects (developers receive impact fee credits when constructing an impact fee eligible project) and cash towards TFP projects.
- Developer contributions are the portion of developer-built projects that exceed the limit of impact fee credits.

Development of the Transportation Facilities Plan (TFP)

The Transportation Facilities Plan is part of the overall City of Redmond Capital Investment Strategy (CIS) or “Vision Blueprint,” which is a comprehensive listing of all public infrastructure projects needed and funded through 2030. Transportation is the largest of the individually funded capital plans and integral to coordinating with the other capital projects within the city, particularly with utility projects, stormwater improvements, and parks and trails. Transportation tends to provide a framework for how to consider the design and timing of many other City capital projects so all of the City infrastructure can be integrally designed and provided most efficiently.

Explore an interactive version of the Transportation Facilities Plan by visiting www.redmond.gov/tmp

The prioritization of specific transportation projects includes those expected to make meaningful progress toward advancing the City vision and the aspirational targets for transportation. Individually, all capital improvements in the TFP are closely aligned with the five transportation strategies: support urban centers, improve travel choices, support light rail, increase neighborhood connections, and enhance freight mobility.

The TFP is balanced in three ways. First, it is balanced across traveling modes. Figure 52 indicates that the City of Redmond continues to focus on multimodal improvements to provide travel choices and mobility while making significant strides to complete the infrastructure for pedestrians and bicyclists. Vehicular capacity improvements at critical locations are included to relieve congestion and support freight mobility. Redmond makes a small investment about transit in the TFP. However, the region is making a huge transit investment that will connect Downtown Redmond with Bellevue and Seattle through the East Link light rail.

Second, the TFP is not just about building or providing new capital improvements. It has dedicated funding to preserve key infrastructure, including pavement and bridges. Twelve percent of the TFP funding is for preservation in the formats of both projects and programs (Figure 52). Third, the TFP is balanced across urban centers and neighborhoods. Slightly more than half of all TFP projects are located in neighborhoods outside of urban centers (Figure 53).

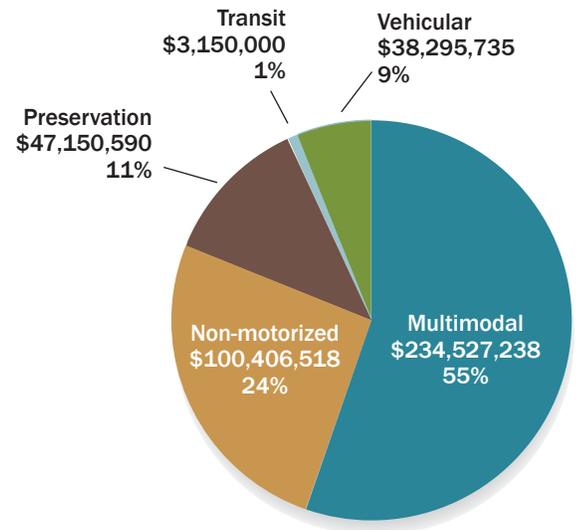


Figure 52. TFP Investment by category

Projects and Programs

TFP capital investments are arranged into two types: projects and programs. Projects and programs have distinct characteristics, and they are designed to complement each other.

Projects are standalone efforts that have a beginning and an end, are location specific, have a clear project scope, address multiple issues, and have set cost estimates and funding sources. An example of a project is a bridge replacement or the construction of a segment of sidewalk. Projects usually originate with a problem identified by staff or a set of comments from the community collected during a set period of time.

Programs are ongoing efforts that address a particular need, such as bicycle improvements or neighborhood traffic safety. The scope and cost estimates of work undertaken as part of a program can vary depending on community needs and the funding environment (e.g., grant opportunities). An example of a program is the Pedestrian Program, which identifies deficiencies in the pedestrian environment and funds construction to fix a set of those deficiencies every other year. Community input continuously informs programs. See Appendix G for more information about programs.

The TFP project list is grouped geographically. Refer to Figure 54 for the locations of projects in the Downtown urban center, see Figure 55 for TFP projects in the Overlake urban center, and see Figure 56 for TFP projects in the remaining neighborhoods. Programs are included in the TFP list (see Table 4, page 151) but are not mapped. See Appendix H for expanded definitions of TFP projects.

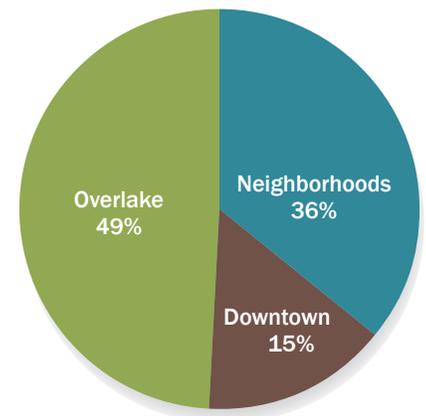


Figure 53. TFP project distribution by area

Downtown Transportation Facilities Plan Projects

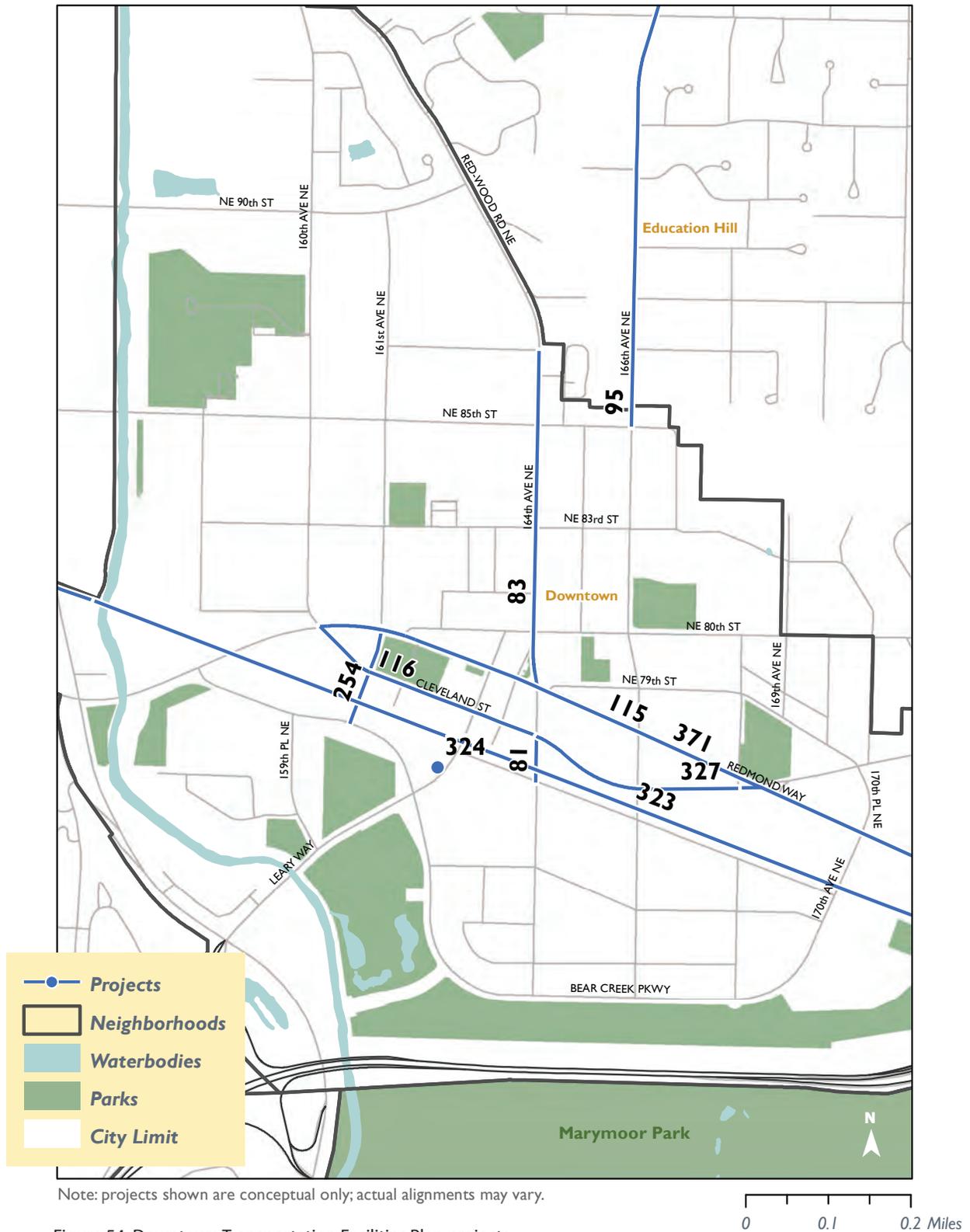


Figure 54. Downtown Transportation Facilities Plan projects

Table 9. Downtown TFP projects

DOWNTOWN						
ID	Name	Description	Expected Implementation Time Period	Significant Support For These Strategies	Cost Estimate	Source
81	164th Ave NE Extension	Construct new 164th Ave NE from NE 76th St to Cleveland St.	Near-Term	1 2 3	\$3,500,000	Downtown East-West Corridor Study, previous TFP
83	164th Ave NE Rechannelization	Reconfigure 164th Ave NE from Redmond Way to NE 87th St	Near-Term	1 2 3	\$654,000	Previous TFP
95	166th Ave NE Rechannelization	Reconfigure 166th Ave NE from NE 85th St to NE 104th St to 1 through lane in each direction, center left turn lane and bike lanes.	Near-Term	2 3	\$850,000	Education Hill neighborhood plan, previous TFP
115	Redmond Way & Cleveland St Improvements including wb BAT lane and Couplet Conversion	Convert Redmond Way and convert Cleveland Street to two-way circulation.	Near-Term	1 2 3 4	\$17,424,764	Downtown East-West Corridor Study, Sound Transit for BAT lane, previous TFP
116	Cleveland Streetscape	Improve Cleveland Street to a pedestrian-friendly Main Street.	Near-Term	1 3	\$6,322,000	Development agreement, Downtown East-West Corridor Study, previous TFP
254	161st Ave NE Extension (complete)	Construct new 161st Ave NE from Bear Creek Pkwy Extension to Redmond Way. Improvements include 1 through lane in each direction, left turn lanes, bike lanes, parking, sidewalks, street lights, storm drainage, right-of-way, easements and traffic signals at Cleveland St and Bear Creek Pkwy.	Near-Term	1 2 3 4	\$6,850,000	Downtown East-West Corridor Study, previous TFP
323	Redmond Central Connector Segment 1	Complete the Redmond Central Connector between the Bear Creek Trail and Sammamish River Trail.	Near-Term	1 2 3 4	\$4,750,000	Downtown Transportation Master Plan, previous Buildout Plan
324	Downtown Shared Parking Facility	Shared parking facility at the intersection of Leary Wy and Bear Creek Parkway.	Near-Term	1 4	\$500,000	Previous TFP
327	Cleveland Street Sidewalk Rehabilitation	Replace sidewalks between 164th Avenue NE and 168th Avenue NE.	Near-Term	1 3 4	\$271,000	Staff and community input

LEGEND: 1 Support for Urban Centers 2 Neighborhood Access 3 Travel Choices & Mobility 4 Prepare for Light Rail 5 Support Freight Mobility

Table 9. Downtown TFP Projects (continued)

DOWNTOWN						
ID	Name	Description	Expected		Cost Estimate	Source
371	Redmond Way Widening	Add second westbound lane and parking on the north side of Redmond Way between 168th Avenue and 164th Avenue. Project would include one travel lane, on-street parking, sidewalk, right-of-way, utilities and streetscape improvements	Near-Term	1 3 4 5	\$4,624,421	Downtown East-West Corridor Study
Downtown TFP Project Cost					\$45,746,185	

LEGEND: 1 Support for Urban Centers 2 Neighborhood Access 3 Travel Choices & Mobility 4 Prepare for Light Rail 5 Support Freight Mobility

Table 10. Overlake TFP Projects

OVERLAKE						
ID	Name	Description	Expected	Significant Support For These Strategies	Cost Estimate	Source
5	Overlake Village Ped & Bike Bridge (ST)	Provide a new pedestrian and bike connection over SR 520 to the Overlake Village light rail station.	Middle-Term	1 2 3 4	\$8,800,000	Overlake Village station location charrette process, previous Buildout Plan
6	Overlake Transit Center Ped & Bike Bridge (ST)	A new pedestrian and bike connection over SR 520 between the Overlake Transit Center, the Microsoft west campus and the SR 520 Trail, integrating with the future light rail station.	Middle-Term	1 2 3 4	\$28,000,000	Microsoft Ped, Bike, and Fitness Study; Overlake Master Plan; previous TFP
8	SR 520 Trail Grade Separation at NE 40th St.	Grade separate the 520 Trail at NE 40th Street.	Middle-Term	1 2 3 4	\$5,250,000	Microsoft Ped., Bike, and Fitness Study; Overlake Residential Area neighborhood plan; previous TFP
39, 41, 264	148th Corridor From NE 20th Street to SR 520	Improve intersections on 148th Avenue NE at NE 20th Street and NE 24th Street; Create third northbound through lane on 148th Ave NE from NE 22nd St to SR 520 westbound on-ramp.	Long-Term	1 2 3 5	\$9,007,000	39 & 41: previous TFP, 264: Overlake Residential Area neighborhood plan, Overlake Master Plan
47	152nd Ave. NE Main Street - Phase 1 (East)	Main Street improvements between NE 26th Street and NE 31st Street (half street improvements).	Middle-Term	1 2 3 4	\$7,100,000	Previous TFP updated by Ordinance No. 2575, Overlake Master Plan

LEGEND: 1 Support for Urban Centers 2 Neighborhood Access 3 Travel Choices & Mobility 4 Prepare for Light Rail 5 Support Freight Mobility

Table 10. Overlake TFP Projects (continued)

OVERLAKE						
ID	Name	Description	Expected	Significant Support For These Strategies	Cost Estimate	Source
49	152th Ave NE Main Street South of NE 24th Street	Implement a multi-modal pedestrian corridor concept on 152nd Avenue NE from NE 20th Street to NE 24th Street to create a lively and active signature street in the Overlake Village. The cross section for the improvements would include 1 through lane in each direction, turn lanes as necessary, on-street parking and pedestrian and bicycle facilities. Other improvements include storm drainage, LID, street lighting, pedestrian amenities, transit amenities, right-of-way, easements, and utilities.	Middle-Term	1 3 4	\$19,902,837	Overlake Master Plan
50	156th Avenue NE and Bel-Red Southbound Right-Turn Lane	Add southbound right-turn lane.	Near-Term	1 5	\$2,400,000	Overlake Master Plan, previous TFP
58, 60, 61	NE 40th Street Pedestrian and Bike Improvements from 520 to BRR	Improve NE 40th Street between SR 520 and Bel-Red Road to be a complete street for all modes of travel while maintaining the same number of vehicular lanes.	Middle-Term	1 2 3 4	\$4,631,000	Overlake Master Plan, Overlake Residential Area neighborhood plan, NE 40th St. Corridor Study. 58: previous Buildout Plan, 60 & 61: previous TFP
155	NE 31st Street Bike Lanes (Design)	Design bike lanes and intersection improvements from the NE 36th St Bridge roundabout to NE 156th Street.	Short-Term	1 3 4	\$400,000	Microsoft

LEGEND: 1 Support for Urban Centers 2 Neighborhood Access 3 Travel Choices & Mobility 4 Prepare for Light Rail 5 Support Freight Mobility

Table 10. Overlake TFP Projects (continued)

OVERLAKE						
ID	Name	Description	Expected	Significant Support For These Strategies	Cost Estimate	Source
175	NE 27th Street/ NE 28th Street New Connection	A new street connection from 152nd Ave. to 156th Ave. NE at NE 28th Street.	Near-Term	1 2 3 4	\$14,300,000	Overlake Master Plan, Group Health development agreement, previous Buildout Plan
315	Overlake Access Ramp (Local Street Portion)	Local access street connecting the Overlake Access Ramp roundabout and 152nd Avenue NE.	Middle-Term	1 2 3 5	\$18,572,000	Overlake Access Ramp Interstate Justification Report, Overlake design standards, Overlake Master Plan
349	NE 24th St. and Bel-Red Road Southbound Right-Turn Lane	Provide a southbound right-turn lane.	Middle-Term	1 2 3 5	\$1,160,000	Bellevue Redmond Transportation Study (BROTS) agreement, GHC development agreement, ST mitigation for East Link
353	NE 40th Street Sidewalk Rehabilitation	Replace sidewalks along the north side and part of the south side along the NE 40th Street between 164th Court and Bel-Red Road.	Near-Term	1 3 4	\$377,000	Staff and community input
355, 363	152nd Avenue NE Main Street - Phase 2 (PSBP and Between 24th and 31st)	Main Street improvements between NE 26th Street and NE 31st Street (half street improvements) and between NE 24th Street and NE 26th Street.	Long-Term	1 2 3 4	\$14,000,000	Overlake Residential Area neighborhood plan, Overlake Master Plan
367	148th Avenue NE Arterial Pavement Reconstruction	Reconstruct portions of and provide overlay of 148th Avenue from SR 520 to Redmond Way. Make drainage improvements where needed. Examine roadway channelization for improved efficiencies.	Middle-Term	1 2 3 4 5	\$2,873,000	Pavement Management Program

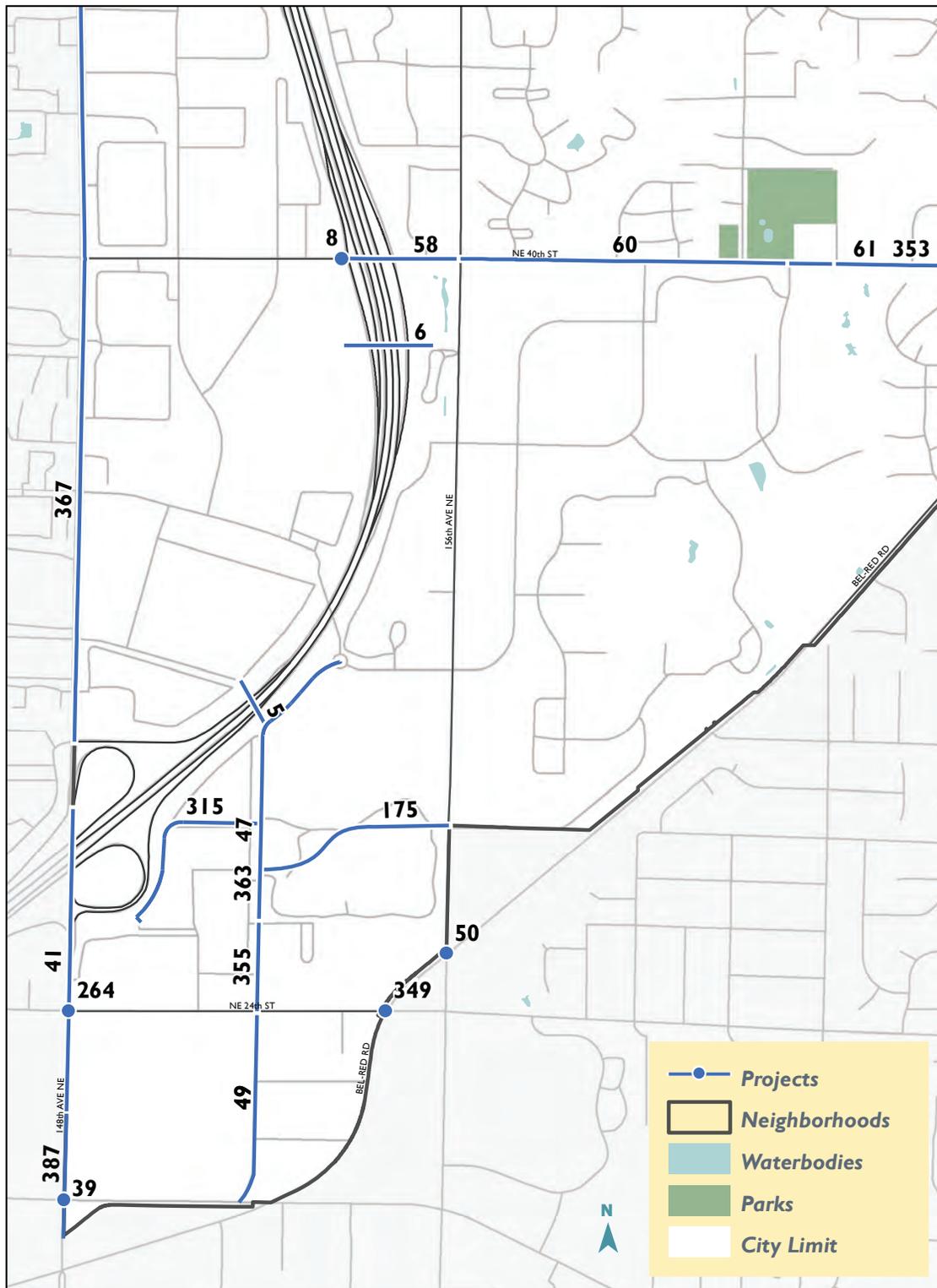
LEGEND: 1 Support for Urban Centers 2 Neighborhood Access 3 Travel Choices & Mobility 4 Prepare for Light Rail 5 Support Freight Mobility

Table 10. Overlake TFP Projects (continued)

OVERLAKE						
ID	Name	Description	Expected	Significant Support For These Strategies	Cost Estimate	Source
387	148th Ave NE Northbound Through Lane	Add northbound through lane on 148th Ave NE between Bel-Red Road and NE 26th St	Middle-term	1 3 4 5	\$10,002,823	Unfunded Buildout Plan
Overlake TFP Project Cost					\$146,775,660	

LEGEND: 1 Support for Urban Centers 2 Neighborhood Access 3 Travel Choices & Mobility 4 Prepare for Light Rail 5 Support Freight Mobility

Overlake Transportation Facilities Plan Projects

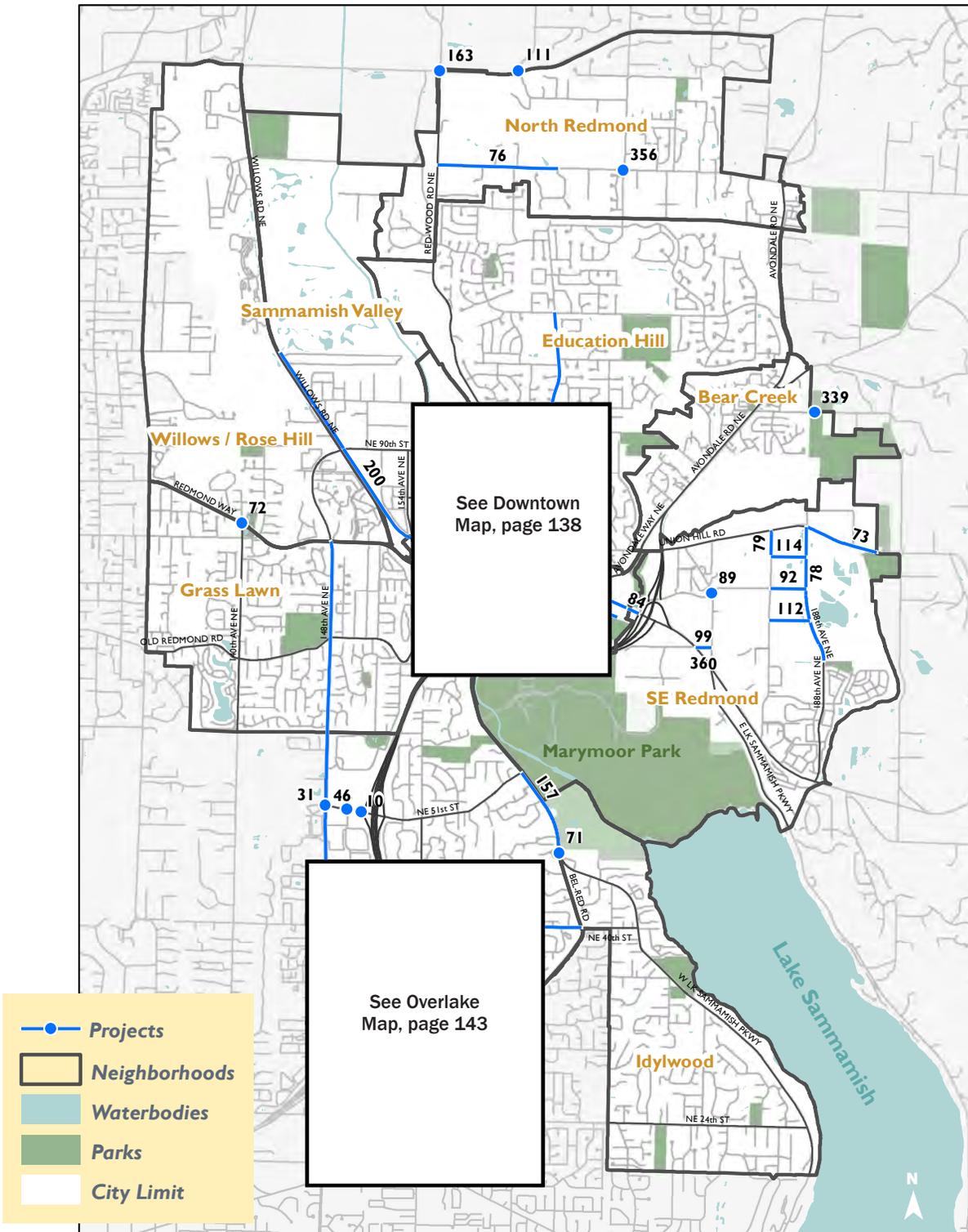


Note: projects shown are conceptual only; actual alignments may vary.

Figure 55. Overlake Transportation Facilities Plan projects

0 0.125 0.25 Miles

Neighborhood Transportation Facilities Plan Projects



Note: projects shown are conceptual only; actual alignments may vary.

Figure 56. Neighborhood Transportation Facilities Plan projects

0 0.5 1 Miles

Table 11. Neighborhood TFP Projects

NEIGHBORHOODS						
ID	Name	Description	Expected Implementation Time Period	Significant Support For These Strategies	Cost Estimate	Source
10	520 Trail Grade Separation at NE 51st St	Grade separate the 520 Trail at NE 51st Street.	Long-Term	1 2 3	\$3,900,000	Overlake Residential Area neighborhood plan, previous TFP
31	148th Ave NE and NE 51st St Westbound Right-Turn Lane	Add a second right turn lane from westbound NE 51st Street to Northbound 148th Avenue NE.	Middle-Term	1 3 5	\$1,032,000	Overlake Access Ramp Interstate Justification Report, Overlake design standards, Overlake Master Plan
46	150th Ave NE and NE 51st Street Traffic Signal	Add north leg to intersection of 150th Ave and 51st St and signalize this intersection.	Middle-Term	1 2 3	\$700,000	Overlake Master Plan, previous TFP
71, 157	West Lake Sammamish Parkway Widening & Roundabout Phase 1	Construct a roundabout at West Lake Sammamish Parkway and Bel-Red Road and widen West Lake Samm. Pkwy from NE 51st Street to Bel-Red Road.	Middle-Term	2 3	\$9,000,000	Idylwood and Overlake Residential Area neighborhood plans, previous TFP
72	140th Ave NE and Redmond Way Turn Lanes	Add second northbound left turn lane and extend bicycle lanes from 80th Street through the intersection of 140th Ave and Redmond Way.	Middle-Term	3	\$1,948,000	Previous TFP
73	Union Hill Rd Phase III Widening	Widen Union Hill Rd from 188th Avenue NE to eastern City Limits.	Near-Term	2 3 5	\$4,960,000	SE Redmond Area Transportation Study, previous TFP
76	NE 116th St	Complete bicycle facilities as well as the sidewalk on the north side of NE 116th Street between Red-Wood Road and 167th Place NE.	Middle-Term	2 3	\$1,719,077	North Redmond neighborhood plan, previous Buildout Plan
78	188th Avenue NE Extension	Construct new 188th Ave NE arterial from Redmond Way to Union Hill Rd.	Near-Term	2 3 5	\$23,400,000	SE Redmond Area Transportation Study, Taylor development agreement, previous TFP

LEGEND: 1 Support for Urban Centers 2 Neighborhood Access 3 Travel Choices & Mobility 4 Prepare for Light Rail 5 Support Freight Mobility

Table 11. Neighborhood TFP Projects (continued)

NEIGHBORHOODS (continued)						
ID	Name	Description	Expected Implementation Time Period	Significant Support For These Strategies	Cost Estimate	Source
79	185th Ave NE Extension (complete)	Construct new 185th Ave NE arterial from NE 80th St to Union Hill Rd.	Near-Term	2 3 5	\$2,696,568	SE Redmond Area Transportation Study, UPS development agreement, previous TFP
84	Redmond Way Bridge Modifications and Additions Over Bear Creek	Rechannelize bridge, replacing the sidewalk on the south side of bridge with a second eastbound left turn lane. Build a ped/ bike bridge on the south side of bridge, designed to accommodate a future connection between Bear Creek Trail and East Lake Sammamish Trail.	Long-Term	1 2 3 5	\$10,000,000	NE 76th Street Corridor Study, previous TFP
89	NE 76th St & 178th PI NE Intersection Improvements	improve the intersection and to accommodate turning movements, trucks, bikes, pedestrians, and better sight lines.	Near-Term	2 3 5	\$1,400,000	NE 76th Street Corridor Study, Freight Mobility Study, previous TFP
92	NE 76th St Extension	Construct new NE 76th St from 185th Ave NE to 188th Ave NE.	Near-Term	2 3 4 5	\$15,660,000	NE 76th St Corridor Study, staff, Taylor development agreement, previous TFP
99	NE 70th Street Extension Phase 1	Provide the Right-Of-Way and the interim street improvements.	Middle-Term	2 3 4	\$490,000	SE Redmond Area Transportation Study, previous TFP
111	162nd Avenue and 124th Street Intersection Improvement	Construct a new traffic signal at 124th Ave NE and 162nd PI NE. Includes the addition of turn lanes on NE 124th and modifications on 162nd PI for sight distance. Must meet signal warrant.	Middle-Term	2 3	\$896,000	North Redmond neighborhood plan, previous TFP
112	NE 73rd St Extension	Construct new NE 73rd St from 185th Ave NE to 188nd Ave NE.	Middle-Term	2 3 5	\$10,250,000	Taylor development agreement, previous TFP
114	NE 80th Street Trail Connection	Construct new NE 80th St Trail from 185th Ave NE to 188th Ave NE.	Middle-Term	2 5	\$1,598,000	Taylor development agreement, previous TFP

LEGEND: 1 Support for Urban Centers 2 Neighborhood Access 3 Travel Choices & Mobility 4 Prepare for Light Rail 5 Support Freight Mobility

Table 11. Neighborhood TFP Projects (continued)

NEIGHBORHOODS (continued)						
ID	Name	Description	Expected Implementation Time Period	Significant Support For These Strategies	Cost Estimate	Source
163	SR 202 & NE 124th St Intersection Improvements (complete)	Add lanes at the intersection, improve ped and bike facilities, and modify traffic signal control and management .	Near-Term	3 5	\$5,125,491	North Redmond neighborhood plan, Wedge subarea plan, RedWood Corridor Study, previous TFP
200	Redmond Central Connector Segment II	Complete the RCC between Sammamish River Trail and NE 100th Street.	Near-Term	1 2 3 4	\$5,590,000	Willows corridor study, previous TFP
339	NE 95th Street Bridge Replacement	Replace the NE 95th Street Bridge over Bear Creek.	Near-Term	2 3	\$330,000	Dept. of Ecology Requirement, staff and community input, Bear Creek Neighborhood Plan
356	NE 116th and 172nd Avenue NE Roundabout	Construct a roundabout at NE 116th Street and 172nd Avenue NE.	Near-Term	2 3	\$6,500,000	NE 116th St corridor design process, North Redmond neighborhood plan, previous TFP
360	NE 70th Street Extension Phase 2 Construction	Construct a new street connection up to City standards on NE 70th Street between 180th Avenue NE and Redmond Way.	Middle-Term	2 3 4	\$2,500,000	SE Redmond Area Transportation Study, previous Buildout Plan
Neighborhoods TFP Project Cost: \$109,695,136						

LEGEND: **1** Support for Urban Centers **2** Neighborhood Access **3** Travel Choices & Mobility **4** Prepare for Light Rail **5** Support Freight Mobility

Table 12. Citywide TFP Programs

CITYWIDE PROGRAMS						
ID	Name	Description	Expected Implementation Time Period	Significant Support For These Strategies	Cost Estimate	Source
100	Bicycle Program	Build out the bicycle transportation network in order to provide a safe and comfortable bicycling experience for users of all ages and ability.	Long-Term	1 2 3 4	\$8,323,302	Started in 2006
103	Bridge Repair Program	Maintain the structural integrity and safety of the City's bridges.	Long-Term	2 3 5	\$1,350,000	Started in 2001
107	Capital Improvement Program	Advance the delivery of Transportation Facilities Plan (TFP) projects and programs through project development, which includes planning, design, partnerships, and grant acquisition.	Long-Term	1 2 3 4 5	\$2,340,000	Started in 2001
104	Channelization Program	Install new pavement markings where they are missing and where they are most needed to provide guidance for pedestrians, bicyclists, and motorists; and repair crosswalks and stop bars.	Long-Term	1 2 3	\$1,350,000	Started in 2001
106	Engineering Contingency Program	Funds engineering and construction activities undertaken in response to unanticipated events and emergencies.	Long-Term	3	\$1,800,000	Started in 1990
80	Neighborhood Traffic Calming Program	Investigate, evaluate and resolve excessive neighborhood speed or volume problems, and concerns regarding school-children and pedestrians.	Long-Term	1 2 3	\$2,726,045	Started in 1995

LEGEND: **1** Support for Urban Centers **2** Neighborhood Access **3** Travel Choices & Mobility **4** Prepare for Light Rail **5** Support Freight Mobility

Table 12. Citywide TFP Programs (continued)

CITYWIDE PROGRAMS						
ID	Name	Description	Expected Implementation Time Period	Significant Support For These Strategies	Cost Estimate	Source
329	Parking Program	Develop and implement a successful 'parking system' that improves access to businesses and services for customers, visitors, residents, students and employees.	Long-Term	1 2 3	\$2,250,000	Started in 2013
386	Pavement Management Program	Conduct pavement preservation related activities on Redmond's paved streets.	Long-Term	1 2 3 5	\$41,127,590	Started in 1990
101	Pedestrian Program	Improve pedestrian safety and comfort by building new sidewalks and shared use paths.	Long-Term	1 2 3 4	\$26,797,139	Started in 1995
108	Street Light Program	Improve street lighting in areas where users are most exposed, such as crosswalks, intersections, and along walking routes.	Long-Term	2 3	\$943,024	Started in 2001
102	Targeted Safety Improvement Program	Identify existing and potential traffic safety problem areas and implement projects to prevent incidents, injuries, deaths, and their related losses.	Long-Term	1 2 3	\$8,150,000	Started in 2006
330	Transit Service Program	Partnership funding for transit service in corridors that connect Redmond's neighborhoods and urban centers.	Long-Term	1 3 4	3,150,000	Started in 2013

LEGEND: **1** Support for Urban Centers **2** Neighborhood Access **3** Travel Choices & Mobility **4** Prepare for Light Rail **5** Support Freight Mobility

Table 12. Citywide TFP Prorams (cntinued)

CITYWIDE PROGRAMS						
ID	Name	Description	Expected Implementation Time Period	Significant Support For These Strategies	Cost Estimate	Source
109	Transportation Concurrency	Provide analysis tools and performance measure data to ensure that project and program delivery is aligned with the TMP strategies, and to track TMP implementation to ensure that it achieves the transportation vision while meeting state requirements to provide sufficient capacity to accommodate growth.	Long-Term	1 2 3 4 5	\$1,800,000	Started in 2001
105	Transportation Demand Management Program	Implement coordinated regulation and policies, and provides grants, partnership resources, and incentives to Redmond businesses and community members to manage user demand on a finite transportation system.	Long-Term	1 3 4	\$17,406,000	Started in 1997
110		Provide funding to complete undergrounding of overhead utilities according to the Redmond Comprehensive Plan, Zoning Code, and Transportation Master Plan to improve reliability, safety, and aesthetics.	Long-Term	1	\$1,800,000	Started in 2001
Total TFP Program Cost: \$121,313,100						
Total TFP Project Cost: \$303,116,981						
Total TFP Cost Including Projects and Programs: \$424,430,081						

LEGEND: 1 Support for Urban Centers 2 Neighborhood Access 3 Travel Choices & Mobility 4 Prepare for Light Rail 5 Support Freight Mobility

Programs

There are 15 programs in the TFP listed in Appendix G. These programs encompass many citywide projects and activities focused on advancing a clear objective, as well as having enough flexibility to be responsive to the community and leveraging opportunities. Focus is on the following objectives:

- **Advance delivery of the TFP:** move projects and programs toward implementation and delivery through strategic practices, including system measurement, conditions modeling, design efforts, and maximized leveraging through grants and partnership funding. The overall objective is to advance delivery of the TFP in support of the land use vision. (Capital Improvement Management and Concurrency Programs)
- **Safety:** address the safety needs for all transportation users by investigating, identifying, mitigating, and preventing excessive risk or damages related to the transportation system. The program objective is to assure that basic safety needs are met throughout the city. (Neighborhood Traffic Calming, Street Light, Targeted Safety Improvements, and Undergrounding Programs)
- **Preservation:** maintain transportation infrastructure in a “state of good repair.” The program addresses the preservation of major capital transportation infrastructure (bridges, pavements, and sidewalks/curbs) through inspection, rehabilitation, renovation, and replacement. (Bridge Repair, Channelization, Contingency, and Pavement Management programs)
- **Active Transportation:** enable and encourage pedestrian and bicycle transportation through infrastructure, partnerships, and education. (Bicycle and Pedestrian Programs)
- **Parking:** provide improved access to businesses by creating and maintaining managed short-term and long-term parking spaces. (Parking Program)
- **Transit Service:** provide travel choices by increasing the amount of transit service in the community through partnerships with transit agencies, local employers, and nearby communities. (Transit Service Program)
- **Business Mobility and Community Travel Choices:** maximizes the efficient use of transportation infrastructure through travel choices, market development, travel resources, and streamlined regulation. (Transportation Demand Management Program)

Funded Portion of Buildout Plan

To fully fund all of the needed projects in the Buildout Plan requires more revenue than is forecast for the financially constrained 18-year TFP (Figure 57). The estimated cost to build all projects within the Buildout Plan based on current cost estimates is \$1,060,000,000 and the available revenues for the 18-year TFP are \$389 million or about 37 percent of the Buildout Plan. The total cost of the Buildout Plan may vary as cost estimates are revised with more up-to-date information.

Stability of Revenue Sources:

- Gas tax revenue is based on consumption; gasoline tax revenues will decrease as drivers change to other modes of travel and choose vehicles that are more fuel efficient.
- REET is tied to the economy and local real estate market.
- General Fund is tied to economy plus City policy. In addition, in order to fund maintenance and operations on already built transportation infrastructure, the amount of General Fund revenue available for new transportation projects may decrease over time.
- Grant awards are sought in a highly competitive market for both federal and state grants and are tied to the availability of funding.
- Developer contributions have decreased due to plan-based concurrency system and are difficult to forecast in the outer years.

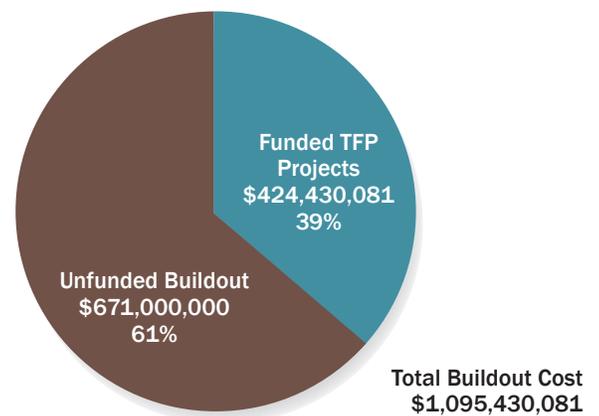
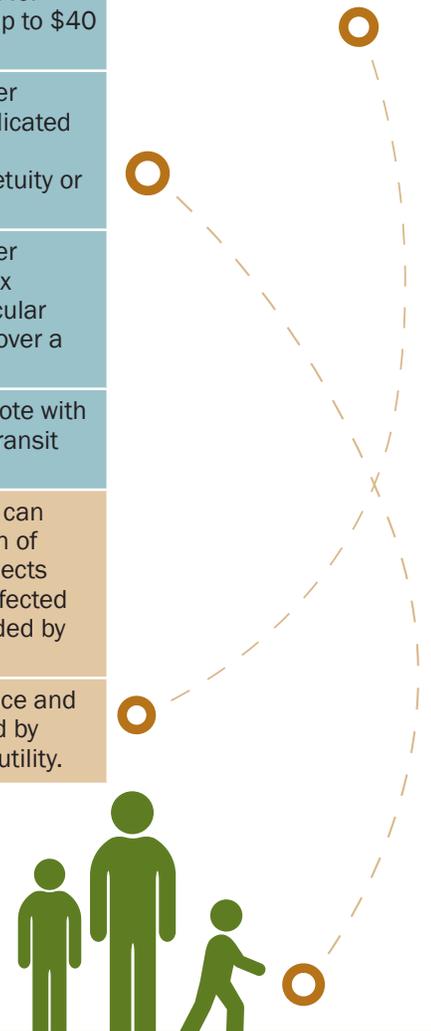


Figure 57. Funded portion of Buildout Plan

Potential Revenue Sources

	Potential Revenue Sources	Description
Increase Existing Rates or Fees	Increase Business Tax Rate	The current rate for Transportation is \$57 per FTE per year.
	Sales Tax Increase	Requires voter approval; dedicated to transportation projects.
	Increase Impact Fee Rates	Rates were most recently updated in late 2007; since then there have been small inflationary increases.
	Gas Tax Increase	Cities and counties receive a share.
Increase Property Tax/Vehicle	Vehicle License Fee	Increase \$20 per vehicle councilmanically or up to \$100 per vehicle with voter approval per current legislative authority. Seek legislative approval for councilmanic authority up to \$40 per vehicle.
	Levy Lid Lift	Requires 50 percent voter approval and can be dedicated toward transportation improvements into perpetuity or for a specified time.
	Voter Approved Bond Issue for Transportation	Requires 60 percent voter approval of a property tax increase to pay for particular improvements financed over a specified time period.
	Motor Vehicle Excise Tax (MVET)	Councilmanic or public vote with revenue distributed for transit and roads.
Other Revenue Sources	LID/Transportation Benefit District for specific projects or groups of projects	Requires voter approval; can be used to fund a portion of a project or group of projects based on appraisal of affected properties and value added by the improvements.
	Street Utility	Pay for street maintenance and overlays currently funded by General Fund through a utility.



Appendix A: Public Engagement

The Redmond community played a central role in guiding the development of the Transportation Master Plan (TMP). This process included three stakeholder workshops, three open house events, presentations at community events, online outreach, and a continuous focus on existing direction from the public as represented by the City vision, community priorities, and Comprehensive Plan.

The community involvement process began in the spring of 2010 with a statistically valid travel survey of 410 Redmond households and 470 employees. The data from this survey informed the TMP Update about how people are choosing to travel in the city today, and were inputs to the travel demand forecast model used to calculate several of the performance measures.

The City then held a series of meetings intended to gather ideas from the community and later to validate the draft Buildout Plan (see Figure 58. Major community events and outcome). These meetings included targeted stakeholder workshops for representatives of major constituencies (e.g., residents, business leaders, nonprofit organizations, the development community, transportation agencies), to large-scale open house events. Earlier events focused on exploring sustainable transportation and sustainability and identifying transportation needs and priorities; the last community event was an opportunity for participants to review draft TMP principles and the draft Buildout Plan, and either express concerns or validate the direction of the plan. Feedback from the community guided the overall direction of the plan; for example, its emphasis on providing travel choices, which was a consistent message from community involvement activities throughout the process. Feedback from TMP events and the neighborhood planning processes also led to the inclusion of specific projects in the TFP and Buildout Plan.

Redmond 2012 Transportation Master Plan (TMP) Update

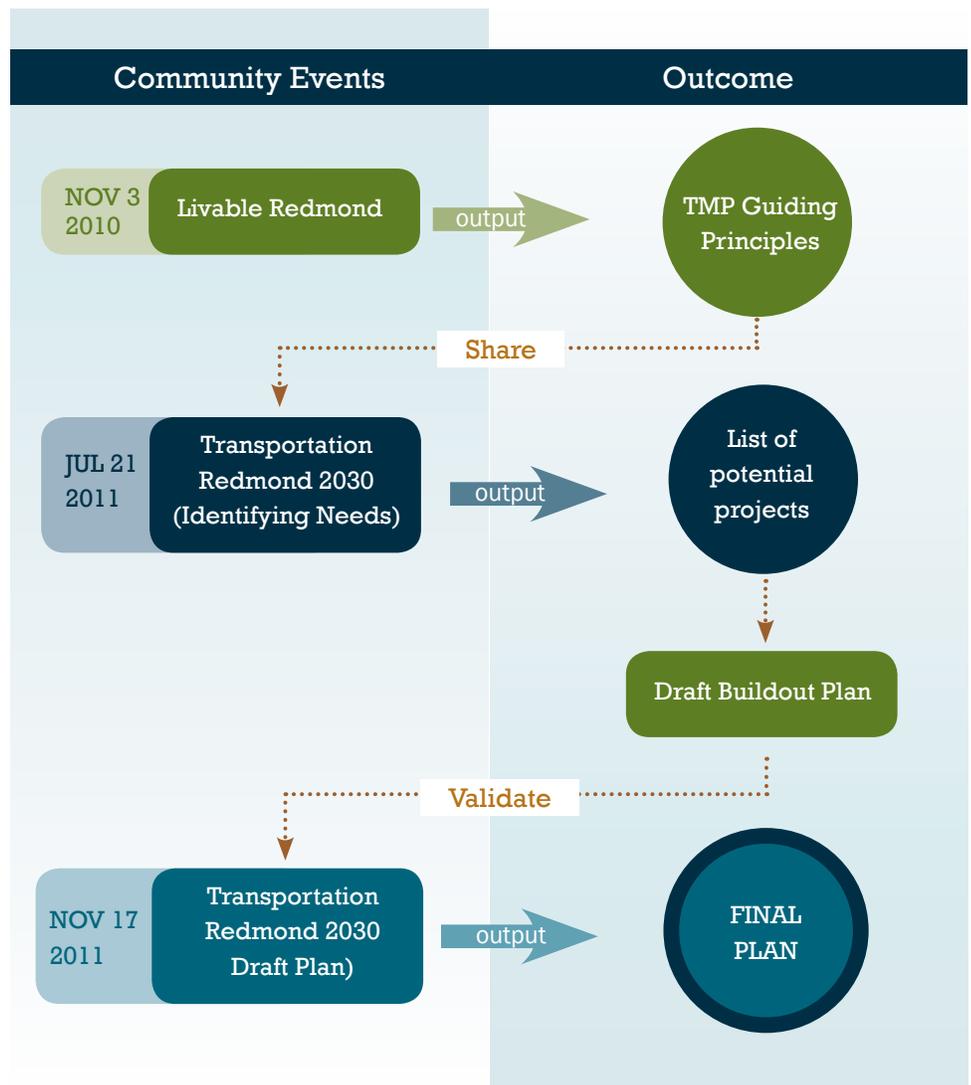


Figure 58. Major community events and outcome

Attendance at the TMP events ranged from the dozens (for the stakeholder workshops) up to about 75 at the last open house event (November 17, 2011). Several were covered by the Redmond Reporter newspaper, and some were highlighted on the calendars of local transportation organizations.

Online, the City maintained a web page for the TMP where users could review content and answer an opinion questionnaire on the progress of the TMP update. The questionnaire stood open between and received 43 responses which were generally supportive or strongly supportive of the TMP. Over 400 people opted in to a mailing list to receive TMP updates. Also as part of the community involvement process, the City solicited feedback from the public through its Facebook and Twitter accounts. The public also had the opportunity to submit comment on the Transportation Master Plan at two public hearings on April 10th and April 24th 2013, which were hosted by the Redmond Planning Commission during the public comment period. Six individuals gave comment at those meetings.



Members of the public at a Transportation Master Plan outreach event.

Appendix B: Supplementary Performance Measures

Annual Vehicular Volume Change at Screenlines

This indicator is the set of year-over-year percentage changes in traffic volumes at each of the City's 11 screenlines (see Figure 59), which are the same as those used to calculate volume-to-capacity ratios. It provides an overall picture of how traffic volumes are changing in the city. There are no volume change targets; this measure is used primarily for trend analysis.

Unit	Annual percent change in traffic volume by screenline
Baseline	2010
Objective	Not applicable
Reporting frequency	Yearly
Data source	City of Redmond Department of Public Works

Average Motor Vehicle Traffic Change by TMD

Redmond is divided into seven Transportation Management Districts (TMD)—geographic subdivisions used for transportation planning purposes. Each year Redmond counts automobile traffic on city arterials, and the volumes are summed by TMD and compared to previous years.

Occasionally, specific count locations are unavailable due to construction or for other reasons. When this occurs, an estimate will be made by applying a citywide percentage change factor to the last complete count for that location.

Unit	Annual percent change in traffic volume, by TMD
Baseline	2010
Objective	Not applicable
Reporting frequency	Yearly
Data source	City of Redmond Department of Public Work

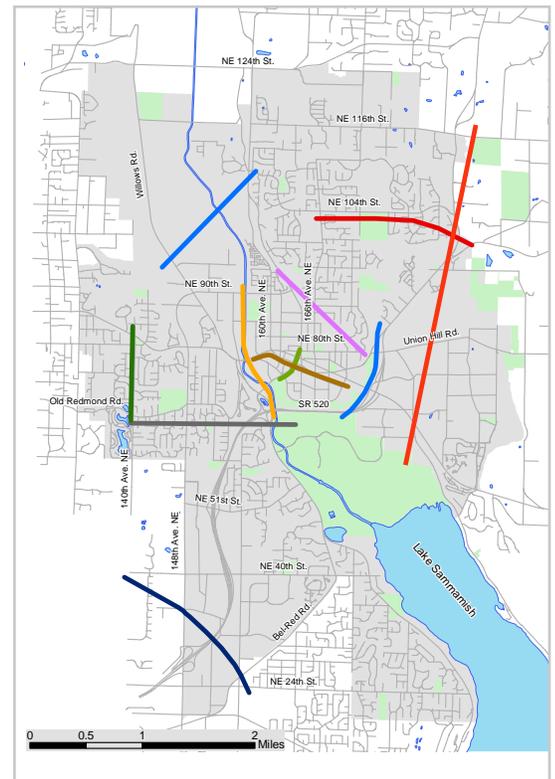


Figure 59. Traffic count screenlines

Completion of Transportation Facilities Plan

This measure reports the percentage of Transportation Facilities Plan funding that has been allocated to date, the percentage of the Transportation Facilities Plan funding that would be allocated to date assuming steady and proportionate funding each year, and the percentage point difference between the two.

Unit	Percent of TFP funding allocated to date, by mode
Baseline	2013
Objective	Commit, on average, approximately 6 percent of the TFP per year
Reporting frequency	Yearly
Data source	City of Redmond Department of Planning and Community Development

Pedestrian and Bicycle Volumes

Each fall, the City of Redmond counts pedestrians and bicyclists at 12 locations around the city as part of its annual traffic count program. Pedestrian and bicycle volumes are expressed as a percentage change from the volumes in 2010. The PM peak (4-6 p.m.) volumes from all sites are aggregated, and the resulting number is then compared to the 2010 baseline as a percentage change. Targets are derived from the City of Redmond travel model, given expected transportation investments and land use changes.

Unit	Average annual percent change in pedestrian and bicycle traffic
Baseline	2010
Objective	Increase bicycling 75 percent by 2030. Increase walking by 110 percent by 2030.
Reporting frequency	Yearly
Data source	City of Redmond Department of Planning and Community Development

Percentage of Project Funding Completed with Leveraged Dollars

This is the percentage of committed project funding that is provided by project partners, such as the Washington State Department of Transportation or the federal government. Grant funding allows the City of Redmond to accomplish more improvements with each tax dollar.

Unit	Percent of committed project funding coming from grants
Baseline	2010
Objective	Fund 10 percent of the TFP with grants
Reporting frequency	Yearly
Data source	City of Redmond Department of Planning and Community Development

Status of Three-Year Action Plan

This table reports the completion status of all Three-Year Action Plan items identified in Chapter 8. Together with concurrency, this performance measure provides an indication of whether the City is meeting its Transportation Master Plan implementation goals.

Unit	Percent of Three-Year Action Plan items complete
Baseline	2012
Objective	100 percent for each three-year period
Reporting frequency	Yearly
Data source	City of Redmond Department Planning and Community Development

Transit Performance

In addition to ridership—one of the dashboard performance measures—transit is evaluated on several other measures. These help staff work with regional transit providers to ensure a high quality of service for Redmond commuters and residents.

Service Hours

Service hours are the number of hours spent carrying passengers, plus associated deadhead hours. Service hours are one indicator of the amount of transit service provided.

Unit	Service hours for routes serving Redmond
Baseline	2010
Objective	Increase
Reporting frequency	Yearly
Data source	City of Redmond Department of Planning and Community Development

Local and Regional Connections

Unit	Frequency, travel time, and span of service for transit connections between the following list of origins and destinations: In Redmond: Downtown, Overlake, Education Hill, North Redmond, Avondale, Bear Creek, Southeast Redmond, Idylwood, Overlake Transit Center, Overlake Village, Grass Lawn, Willows Road Outside Redmond: Downtown Kirkland, Totem Lake, Downtown Bellevue, Crossroads, University District/UW, Downtown Seattle
Baseline	2010
Objective	Meet standards described in Transit chapter
Reporting frequency	Yearly
Data source	City of Redmond Department of Planning and Community Development

Access

Unit	The percentage of jobs and housing (2030 projection) with half-mile access to a transit stop
Baseline	2010
Objective	80 percent of Redmond jobs and housing units
Reporting frequency	Every two years
Data source	City of Redmond Department of Planning and Community Development

High Frequency Corridors

Unit	Percent of high-frequency priority corridors (see Chapter 4-2) by length that are achieving their frequency targets
Baseline	2012
Objective	15-minute headways or better from 6 a.m. to 6 p.m.
Reporting frequency	Yearly
Data source	City of Redmond

Appendix C:

Concurrency Management and Level of Service

Introduction

The TMP represents a multimodal approach to addressing transportation and includes programs, projects, and services that are intended to serve the communities transportation and land use vision as articulated in the Redmond Comprehensive Plan. The City of Redmond's plan-based transportation concurrency system is a tool to ensure the pace of development does not exceed the pace at which the multimodal, growth-related program, projects, and services included in the TMP are implemented.

The 2004 Comprehensive Plan and 2005 TMP established the framework for a new plan-based concurrency management system that would ensure the City meets its level of service (LOS) standard of growth occurring proportionately and in parallel with development of the City's transportation system. This was a significant change from the prior LOS and concurrency management system which was based solely on measuring vehicle LOS at system intersections in seven Transportation Management Districts. This system was determined to be inconsistent with other Comprehensive Plan policy.

After the adoption of the 2005 TMP, the City embarked on a study to implement plan-based concurrency and the City's new LOS standard. The study resulted in establishing an LOS based on citywide person miles traveled, also referred to as Mobility Units. The study also resulted in updates to the City's Zoning Code consistent with Comprehensive Plan policy TR-27, which describes that Redmond's transportation concurrency management system is based on a "plan-based" approach to ensure that funding of programs, construction of projects, and provision of services occur in proportion to the needs of the City and the pace of growth. Another part of the study was determining how the new system would be administered to ensure implementation of growth-related multimodal transportation programs, projects, and services consistent with the Comprehensive Plan policy and the TMP. The resulting plan-based concurrency system now in place ensures the City is meeting the requirements of the Washington State Growth Management Act (GMA), while also simplifying the development review process.

The foundation of the plan-based concurrency system is an up-to-date plan of programs, projects, and services that supports the community land use vision. The TMP includes the Transportation Facilities Plan (TFP), which is multimodal in scope, financially constrained, and based on Redmond's 2030 vision of a balanced land use and transportation system. The TFP represents a plan that responds to existing growth trends and prepares for future growth in the city's two urban centers while continuing to improve transportation within established neighborhoods.

The TMP also includes a Performance Measurement chapter which provides transportation system monitoring beyond what is required in this chapter to meet GMA level of service and concurrency requirements. The Performance Measurement chapter provides specific performance measures

Plan-based concurrency is about building transportation capacity in a way that supports the community's vision.

reported out annually for various transportation modes allowing the City to better manage the transportation system. This also allows the concurrency management system to focus on ensuring that implementation of growth-related programs, projects, and services included in the TFP keeps pace with growth.

Framework

The plan-based concurrency system is based on analysis of 2030 land uses (as contained in the Comprehensive Plan) and the 2030 TFP, which is designed to provide sufficient capacity for that land use. To maintain concurrency, then it will be necessary to appropriately pace land development with multimodal transportation system programs, projects, and services.

The overall concept for maintaining this critical balance of transportation concurrency in Redmond is shown in the figure below. The committed, complete, and existing “bucket” in the bottom right illustrates the short-term capacity that will be available to new development based on progress made by the City in implementing transportation programs, projects, and services.

Level of Service

The level of service measure for concurrency is to demonstrate completion of the multimodal transportation system is occurring at the same rate or a faster rate than the growth in travel demand.

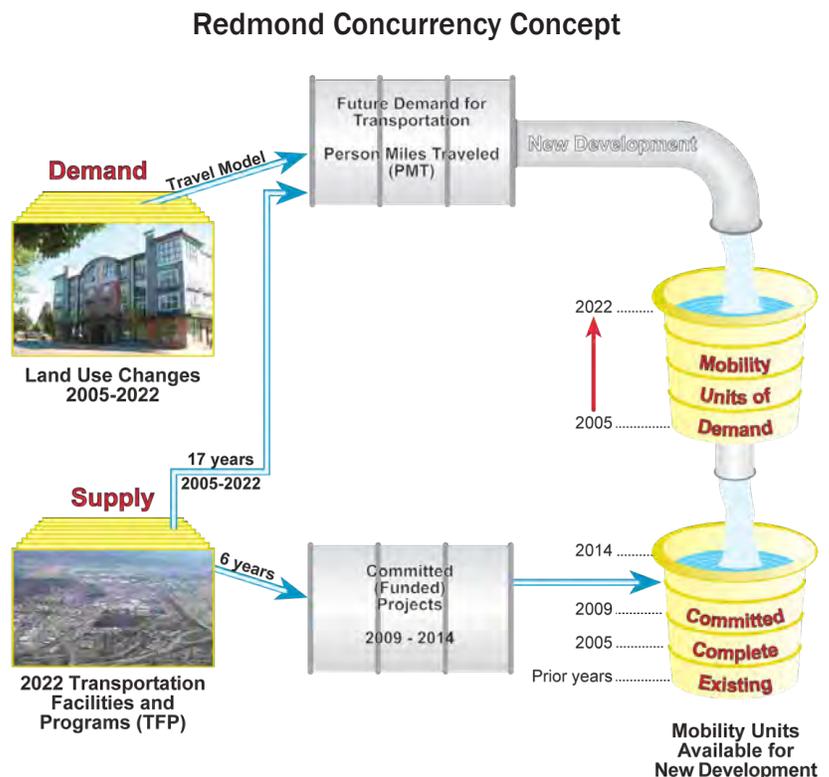
Demand

Measuring concurrency requires the creation of an apples-to-apples comparison between demand for and supply of multimodal transportation infrastructure. The starting point for this comparison is the development of a land use summary table. This table summarizes the total amount of new development, measured in the number of residential dwelling units and square feet of nonresidential space in 2010 and the 2030 land uses forecasted by district. The growth in development is calculated as the difference in the 2030 and 2010 land uses.

Conventional planning practice determines transportation impacts by calculating the number of automobile trips that will be generated by the forecast land uses. Using a multimodal approach, the new plan-based concurrency system relies on a mode-neutral measure known as the “mobility unit” (measured in terms of person miles traveled rather than vehicle miles traveled or automobile delay).

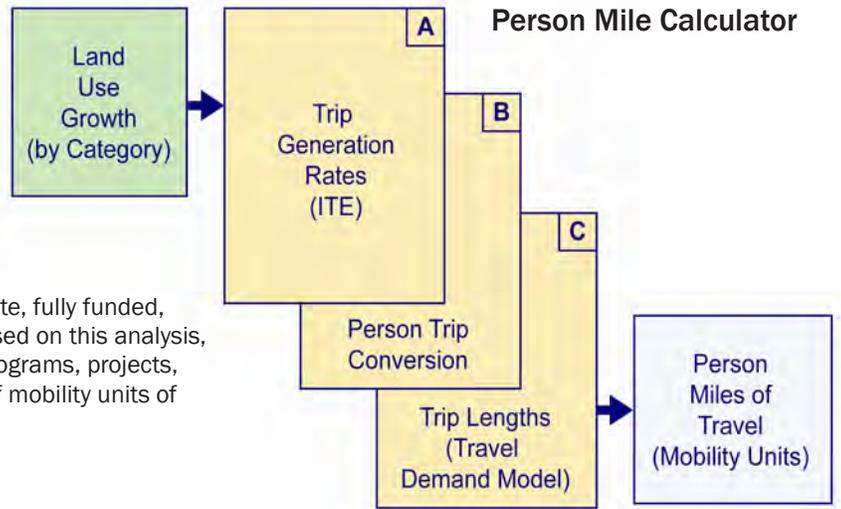
Supply

Based on adopted plans and policies, the list of transportation programs, projects, and services to be implemented by 2030 is expected to be sufficient to meet the travel demand generated by new development. A key element of the plan-based concurrency system is communicating how much of the 2030 TFP is implemented within the six-year concurrency window.



In order to measure the amount of capacity available for each travel mode (e.g., bicyclists, motorists, pedestrians, and transit users), the City developed a measure called “system completion.”

The analysis uses the capacity-enhancing list of transportation programs, projects, and services from the 2030 TFP with cost estimates for each. Next, the analysis evaluates their status by determining how many projects are complete, fully funded, or partially funded in the City’s Six-Year Program. Based on this analysis, the percent of committed capacity-enhancing TFP programs, projects, and services is determined, as well as the number of mobility units of supply available.



Concurrency Management

Using the calculations described for supply and demand above, concurrency is determined by comparing the available transportation mobility units against the demand for mobility units generated by new development. To manage the pace of development in the short term, the concurrency test focuses on “how much room is left in the Six-Year Bucket?” This test entails a comparison of the available mobility units based on projects funded or constructed in the time horizon of the Six-Year Program, as required under the GMA. One important step in this process is to account for the mobility units that have been allocated for “pipeline” development projects that have been approved by the City but not yet occupied.

Available Mobility Units - Comparing Supply to Demand

The available mobility units are calculated by comparing the available supply to the demand. As shown below, the supply of mobility units represents the proportion of the TFP that is committed to be built during the next six years. As previously described, approximately 60 percent of the mobility units are currently available for development. The current demand for mobility units is represented by the amount of pipeline development approved within the city.

Management System and Development Review

Under the proposed plan-based concurrency system, concurrency approval of a proposed development is based on the availability of mobility units within the mandated six-year time frame. To manage the pace of development in the short term, the concurrency test will focus on “how much room is left in the Six-Year Bucket?” This test will entail a comparison of the available mobility units based on projects funded or completed in the Six-Year Program time horizon, as required under the GMA.

As part of the concurrency review process, each development proposal would be analyzed to determine the number of mobility units expected to be generated by the development. This demand for mobility units would then be compared to the available mobility units within the City’s Six-Year Program. If sufficient mobility units are available, then the development is considered to be concurrent.

If the development is deemed to be not concurrent, then the applicant would need to wait until additional mobility units become available or pay for additional mobility units to offset the impacts of the development. Mobility units become available as additional projects are funded and committed by the City within its Six-Year Program, the Transportation Improvement Program, and Capital Investment Program. Alternatively, an applicant could agree to accelerate the implementation of key infrastructure projects in order to provide sufficient transportation system capacity. This process would be similar to the supplemental mitigation procedures currently used under the City’s existing concurrency regulations.

Once concurrency is achieved, the proposed development would need to comply with SEPA requirements, applicable City zoning and building codes, and pay transportation impact fees.

Trends and Conditions

Comparing Supply and Demand

The current demand for mobility units (person miles of travel) is based on the total amount of development that is either in the development design and review “pipeline,” under construction or complete during the planning horizon. Based on current development, 35,429 mobility units of demand planned for in the 2005 Transportation Master Plan have been allocated to these projects.

The current supply for mobility units is based on the total amount of capacity-enhancing programs, projects, and services in the Transportation Facility Plan which are either complete or committed. This is also referred to as system completion. Based on analysis of completed projects and the current Six-Year TIP, there are 44,060 mobility units of supply available.

The comparison of current mobility unit demand and mobility unit supply available determines the amount of mobility units available for new development. The City currently has 8,631 mobility units of supply available ($44,060 - 35,429 = 8,631$).

System Completion

System completion refers to the portion of the TFP that is complete or committed. The result of this analysis showed that the total system completion equals the sum of the Six-Year Transportation Improvement Program (TIP)/Capital Improvement Program (CIP) (60 percent).

Highway Levels of Service

The Washington State Growth Management Act requires that cities’ comprehensive plans include “[e]stimated traffic impacts to state-owned transportation facilities resulting from land use assumptions to assist the department of transportation in monitoring the performance of state facilities, to plan improvements for the facilities, and to assess the impact of land-use decisions on state-owned transportation facilities.”¹ Redmond has two state routes within its borders: SR 520 and SR 202 (Redmond-Woodinville Road NE/Redmond Way). Table 13. V/C ratios for highways of state significance in Redmond, includes volume-to-capacity (V/C) ratios for the Redmond extents of these facilities for the 2010 baseline and in 2030 with projected land-use changes and completion of the Transportation Facilities Plan (see Chapter 7 – Transportation Facilities Plan). The 2030 land use data used in estimating the V/C ratios are consistent with the adopted 2030 land use growth targets for the City of Redmond (see Chapter 2 – Trends and Conditions)

¹ RCW 36.70A.070(6)(a)(ii)

Mobility Units Concept

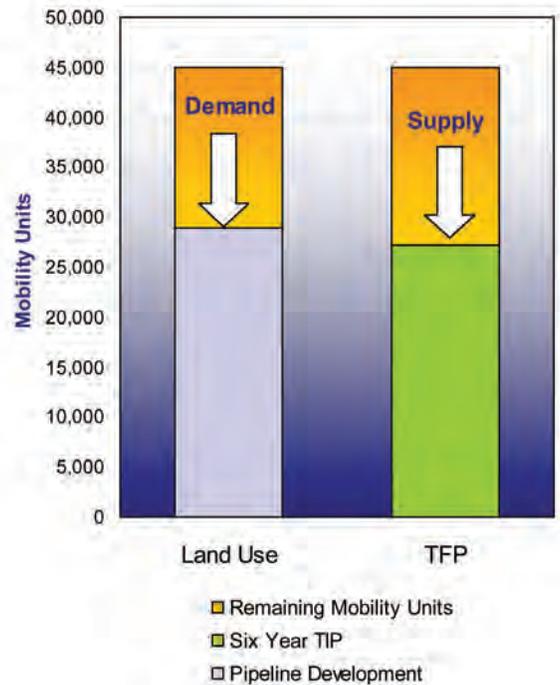


Table 13. V/C ratios for highways of state significance in Redmond

Corridor	Volume to Capacity (V/C Ratio)			
	2010		2030 TFP	
	MD	PM	MD	PM
SR 520 WB from Redmond Way to West Lake Sammamish Parkway NE	0.79	0.82	0.89	0.89
SR 520 EB from Redmond Way to West Lake Sammamish Parkway NE	0.75	1.16	0.84	1.17
SR 520 WB from West Lake Sammamish Parkway NE to NE 51st Street	0.61	0.55	0.67	0.57
SR 520 EB from West Lake Sammamish Parkway NE to NE 51st Street	0.62	0.85	0.62	0.89
SR 520 WB from NE 51st Street to NE 40th Street	0.61	0.57	0.71	0.67
SR 520 EB from NE 51st Street to NE 40th Street	0.42	0.62	0.54	0.72
SR 520 WB from NE 40th Street to 148th Avenue NE	0.58	0.54	0.72	0.71
SR 520 EB from NE 40th Street to 148th Avenue NE	0.49	0.58	0.6	0.68
Redmond Woodinville Road NE (SR 202) from NE 90th Street to NE 124th Street	0.92	1.34	1.06	1.66
Red-Wood Road (SR 202) from NE 85th Street to NE 90th Street	0.73	0.81	0.79	0.97
164th Avenue NE (SR 202) from NE 85th Street to Redmond Way	0.74	0.83	0.92	1.07
Redmond Way (SR 202) from 164th Avenue NE to 170th Avenue NE	0.52	0.5	0.84	1.08
Redmond Way (SR 202) from 170th Avenue NE to SR 520	0.89	0.98	1.07	1.12
Redmond Way (SR 202) from SR 520 to East Lake Sammamish Parkway NE	0.85	1.17	1.09	1.36
Redmond Way (SR 202) from East Lake Sammamish Parkway NE to 185th Avenue NE	0.72	1.04	0.87	1.21
Redmond Way (SR 202) from 185th Avenue to east city limits	0.66	1.03	0.83	1.26

Implementation and Action Steps

Once the TMP update is adopted, the concurrency management system will be recalculated using the adopted 2013-2030 Transportation Facility Plan from the TMP and the 2010-2030 growth targets from the Comprehensive Plan. The amount of “pipeline” development will also be updated to reflect the new 2013-2030 planning horizon. The result of this update will be an updated number of Mobility Units of supply available for new development.

Once the status of the concurrency management system has been updated, implementation of the growth related portion of the TFP annually and new development proposals will be tracked as developers apply for concurrency. Based on this information, the Mobility Units of supply available for new development will remain up to date.

Appendix D: Street Classification System

Introduction

The functional classification of a street depends on its purpose and role in serving transportation mobility, access, and circulation needs. Streets may:

- Connect Redmond's urban centers to other parts of the region.
- Connect neighborhoods with urban centers.
- Provide internal circulation within neighborhoods.

The functional classification also considers the role of each corridor in supporting Redmond's multimodal transportation system. The street design is based on its functional classification.

Redmond's functional classification system organizes streets into the following categories:

- The SR 520 Freeway
- Principal Arterial
- Minor Arterial
- Collector Arterial
 - Connectors
 - Local Access
 - Shared Streets

SR 520 Freeway

The SR 520 Freeway is a high-capacity, high-speed highway connecting Redmond with the region. SR 520 is the city's most significant multimodal corridor and serves as the alignment for the East Link light rail line between Redmond and Seattle. Furthermore, the SR 520 Trail along SR 520 is a priority pedestrian/bicycle corridor.

The SR 520 Freeway requires massive infrastructure and wide rights-of-way (up to 300 feet or more) and is intended to carry heavy volumes of traffic at high speeds, including a relatively large percentage of trucks. The freeway is a limited access highway. Adjacent land uses include commercial office and retail uses, residential uses, open space, parks, and industrial uses.

SR 520 terminates at Avondale Road, a principal arterial. All interconnections with other roadway classifications are accomplished through grade-separated interchanges. The SR 520 Freeway is a divided highway with at least two general purpose and one HOV lane in each direction. Lanes are at least 12 feet wide with inside and outside paved shoulders provided. Design geometry is based on relatively high travel speeds. There are no at-grade pedestrian crossings and no bike lanes adjacent to vehicular travel lanes. In certain instances bicycles may be allowed to utilize paved shoulders or may be accommodated in separate trail facilities within the right-of-way.

Traffic calming and speed reduction measures are not applicable to the SR 520 Freeway. Noise and visual mitigation measures may be appropriate in specific settings. Interchanges are to be located far enough apart to safely accommodate merging and weaving maneuvers.

The SR 520 Freeway will continue to accommodate regional and interregional transit routes and the SR 520 Trail will continue to provide safe travel for cyclists and pedestrians.

Principal Arterial

A principal arterial provides capacity and continuity for travel between different areas of the region. Adjacent land uses may include residential and commercial areas, open space, public lands, industrial sites, and institutional sites. The activity center for a neighborhood will often be located along a principal arterial or at the intersection of a principal arterial with another principal arterial or a collector arterial.

Principal arterials connect typically with freeways or other principal arterials. Direct connections with other roadways are provided via at-grade intersections. Principal arterials may have as many as four through lanes, but will generally be designed as divided facilities with a center median. Turn lanes will be provided as turning movements warrant and may include left turn lanes and right turn lanes, or in five-lane or three-lane configurations may include a two-way continuous left turn lane.

Clearly marked crosswalks will be provided at all legs of every signalized intersection unless their absence is warranted. On-street bicycle lanes may be provided even if alternative, close-by, parallel facilities are available. Sidewalks will be included on both sides of the street and will be separated from vehicle lanes by a buffer strip. While serving as the separation between vehicles and pedestrians, the buffer strip will use vegetation to treat stormwater runoff using rain gardens or bioswales.

Traffic calming and speed reduction measures are generally not applicable to principal arterials. Principal arterials will be designed with partial control of access through the City's access management system. On-street parking will not generally be allowed.

Principal arterials shall provide for transit circulation and access, including bus stops and bulb-outs. Pedestrian facilities in the corridor including connections to transit, will be designed to provide safety and comfort, and standards may increase in pedestrian zones.

Minor Arterial

A minor arterial provides capacity and continuity for travel between different areas of the region, but will not have the capacity and significance of principal arterials. Adjacent land uses may include residential and commercial areas, open space, public lands, industrial sites, and institutional sites. The activity center for a district will often be served by minor arterials and may include the intersections of minor arterials with principal arterials and collector arterials.

Minor arterials terminate only at freeways, principal arterials, or other minor arterials. Direct connections with other roadways are provided via at-grade intersections. Minor arterials may have as many as four through lanes and may or may not have median dividers. Turn lanes are provided as movements warrant and may include left turn lanes and right turn lanes, or in a three-lane configuration may include a two-way continuous left turn lane.

Clearly marked crosswalks are provided at all legs of every signalized intersection unless their absence is warranted. On-street bicycle lanes may be provided even if alternative, close-by, parallel facilities are available. Sidewalks will be included on both sides of the street and will be separated from vehicle lanes by a buffer strip. While serving as the separation between vehicles and pedestrians, the buffer strip will use vegetation, such as rain gardens or bioswales, to treat stormwater runoff.

Traffic calming and speed reduction measures are generally applicable to minor arterials only in areas where sensitive land uses (residential property, schools, public parks, and certain other public institutions) directly abut the roadway or are nearby. Minor arterials will be designed with partial control of access through the City's access management system. On-street parking will be allowed only in commercial areas.

Minor arterials shall include provisions for transit circulation and access, including bus stops and bulb-outs. Pedestrian facilities in the corridor will be designed to provide safety and comfort, and standards may increase in pedestrian zones.

Collector Arterial

A collector arterial receives traffic from connectors and local streets and provides access to principal arterials. Collectors are generally not intended to serve regional trips and generally do not provide route continuity for more than a mile or two.

These roadways are generally contained entirely within the city and connect neighborhoods with each other. Adjacent land uses may include residential areas, commercial areas, open space, public lands, industrial sites, and institutional sites.

Collectors terminate only at principal arterials, minor arterials, or other collector arterials. Direct connections with other roadways are provided via at-grade intersections. Collector arterials have two through/general purpose lanes without a center median. Turn lanes are provided as turning movements warrant, and may include left turn lanes and right turn lanes, or in a three-lane configuration may include a two-way continuous left turn lane.

Clearly marked crosswalks are provided at all legs of signalized intersections and in the vicinity of schools unless their absence is warranted. On-street bicycle lanes may be provided even if alternative, close-by, parallel facilities are available. Sidewalks to treat stormwater runoff are included on both sides of the street and are separated from vehicle lanes by a buffer strip. While serving as the separation between vehicles and pedestrians, the buffer strip will use treatment such as rain gardens or bioswales.

Traffic calming and speed reduction measures are applicable to collector arterials, primarily in areas where sensitive land uses (residential property, schools, public parks, and certain other public institutions) directly abut the roadway or are nearby. Collector arterials will be designed with partial control of access through the access management system. On-street parking will be allowed only in commercial areas.

Collector arterials shall include provisions for transit circulation and access, including bus stops and bulb-outs. Pedestrian facilities in the corridor will be designed to provide safety and comfort, and standards may increase in pedestrian zones.

Local Streets

There are three types of local streets listed in hierarchical order: connectors, local access, and shared streets.

Connectors

Connectors are specially designated local streets that provide for direct vehicle, bicycle, and pedestrian connections between adjacent neighborhoods, and between neighborhoods and commercial areas. Connectors do not serve trans-regional trips and provide no route continuity beyond the areas they serve. Adjacent land uses may include residential areas, commercial areas, open space, public lands, industrial sites, and institutional sites.

Connectors terminate at collector arterials, minor arterials, and/or local streets. Direct connections with other roadways are provided via at-grade intersections. Connectors have only two through/general purpose lanes. Turn lanes will not be provided unless unusual circumstances warrant, in which case they may include left turn lanes only.

Bicycle circulation will typically be accommodated in lanes shared with motor vehicle traffic. Sidewalks are included on both sides of the street and are separated from vehicle lanes by a buffer strip. While serving as the separation between vehicles and pedestrians, the buffer strip will use treatments such as rain gardens or bioswales to treat stormwater runoff.

Traffic calming and speed reduction measures may be used on connectors as warranted by adjacent land uses and traffic characteristics. Connectors are designed with partial control of access through the access management system. On-street parking will be allowed where adequate roadway width is available.

The City may map and specify future connector alignments and may require dedication of rights-of-way for these facilities.

Local Access

Local access streets provide direct connections to and within single-family neighborhoods and typically terminate at connector or collector streets. These streets provide for direct vehicle, bicycle, and pedestrian access to commercial and residential land uses. Local streets do not serve regional trips and provide no route continuity beyond the areas they connect. Adjacent land uses may include residential properties, commercial areas, industrial sites, and institutional sites.

Local streets may terminate at principal arterials, minor arterials, collectors, connectors, or other local streets. Direct connections with other roadways are provided via at-grade intersections.

Local streets have only two through/general purpose lanes. Left turn lanes may be provided only in unusual circumstances. Clearly marked crosswalks are provided at signalized intersections or at other locations where warranted because of the proximity of schools or significant pedestrian activity.

On-street bicycle lanes will not be provided; rather, bicycle circulation will be accommodated in lanes shared with motor vehicle traffic. Sidewalks are included on both sides of the street and will be separated from vehicle lanes by an appropriate buffer strip. Traffic calming and speed reduction measures are applicable to local streets as warranted by adjacent land uses and traffic characteristics.

Local streets are designed with partial control of access through the access management system. On-street parking will be allowed where adequate roadway width is available.

Shared Streets

Shared streets are slow-speed streets shared by pedestrians, cyclists, and vehicles. Shared streets allow people to use the public right-of-way for a variety of activities during the course of a typical day and enjoy the outside active life. In a shared street, every user yields to any more vulnerable user. Pedestrians may use the full width of the street within an area defined as a shared street; playing on the roadway is also permitted. Drivers within a shared street may not drive faster than a walking pace. They must make allowance for the possible presence of pedestrians, including children at play, unmarked objects and irregularities in the road surface, and the alignment of the roadway.

In Redmond, some local streets will be transitioned to shared streets, which are appropriate on a residential, limited use, or other low-volume street, where the neighborhood desires to create a public space for social activities and play. Shared streets are also appropriate on streets with commerce where there is a desire to create an active and attractive people-oriented area.

Shared streets have:

- Special paving and surface treatment to identify these streets as unique people places.
- Flush or reduced curb height and nonexistent curb sidewalk to encourage pedestrians to use the entire street rather than street edges.
- Narrow vehicular lanes to create a safe and comfortable environment for pedestrians and cyclists.
- Chicanes to slow drivers by adding curves to the travel lane to indicate that they are entering a pedestrian area.
- High-quality and artistic street furniture to announce that people are welcome and create a friendly pedestrian environment.
- Plants to increase the quality of the urban space and the pedestrian experience.

Roadway Functional Classifications

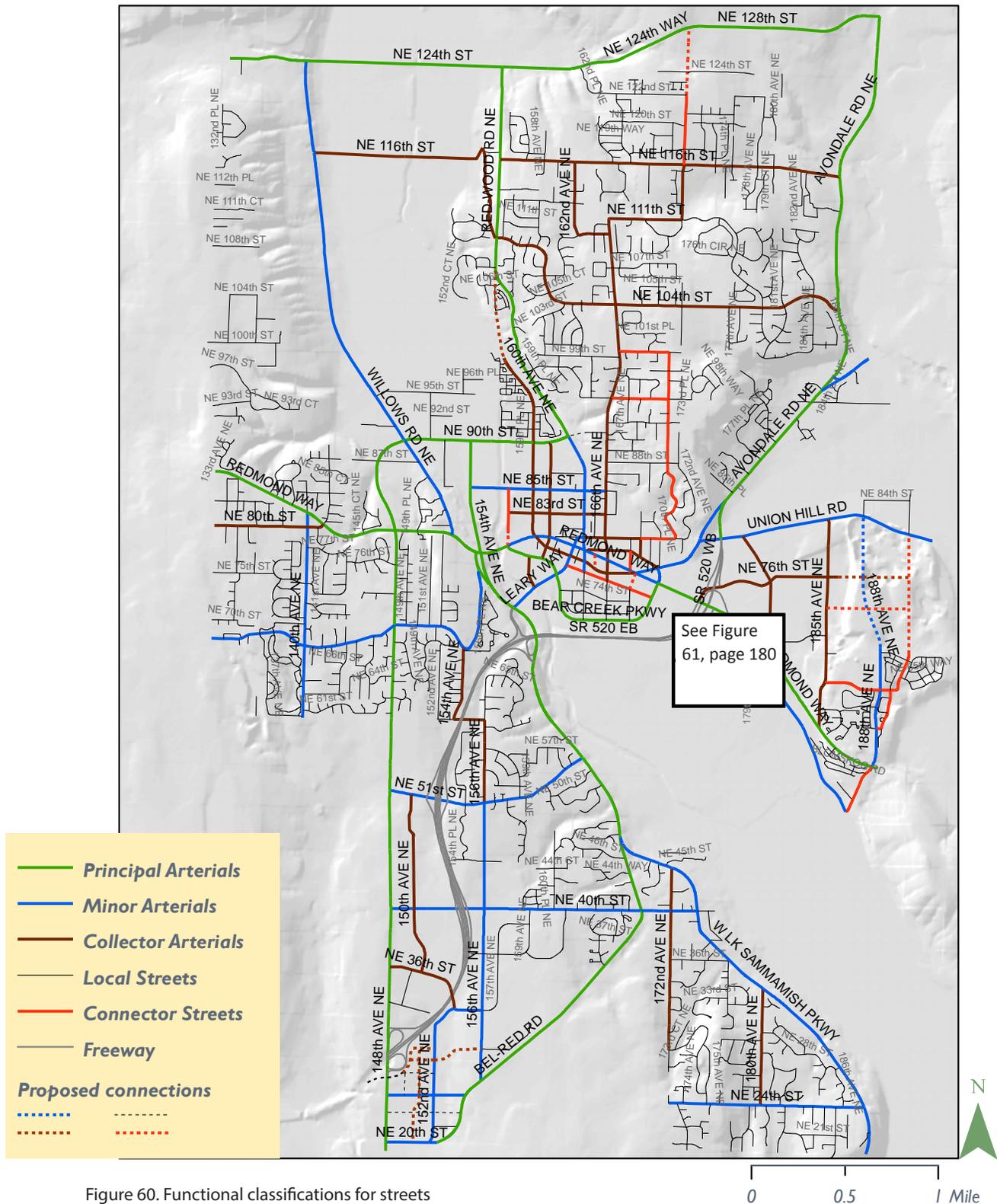


Figure 60. Functional classifications for streets

Roadway Functional Classifications



Figure 61 Functional classifications for streets - Marymoor Village

Where appropriate, curb extensions, gateways, pedestrian lighting, art, and play elements are used to improve safety and entice people to enjoy shared street.

Shared street will not provide entrance to garages or loading/unloading docks.

Streets designated as shared streets are shown in Zoning Code, Exhibit A. Downtown Chapter, Pedestrian System, page 74 of 87. This can be found at http://zoningplus.com/regs/redmond/media/files/PDF/Map10_3_RZC_20130216.pdf.

Figure 60 and 61 and Tables 14 through 17 define the functional classification for all streets in the City of Redmond except local streets. Tables 14 through 17 also identify the number of future general purpose through lanes and modal priorities except that of pedestrians (which are covered in Chapter 4: Pedestrian System). Modal priorities correspond to modal corridors designated in Figure 28 of Chapter 4. Abbreviations are used in indicating modal priorities: A - Automobile, B - Bike, and T - Transit.

Table 14. Principal arterial streets

Principal Arterial Streets	The Number of Future General Purpose Through Lanes	Modal Priorities
Avondale Road NE (Avondale Way to Avondale north city limits)	4	A, B, T
Avondale Road NE (Union Hill Road to Avondale Way)	4	A, T
Bear Creek Parkway (Redmond Way west to Redmond Way east)	4	A
Bel- Red Road (NE 20th Street to West Lake Sammamish Parkway)	4	
NE 90th Street- 154th Avenue NE to 160th Avenue NE	4	A, T
NE 90th Street - 160th Avenue NE to Red-Wood Road	2	A
NE 90th Street - Willows Road to 154th Avenue NE	2	A, T
Redmond Way (east city limits to Bear Creek Parkway east)	4	A
Redmond Way (west city limits to Bear Creek Parkway West)	4	A
Redmond-Woodinville Road - NE 90th Street - NE 116th Street	2	A
Redmond-Woodinville Road - NE 116th Street - NE 124th Street	2	A
West Lake Sammamish Parkway NE – NE 51st Street to Redmond Way	4	A, B
West Lake Sammamish Parkway NE - Bel-Red Road to NE 51st Street	4	A, B
124th Avenue NE - Willows Road to Avondale Road	2	A
148th Avenue NE - NE 20th Street to Willows Road	4	A, T
154th Avenue NE - NE 85th Street to NE 90th Street	2	A
154th Avenue NE – West Lake Sammamish Parkway to NE 85th Street	4	A, T

Table 15. Minor arterial streets

Minor Arterial Streets	The Number of Future General Purpose Through Lanes	Modal Priorities
Avondale Way NE (Avondale Road NE to NE 79th Street)	3	A, T
Avondale Way (NE 79th Place to Redmond Way)	3	B
East Lake Sammamish Parkway NE (Redmond Way to 187th Avenue NE)	2	
Leary Way NE (NE 76th Street to NE 80th Street)	2	
Leary Way NE (West Lake Sammamish Parkway to NE 76th Street)	4	
NE 20th Street (148th Avenue NE to Bel-Red Road)	4	A
NE 24th Street (148th Avenue NE to Bel-Red Road)	3	P
NE 24th Street - city limits to West Lake Sammamish Parkway NE	2	T
NE 31st/NE 36th Streets (152nd Ave NE to 156th Ave NE)	2	T
NE 40th Street (SR 520 to West Lake Sammamish Parkway)	4	B, T
NE 40th Street (west city limits to SR 520)	4	T
NE 51st Street (148th Avenue NE to 156th Avenue NE)	4	T
NE 51st Street (156th Avenue NE to West Lake Sammamish Parkway)	2	
NE 80th Street - Leary Way to 164th Avenue NE	2	B
NE 85th Street (154th Avenue NE to 161th Avenue NE)	2	T
NE 85th Street (161st Avenue NE to 166th Avenue NE)	2	
NE Union Hill Road (east city limits to 188th Avenue NE)	4	A
NE Union Hill Road (188th Avenue NE to Avondale Way)	4	A
Novelty Hill Road (east city limits to Avondale Road NE)	4	
Old Redmond Road (west city limits to West Lake Sammamish Parkway)	2	B
Redmond Way (Bear Creek Parkway to 170th Avenue NE)	2	
Redmond-Woodinville Road (NE 90th Street to Cleveland Street)	2	
West Lake Sammamish Parkway NE (Bel-Red Road to NE 40th Street)	2	B
West Lake Sammamish Parkway NE (NE 24th Street to south city limits)	2	T
West Lake Sammamish Parkway NE (NE 40th Street to NE 24th Street)	2	T
Willows Road (NE 90th Street to north city limits)	4	A, T

Table 15. Minor arterial streets (continued)

Minor Arterial Streets	The Number of Future General Purpose Through Lanes	Modal Priorities
Willows Road (Redmond Way to NE 90th Street)	4	A
140th Avenue NE (Redmond Way to south city limits)	2	
152nd Avenue NE (NE 20th Street to NE 24th Street)	2	B
152nd Avenue NE (NE 24th Street to NE 31st Street)	2	B, T
156th Avenue NE (NE 51st Street to NE 31st Street)	4	P,T
156th Avenue NE (NE 31st Street to NE 24th Street)	4	T
164th Avenue NE Extension (NE 76th Street to Cleveland Street)	2	
170th Place NE/Avenue NE (Redmond Way to Avondale Way)	4	A
188th Avenue NE - between Union Hill Road & Redmond-Fall City Road	2	

Table 16. Collector arterial streets

Collector Arterial Streets	The number of Future General Purpose Through Lanes	Modal Priorities
Cleveland Street (160th Avenue NE to 168th Avenue NE)	2	
NE 27th Street/NE 28th Street (150th Avenue NE to 156th Avenue NE)	2	
NE 28th Street (Overlake Access Ramp to 152nd Avenue NE)	2	
NE 31st Street/NE 36th Street (SR 520 Trail to 152nd Avenue NE)	2	B
NE 36th Street (148th Avenue NE to SR 520 Trail)	2	
NE 60th Street (154th Avenue NE to 156th Avenue NE)	2	
NE 65th St (Marymoor Park to E Lake Sammamish Pkwy NE)	2	
NE 67th St (173rd Ave NE to 177th Ave NE)	2	
NE 70th St (173rd Ave NE to 180th Ave NE)	2-4	
NE 76th Street (Redmond Way to 180th Avenue NE)	2	A, T
NE 76th Street (180th Avenue NE to 188th Avenue NE)	2	T
NE 80th Street (132nd Avenue NE to Redmond Way)	2	
NE 83rd Street (158th Avenue NE to 161st Avenue NE)	2	
NE 83rd Street (161st Avenue NE to 166th Avenue NE)	2	T

Table 16. Collector arterial streets (continued)

Collector Arterial Streets	The number of Future General Purpose Through Lanes	Modal Priorities
NE 104th Street/NE 109th Street (Redmond-Woodinville Road to 166th Avenue NE)	2	B
NE 104th Street (166th Avenue NE to Avondale Road)	2	T
NE 111th Street (166th Avenue NE to 172nd Avenue NE)	2	
NE 116th Street (Red-Wood Road to Avondale Road NE)	2	
NE 116th Street (Willows Road to 154th Place NE)		
150th Avenue NE (NE 36th Street to NE 51st Street)	2	
151st Avenue NE (NE 20th Street to NE 28th Street)		
154th Avenue NE (NE 60th Street to Old Redmond Road)	2	
154th Place NE (Red-Wood Road to NE 116th Street)	2	
156th Avenue NE (NE 51st Street to NE 60th Street)	2	
159th Place NE (Bear Creek Parkway to Leary Way)	2	
160th Avenue NE (NE 85th Street to NE 90th Street)	2	T
160th Avenue NE (NE 90th Street to Red-Wood Road)	2	
160th Avenue NE (Redmond Way to NE 85th Street)	2	
161st Avenue NE - NE 83rd Street to Redmond Way	2	
161st Avenue NE - NE 85th Street to NE 83rd Street	2	T
161st Avenue NE - NE 90th Street to NE 85th Street	2	
161st Avenue NE - Redmond Way to Bear Creek Parkway	2	
166th Avenue NE (NE 76th Street to NE 83rd Street)	2	
166th Avenue NE (NE 83rd Street to NE 85th Street)	2	T
166th Avenue NE (NE 85th Street to NE 104th Street)	2	T
166th Avenue NE (NE 104th Street to NE 111th Street)	2	
169th Avenue NE (NE 79th Street to NE 80th Street)	2	
172nd Avenue NE (NE 111th Street to NE 116th Street)	2	B
172nd Avenue NE (West Lake Sammamish Parkway to NE 30th Street)	2	
173rd Ave NE (NE 67th St to NE 70th St)	2	
176th Ave NE (NE 65th St to NE 70th St)	2	
178th Place NE/180th Avenue NE (NE 76th Street to Union Hill Road)	2	T
180th Avenue NE (Redmond Way to NE 76th Street)	2	

Table 16. Collector arterial streets (continued)

Collector Arterial Streets	The number of Future General Purpose Through Lanes	Modal Priorities
185th Avenue NE (NE 68th Street to SR 202/Redmond-Fall City Road)	2	T
185th Avenue NE (NE 76th Street to NE 68th Street)	2	
185th Avenue NE (Union Hill Road to NE 76th Street)	2	A

Table 17. Connector streets

Connector Streets	General Purpose Through Lanes		Modal Priorities
	Widest Existing	Future	
Avondale Way (Redmond Way to NE 76th Street)	0	2	
NE 63rd Street (177th Avenue NE to E Lk Samm Pkwy)	0	2	
NE 65th Street (185th Avenue NE to 192nd Avenue NE)	0	2	
NE 73rd Street (185th Avenue NE to 192nd Avenue NE)	0	2	
NE 76th Street (Leary Way to Bear Creek Parkway)	2	2	
NE 80th Street (169th Avenue NE to 172nd Avenue NE)	2	2	
NE 80th Street (185th Avenue NE to 188th Avenue NE)	0	2	
NE 100th Street (166th Avenue NE to 171st Avenue NE)	2	2	
158th Avenue NE (NE 83rd Street to Redmond Way)	0	2	
158th Avenue NE (NE 85th Street to NE 83rd Street)	2	2	
168th Avenue NE (Redmond Way to NE 79th Street)	2	2	
171st Avenue NE (NE 80th Street to NE 88th Street)	2	2	B
171st Avenue NE (NE 88th Street to NE 100th Street)	2	2	
172nd Avenue NE (NE 116th Street to NE 128th Street)	2	2	
187th Avenue NE (East Lake Sammamish Parkway to SR 202)	2	2	
192nd Avenue NE (Union Hill Road to NE 65th Street)	0	2	
176th Avenue NE (NE 70th Street to Redmond Way)	0	2	
177th Avenue NE (NE 63rd Street to NE 68th Street)	0	2	
180th Place NE (NE 63rd Street to East Lake Sammamish Parkway)	0	2	

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Appendix E:

The Unfunded Buildout Plan

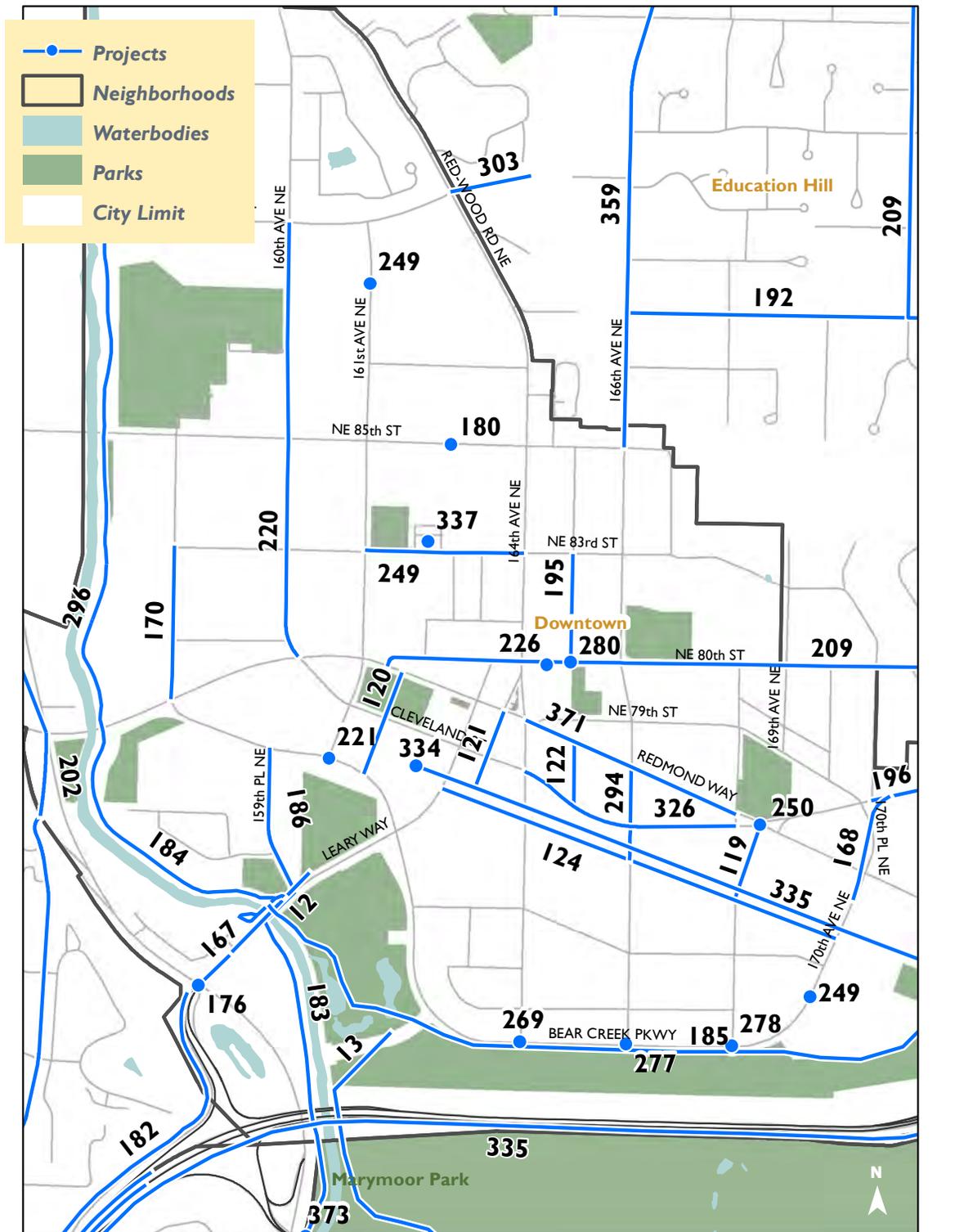
The unfunded Buildout Plan includes capital improvements needed for Redmond to complete its long-range transportation system, but which do not currently have identified sources of City funding for the 2013-2030 timeframe. There are a number of regional projects important to the long-range transportation system also included on this list. Please refer to Chapter 6 Regional Transportation for more information on the timeline and status of funding for these projects.

With 223 capital improvements, the unfunded portion of the Buildout Plan serves as a guide for completing Redmond’s transportation system. Included in this list are potential system improvements (capacity projects that benefit the overall transportation system) that could move to the Transportation Facilities Plan if funding becomes available. In addition, there are candidate projects for the pedestrian, bicycle, targeted safety, and preservation programs. The candidate projects for potential program funding are not a complete list but include those needed projects that have been specifically identified by the community or through a separate approved plan. As Redmond evolves and travel needs of the community develop, revisions to the Buildout Plan will be needed and new capital improvements are expected to be added. Unfunded Buildout Plan projects are listed in numerical order grouped by location: Downtown, Overlake, Marymoor Village and the remaining neighborhoods. The numbers are for the purpose of locating projects on the maps and do not reflect a priority order.

Table 18. Downtown projects

DOWNTOWN PROJECTS					
Project ID	Project Title	Location	Project Limits: From	Project Limits: To	Description
12	Regional Trail Interchange Improvements	520 Trail	520 Trail	Sammamish River Trail and Bear Creek Trail	Improve the intersection of three regional trails to reduce safety hazards and add capacity for bicycles and pedestrians. Build new bridge, preferably at height of trails on north side of Leary Way bridge. Coordinate with project 167 Leary Way bridge widening.
13	Redmond Town Center To Marymoor Trail Connection	Redmond Town Center To Marymoor Trail Connection	Bear Creek Trail at Redmond Town Center	Marymoor Park	Construct nonmotorized bridge from Bear Creek Trail and Redmond Town Center to Marymoor Park underneath east side of SR 520 bridge over the Sammamish River
119	Avondale Way Extension	Avondale Way Extension	Redmond Way at Avondale Way	NE 76th Street at 168th Avenue NE	Construct a new north/south connection between Redmond Way and NE 76th Street. Improvements include one lane in each direction, sidewalks, bicycle lanes, utilities, street lights, trees, signs, and stormwater treatments.

Unfunded Buildout Plan – Downtown



Note: projects shown are conceptual only; actual alignments may vary.

Figure 62. Unfunded Buildout Plan – Downtown

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Table 18. Downtown projects (continued)

DOWNTOWN PROJECTS					
Project ID	Project Title	Location	Project Limits: From	Project Limits: To	Description
120	Brown Street Woonerf	Brown Street	Redmond Way	Bear Creek Parkway	In conjunction with the Downtown Park, construct a street designed primarily for pedestrians and bicycles, allowing business access but no on-street parking or significant vehicle movements. This woonerf will have a slow design speed, with pedestrians and bicyclists provided priority over vehicles within the roadway and design elements including narrow roadway lanes, special paving treatments, pedestrian amenities, low impact development techniques, public art, lighting, and utilities.
121	Gilman Street Woonerf	Gilman Street	164th Avenue NE	Redmond Central Connector	Construct a street designed primarily for pedestrians and bicycles, allowing business access but no significant vehicle movements. This woonerf will have a slow design speed, with pedestrians and bicyclists provided priority over vehicles within the roadway and design elements including narrow roadway lanes, special paving treatments, pedestrian amenities, low impact development techniques, public art, lighting, and utilities.
122	165th Ave NE Extension	165th Avenue NE Extension	Redmond Way	Cleveland Street	Construct a new north/south connection between Redmond Way and Cleveland Street, realign the NE 79th Street connection to Redmond Way. Improvements include intersection improvements, one lane in each direction, sidewalks, bicycle lanes, utilities, street lights, trees, signs, plaza space, and stormwater treatments.
124	NE 76th Street Ped Improvements	NE 76th Street	Leary Way	170th Ave NE	Improve NE 76th St from Leary Way to 170th Ave NE to create a lively and active street. This pedestrian supportive street would include 1 through lane in each direction, parking, sidewalks, street lights, pedestrian amenities, storm drainage, utility relocation and easements. This improvement project could also include light rail transit depending on timing and final alignment.

Table 18. Downtown projects (continued)

DOWNTOWN PROJECTS					
Project ID	Project Title	Location	Project Limits: From	Project Limits: To	Description
167	Leary Way Reconfiguration	Leary Way	West Lake Sammamish Parkway	159th PI NE	Reconfigure Leary Way Sammamish River Bridge and widen street from West Lake Sammamish Parkway to 159th Place NE. Improvements would include 2 through lanes in each direction, left turn lanes, lighting, transit amenities, pedestrian bridge on north side and right of way. Coordinate with project 12, bicycle and pedestrian bridge project.
168	170th Place NE Widening	170th PI NE (Bear Creek Parkway Extension, east)	Redmond Way	Avondale Way	Widen and reroute 170th Place NE from Redmond Way to Avondale Way. Improvements would include 2 through lanes in each direction, left turn lanes, sidewalks, street lights, storm drainage, and right-of-way and easements.
170	158th Ave NE Extension	159th Ave NE	Redmond Way	NE 83rd St	Construct new 159th Ave NE from Redmond Way to NE 83rd St. Improvements include 1 through lane in each direction, parking, sidewalks, street lights, pedestrian amenities, transit stop amenities, storm drainage, right-of-way and easements.
176	West Lake Sammamish Parkway & Leary Way Intersection Improvements and 520 Regional Trail Crossing	West Lake Sammamish Parkway at Leary Way			Intersection modification. Construct either a multilane roundabout or double left turn lanes (WLSP southbound to Leary Way eastbound) and add a lane on Leary Way from West Lake Sammamish Parkway to the bridge over the Sammamish River. Construct a grade-separated crossing for SR 520 Trail. The trail crossing across West Lake Sammamish Parkway that connects the end of the 520 Regional Trail to the Sammamish River Regional Trail.
180	NE 85th Street Midblock Crossing	85th Street between 161st Ave NE and 164th Ave NE			With the Post Office site moving, remove existing right turn lane and add a mid-block crossing with curb bulbs connecting existing and future interior pathways.
182	SR 520 Trail Lighting	520 Trail	Sammamish River Trail	148th Ave NE/ City Limits	As a transportation facility, lighting is necessary to allow use of the trail, especially during peak hours in the winter months. Provide lighting and consider other elements such as reflective delineators or fog lines.

Table 18. Downtown projects (continued)

DOWNTOWN PROJECTS					
Project ID	Project Title	Location	Project Limits: From	Project Limits: To	Description
183	Sammamish River Trail Lighting Marymoor	Sammamish River Trail	520 Trail	NE 51st St	This trail has a unique need for lighting - the trail exists in lieu of a sidewalk on West Lake Sammamish Parkway. Sidewalks in the City are typically lit, meaning that pedestrians in this corridor do not receive the same level of service. As a transportation facility, lighting is necessary to allow use of the trail, especially during peak hours in the winter months. Provide lighting and consider other elements such as reflective delineators or fog lines.
184	Sammamish River Trail North Lighting	Sammamish River Trail	520 Trail	NE 90th St	As a transportation facility, lighting is necessary to allow use of the trail, especially during peak hours in the winter months. Provide lighting and consider other elements such as reflective delineators or fog lines.
185	Bear Creek Trail Widening	Bear Creek Trail	520 Trail	Union Hill Road	Provide an east west route through Downtown for through cyclists by widening the trail to 12 to 14 feet with good sight lines and limited curve radii. As a transportation facility, lighting is necessary to allow use of the trail, especially during peak hours in the winter months. Provide lighting and consider other elements such as reflective delineators or fog lines.
186	159th Place Sidewalk	159th PI NE	Bear Creek Parkway	Leary Way	Provide interim concrete sidewalk including curb, gutter, and storm as applicable.
192	NE 88th Street Sidewalk	NE 88th Street	166th Ave NE	172nd Ave NE	Construct sidewalk on one side of roadway including curb, gutter, and storm as applicable.
195	165th Ave NE Sidewalk	165th Ave NE	NE 83rd St	NE 80th St	Construct sidewalk on west side roadway including curb, gutter, and storm as applicable to fill in sidewalk gap.
196	Avondale Way Sidewalk	Avondale Way	170th Ave NE	Bear Creek Trail	Replace heavily degraded sidewalk. Install sidewalk with planter strip up to the Bear Creek Trail, including landscaping.
202	Grasslawn Trail	Grasslawn Trail	West Lake Sammamish Way	Redmond Central Connector	Complete difficult connection between Grass Lawn Neighborhood and Redmond Central Connector and Sammamish River Trail by constructing trail from Old Redmond Road and West Lake Way headed east, through a cantelevered bridge under Redmond Way and over 154th Ave, and then to the Redmond Central Connector. Include storm facilities as applicable.

Table 18. Downtown projects (continued)

DOWNTOWN PROJECTS					
Project ID	Project Title	Location	Project Limits: From	Project Limits: To	Description
203	Old Redmond Road Cycle Track	Old Redmond Road	West Lake Sammamish Parkway	West City Limits	Provide cycle tracks over existing bicycle lanes. Provide storm drain access.
209	Education Hill Bike Boulevard	171st Avenue, NE 88th St, 172nd Ave NE, NE 80th St	100th Street	Redmond Way	Construct bicycle boulevard treatments such as bicycle related wayfinding signage and channelization, and median islands.
220	160th Avenue NE Shared Lane Markings	160th Avenue NE	Cleveland Street	NE 90th St	Add shared lane markings to roadway, indicating proper positioning for cyclists along bike route.
221	161st Avenue NE and Bear Creek Parkway Bike Signal	161st Ave NE at Bear Creek Parkway			Add bicycle signal treatment enabling cyclists to continue on Heron Rookery Trail with access to regional trails. Signal does not allow through vehicular movements, which would be allowed only for bicyclists.
226	Transit Center Bicycle Station	Near the Downtown Transit Center (NE 83rd St at 161st Ave NE)			Construct a bicycle station to serve the Downtown Transit Center and the Downtown Urban Center central downtown location. A bicycle station includes, covered, enclosed, and secure access bicycle parking that may be staffed during operating hours. The cost is a place holder to coordinate with existing businesses to combine space for bike station.
249	Flashing Beacon Upgrade	Flashing Beacon Upgrade: System- wide project			Upgrade smart studs at 4 locations: 1) 161st, 87th to 90th; 2) and 3) 83rd, 161st to 164th near Transit Center; and 4) Bear Creek Park Way at 75th.
250	Redmond Way & Avondale Way Intersection Mods	Redmond Way/Avondale Way			Remove separated right-turn lane from WB Avondale Way to Redmond Way; at eastern end of Downtown east and west Corridor. Coordinate with Project 116.
269	Bear Creek Parkway & 164th Ave NE Flashing Beacon	Bear Creek Parkway at 164th Avenue NE			Install flashing beacon at the existing pedestrian crossing from Bear Cr trail. Include center median island on east side of intersection.
277	Bear Creek Parkway & 166th Ave NE Crosswalk	Bear Creek arkway at 166th Avenue NE			Install crosswalk on west leg, providing access to Bear Cr. trail.

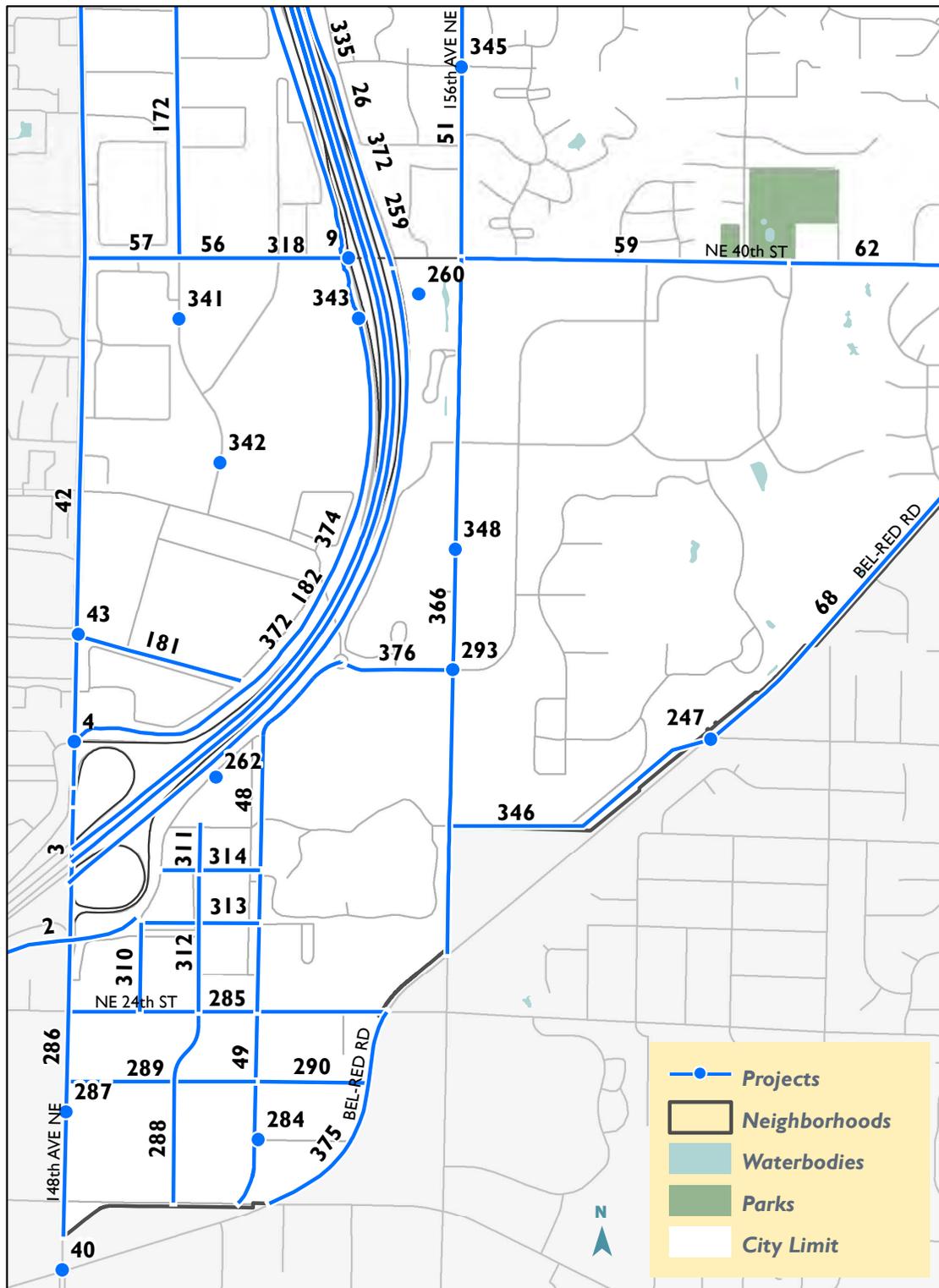
Table 18. Downtown projects (continued)

DOWNTOWN PROJECTS					
Project ID	Project Title	Location	Project Limits: From	Project Limits: To	Description
279	Einstein Elementary Crosswalk Enhancement	Einstein Elementary School			Install flashing beacon on NE 116th St at school crossing.
294	166th Ave NE Bike Connection	166th Avenue	76th Street	Redmond Way	Construct bicycle lanes.
296	Sammamish River Trail Widening	Sammamish River Trail Widening	NE 90th Street	SR 520 Trail	Widen existing hard surface regional trail and improve existing section and construct missing links of parallel soft surface trail.
303	91st Street Connection	NE 91st Street	NE 90th Street	91st Street/166th Ave	Enhance existing roadway along steep slope, adding safety and visibility enhancements for pedestrians and vehicles. Add wayfinding.
326	Cleveland Street East	Cleveland Street	164th Avenue NE	166th Avenue NE	Improve Cleveland Street to a pedestrian-friendly Main Street. Improvements include one through lane, parking, and sidewalk in each direction, mid-block crossings, street lights, utilities, stormwater treatments, public art, bicycle racks, pedestrian amenities, street furnishing, trees, traffic and wayfinding signs, and realignment of street at eastern and western ends to improve traffic flow.
334	Downtown Redmond Light Rail Station				Construct a light rail station on the East Link line, including station platforms and entryways, and amenities including art, high quality pedestrian access and bicycle parking. Integrate with existing amenities such as the Redmond Central Connector and Heron Rookery Park.
337	Redmond Downtown Transit Center Pickup/Dropoff Zone	NE 83rd Street			Convert existing on-street parking spaces to a pickup/dropoff zone for transit riders on NE 83rd Street. Include 15 minute parking zone markings and signage.

Table 18. Downtown projects (continued)

DOWNTOWN PROJECTS					
Project ID	Project Title	Location	Project Limits: From	Project Limits: To	Description
359	166th Avenue NE Streetscape	166th Avenue NE	NE 85th Street	NE 104th Street	Improve 166th Avenue NE to a pedestrian-friendly street. Improvements include widened sidewalk and one through lane in each direction, center left turn lane and bike lanes, pedestrian amenities, transit amenities, utilities, street lights, stormwater, and LID. Add pedestrian crossings coordinated with bus stops.
371	Redmond Way Widening	Redmond Way	168th Avenue NE	164th Avenue NE	Add second westbound lane and parking on the north side of Redmond Way between 168th Avenue and 164th Avenue. Project would include one travel lane, on-street parking, sidewalk, right-of-way, utilities and streetscape improvements.
372	Phases 1 & 2 SR 520 Active Traffic Management	SR 202	I-405		Add variable speed limits and variable message signs.
373	SR 520/ West Lake Sammamish Parkway – Eastbound off ramp Improvements	West Lake Sammamish Parkway	Eastbound off ramp		Construct either a multilane roundabout or exclusive right turn lane at the ramp terminal.

Unfunded Buildout Plan – Overlake



Note: projects shown are conceptual only; actual alignments may vary.

Figure 63. Unfunded Buildout Plan – Overlake

Table 19. Overlake projects

OVERLAKE PROJECTS					
Project ID	Project Title	Location	Project Limits: From	Project Limits: To	Description
2	SR 520/148th Interchange Overlake Access Ramp and Trail Connection Within WSDOT Limited Access	Overlake Access Ramp	148th Avenue NE	152nd Ave NE	Construct a second eastbound off ramp at 148th Avenue NE. This ramp will go under 148th Avenue NE, terminate at the east side of 148th Avenue NE with a roundabout, and connect the Overlake Access Street and NE 28th Street west of 152nd Avenue NE. Improvements along the ramp include two lanes on the ramp, walls, shoulders, stormwater, utilities, street lights, and a multi-user trail connecting the SR 520 eastbound on ramp with the roundabout. Coordinate with project #315, the Overlake Access Street and project #3, 520 Trail Grade Separation at 148th Avenue NE.
3	SR 520/148th Interchange Overlake Access Ramp and Trail Connection: The Trail Improvement Portion	148th Avenue NE	SR 520 EB Ramp	NE 29th Place	Modify channelization and signals, and provide wide multi-use trail that is separated from the roadway on the east side of 148th Ave NE from the eastbound SR 520 on ramp to the SR 520 Trail at the westbound SR 520 off ramp at NE 29th Place (148th Ave NE bridge over SR 520). Design to accommodate future grade separation project at 148th Avenue NE and NE 29th Place. Coordinate with the Overlake Access Ramp project, #2.
4	SR 520 Regional Trail Grade Separation at 148th Ave NE	SR 520 Trail	148th Avenue NE	SR 520 Trail	Grade separate SR 520 Trail at 148th Avenue NE.
9	NE 40th St & 520 Trail Interim Ped Improvements	NE 40th Street at SR 520 Ramps (N side)			Construct interim improvement with raised median pedestrian refuge island with push button on NE 40th St along 520 Trail route; curb bump-outs at WB on-ramp; "Yield to Pedstrian" signage.

Table 19. Overlake projects (continued)

OVERLAKE PROJECTS					
Project ID	Project Title	Location	Project Limits: From	Project Limits: To	Description
26	520 BRT	SR 520	NE 40th Street	SR 202/ Redmond Way	In advance of the future light rail alignment to SE Redmond from the Overlake Transit Center Station, develop an alignment or a bus rapid transit corridor with needed right-of-way acquisition and roadway construction. This BRT corridor alignment needs to be compatible with the future light rail infrastructure. Construct layover facilities in Downtown Redmond.
40	Bel-Red Road & 148th Ave NE Turn Lanes	Bel-Red Road at 148th Avenue NE			Work with the City of Bellevue to add additional capacity in the vicinity of this intersection by creating eastbound and westbound dual left turn lanes at Bel-Red Road and 148th Avenue NE, adding a third northbound through lane on 148th Avenue NE starting south of Bel-Red Road and adding a northbound right-turn lane at Bel-Red Road and 148th Avenue NE.
42	148th Ave NE Multiuse Trail	148th Avenue NE Paved, Shared-Use Path	NE 29th Pl	Old Redmond Road	Provide a wide (12-foot) multi-use trail on the east side of 148th Avenue NE from NE 29th Place to Old Redmond Road. This trail can expand upon the existing sidewalk to accommodate both pedestrians and bicyclists.
43	148th Ave NE & NE 31st St Intersection Improvements	148th Avenue NE at NE 31st Street			Signalize and modify intersection to improve safety and traffic operations. Relocate pedestrian crossing at 3300 block to this signal.
48	152nd Ave NE Safety Enhancement	152nd Avenue NE	24th Street	31st Street	Rechannelize road to a three lane section where possible and adjust signal phasing to provide protected left turns at this high pedestrian collision location. Coordinate project with storm water holding facility project. It is a near term interim improvement.

Table 19. Overlake projects (continued)

OVERLAKE PROJECTS					
Project ID	Project Title	Location	Project Limits: From	Project Limits: To	Description
49	152th Ave NE Main Street South of NE 24th Street	152nd Avenue NE	NE 20th Street	NE 24th Street	Implement a multi-modal pedestrian corridor concept on 152nd Avenue NE from NE 20th Street to NE 24th Street to create a lively and active signature street in the Overlake Village. The cross section for the improvements would include 1 through lane in each direction, turn lanes as necessary, on-street parking and pedestrian and bicycle facilities. Other improvements include storm drainage, LID, street lighting, pedestrian amenities, transit amenities, right-of-way, easements, and utilities.
51	156th Ave NE Multiuse Trail	156th Avenue NE Multi-use Trail	NE 40th St	NE 51st St	Provide a wide (12-foot) multi-use trail on the east side of 156th Avenue NE from Bel-Red Road to NE 51st Street. This trail can expand upon the existing sidewalk to accommodate both pedestrians and bicyclists. Coordinate construction with Project 366.
56	NE 40th St Rechannelization Segment I	NE 40th Street	148th Avenue NE	SR 520	Within existing right-of-way and easements, resize vehicular lanes and add bike lanes in both directions. Improvements include two vehicular lanes in each direction, one turn lane, bike lanes and sidewalks on both sides, stormwater treatments, and street lights. Locations of existing curbs and sidewalks remain the same. Coordinated with 57.
57	NE 40th St Streetscape Segment I	NE 40th Street	148th Avenue NE	SR 520	Add bike lanes on both sides. Improvements include two vehicular lanes in each direction, one turn lane, bike lanes and sidewalks on both sides, streetscape including gateway wayfinding and art elements, stormwater treatment, utilities, street lights, right-of-way and easement acquisition. Coordinated with 56.

Table 19. Overlake projects (continued)

OVERLAKE PROJECTS					
Project ID	Project Title	Location	Project Limits: From	Project Limits: To	Description
59	NE 40th St Rechannelization Segment III	NE 40th Street	156th Avenue NE	163rd Avenue NE	Within existing right-of-way, resize vehicular lanes and add bike lanes in both directions. Improvements include two 10 foot vehicular lanes in each direction, one turn lane, bike lanes and sidewalks in both directions, and streetscape, stormwater treatment, utilities, and street lights. Locations of existing curbs and sidewalks remain the same. Coordinated with 60.
62	NE 40th St Streetscape Segment IV	NE 40th Street	163rd Avenue NE	Bel-Red Road	Add bike lanes in both directions. Improvements include one 11 feet vehicular lane, 5.5 feet bike lane, and 8.5 feet sidewalk in both directions, one turn lane or median, trees, stormwater treatments, utilities, street lights, and right-of-way acquisition, and streetscape including gateway wayfinding and art elements. Coordinated with 64.
68	Bel-Red Road Bicycle and Pedestrian Improvements	Bel-Red Road	NE 30th Street	NE 40th Street	Widen Bel-Red Rd from NE 30th St to NE 40th Street. Improvements include bike lanes, pedestrian path, street lights, right-of-way and easement acquisition.
172	150th Avenue NE Bike Improvements	150th Avenue NE	NE 51st St	NE 40th St	Fill in gaps in bicycle facility network on 150th Avenue NE from NE 51st Street to NE 40th Street in both directions, and improve curve radius to allow for truck movements through existing chokepoint. Widen roadway 6' to west and build retaining walls. Include shared lane markings at edges of new 13' wide lanes.
181	NE 31st Street Light Rail Station Access	NE 31st St	148th Ave NE	SR 520 Trail/Overlake Village Bicycle-Pedestrian Bridge	Allow public access to future Overlake Village Light Rail Station and future pedestrian bridge across 520 by acquiring right-of-way or acquiring easement northwest of SR 520. Enhance pedestrian facilities.
182	SR 520 Trail Lighting	520 Trail	Sammamish River Trail	148th Ave NE/ City Limits	As a transportation facility, lighting is necessary to allow use of the trail, especially during peak hours in the winter months. Provide lighting and consider other elements such as reflective delineators or fog lines.

Table 19. Overlake projects (continued)

OVERLAKE PROJECTS					
Project ID	Project Title	Location	Project Limits: From	Project Limits: To	Description
247	Bel-Red & NE 30th Street Intersection Improvements	NE 30th St and Bel-Red Road			Coordinate with City of Bellevue to revise intersection signalization and channelization to improve pedestrian and bicycle access and allow northbound left-turn movements between Bel-Red Road and Microsoft campus.
259	East Link Phase I	Seattle to Downtown Redmond Light Rail Transit (LRT) Corridor			As part of the East Link Phase I, extend light rail from Bellevue to Overlake Transit Center Station along SR 520, including track, overhead electric wires, utilities, and stormwater.
260	Overlake Transit Center Light Rail Station	Overlake Transit Center Light Rail Station			Construct a light rail station on the East Link line, including station platforms and entryways, and amenities including art, high quality pedestrian access and bicycle parking. Coordinate with Projects 6 to expand the walk and bike shed for the station.
262	Overlake Village Light Rail Station	Overlake Village LRT Station			Construct a light rail station on the East Link line, including station platforms and entryways, and amenities including art, high quality pedestrian access and bicycle parking. Coordinate with Project 5 to expand the walk and bike shed for the station.
284	152nd Midblock Crossing	Mid-Block Crossings			Provide a mid-block crossing on 152nd Avenue NE between NE 20th Street and NE 24th Street to improve pedestrian accessibility.
285	NE 24th Street Access Management	NE 24th Street	148th Avenue NE	Bel-Red Road	Implement more stringent access management along NE 24th Street from 148th Avenue NE to Bel-Red Road to improve efficiency and safety in the corridor.
286	148th Avenue NE Access Management	148th Avenue NE	NE 20th Street	NE 36th Street	Implement more stringent access management along 148th Avenue NE from NE 20th Street to NE 36th Street to improve efficiency and safety in the corridor.

Table 19. Overlake projects (continued)

OVERLAKE PROJECTS					
Project ID	Project Title	Location	Project Limits: From	Project Limits: To	Description
287	148th Ave NE Pedestrian Overpass	148th Ave NE Grade Separation Pedestrian overpass			Provide a grade-separated pedestrian overpass that crosses 148th Avenue NE in the vicinity of 22nd street.
288	151st Avenue NE South	151st Avenue NE	NE 20th Street	NE 24th Street	Construct new 151st Avenue NE between NE 20th Street and NE 24th Street. Refer to the Overlake Neighborhood Plan for more details. Coordinate with the Overlake Village South Study.
289	NE 22nd St, West	NE 23rd St, West			Construct new NE 22nd Street from 148th Avenue NE to 152nd Avenue NE and design the street as a local access street using pedestrian supportive design with on-street parking and one through lane in each direction. Major street connections would be signalized.
290	NE 22nd St, East	NE 23rd St, East			Construct new NE 22nd Street from 152nd Avenue NE to Bel-Red Road and design the street as a local access street using pedestrian supportive design with on-street parking and one through lane in each direction. Major street connections would be signalized.
293	156th Avenue NE & NE 31st Street Turn Lane	156th Ave NE and NE 31st St			Construct an additional WB left-turn lane.
310	150th Avenue NE Connection	150th Ave	NE 26th Street	NE 24th Street	Construct Access Street in accordance with Overlake Village Design Standards, including 1 travel lane, parking lane and sidewalk in each direction.
311	151st Avenue NE Connection Segment II	151st Avenue NE	NE 27th Street	NE 28th Street	Construct neighborhood street in accordance with Overlake Village Design Standards, including 1 travel lane, parking lane, cycle track, and sidewalk in each direction as well as an urban pathway trail.

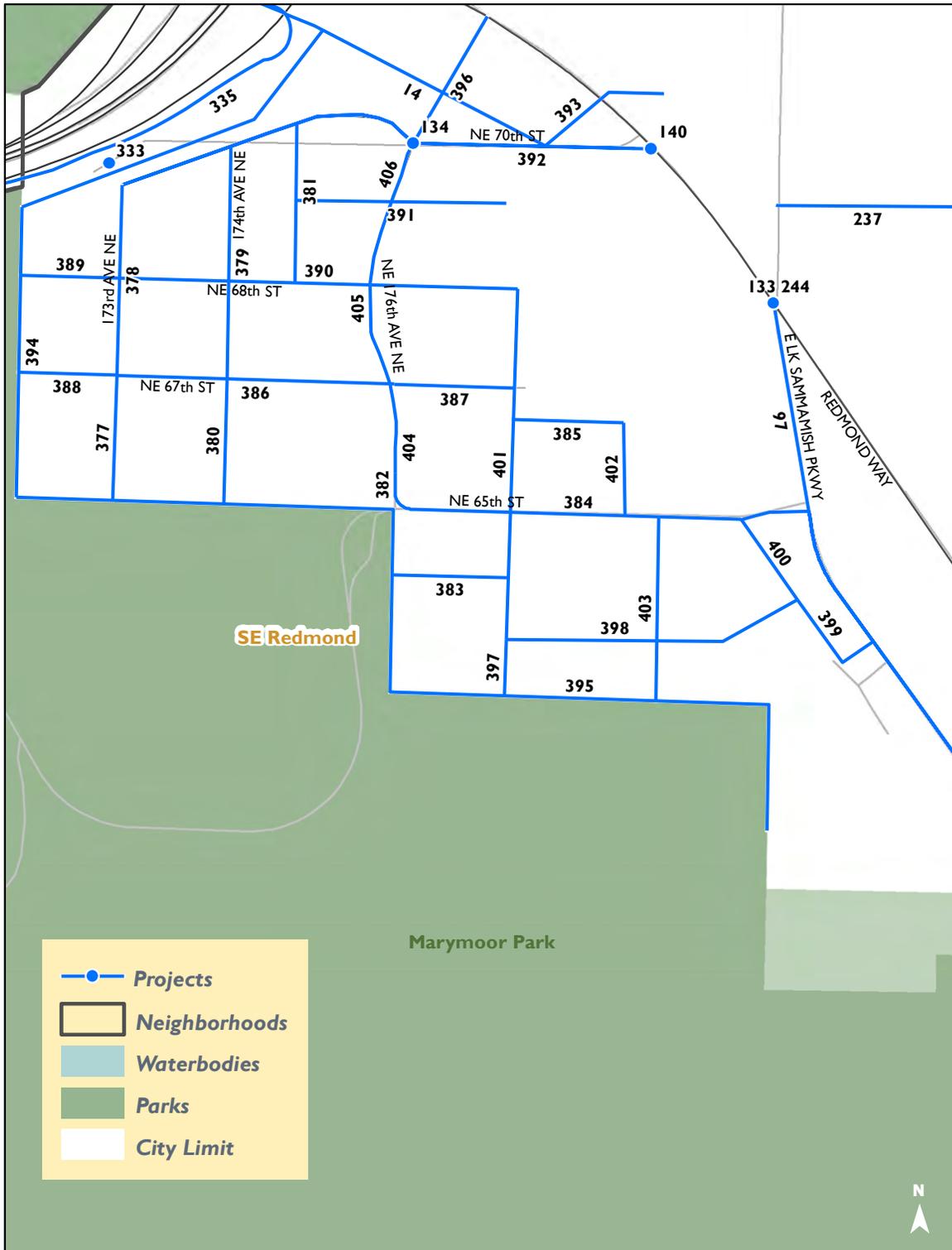
Table 19. Overlake projects (continued)

OVERLAKE PROJECTS					
Project ID	Project Title	Location	Project Limits: From	Project Limits: To	Description
312	151st Avenue NE Connection Segment I	151st Avenue NE	NE 24th Street	NE 27th Street	Construct neighborhood street in accordance with Overlake Village Design Standards, including 1 travel lane, parking lane, cycle track, and sidewalk in each direction as well as an urban pathway trail.
313	NE 26th Street Connection	NE 26th Street	152nd Avenue NE	Overlake Access Ramp Terminus	Construct Access Street in accordance with Overlake Design Standards, including 1 travel lane, parking lane and sidewalk in each direction.
314	NE 27th Street Connection	NE 27th street	152nd Avenue NE	Overlake Access Ramp Terminus	Construct Access Street in accordance with Overlake Village Design Standards, including 1 travel lane, parking lane and sidewalk in each direction.
318	NE 40th Street Sidewalk Widening	40th Street	SR 520	148th Avenue NE	Widen sidewalk on both sides of street to meet pedestrian modal corridor standards (8.5').
335	East Link Phase II				Connect to existing East Link light rail line and extend from Overlake Transit Center Station to Downtown Redmond Station along SR 520 and the Redmond Central Connector, including track, overhead electric wires, utilities, and stormwater. Consider light rail maintenance facility needs.
341	150th Avenue Mid-Block Crossing North	150th Ave NE	3800 block		Construct a mid-block crossing with flashing beacons on 150th Avenue NE in the vicinity of NE 38th Court.
342	150th Avenue NE Mid-Block Crossing South	150th Ave NE	3700 Block		Construct a mid-block crossing with flashing beacons on 150th Avenue NE near NE 36t Street.
343	Microsoft 520 Trail Access Points				Provide access points to and from 520 Trail.
345	156th Avenue NE and NE 45th Street Intersection Improvement				Extend the existing northbound left turn at 156th Avenue NE and NE 45th Street.

Table 19. Overlake projects (continued)

OVERLAKE PROJECTS					
Project ID	Project Title	Location	Project Limits: From	Project Limits: To	Description
346	NE 28th Street to Bel-Red Road Ped. and Bike Connection	NE 28th Street	156th Ave NE	Bel-Red Road	Provide a hard surface trail connecting NE 28th Street to Bel-Red Road. Acquire public pedestrian and bike easement on NE 28th Street to access Bel-Red Road at the intersection of NE 30th Street and Bel-Red Road.
348	156th Avenue Mid-Block Crossing South of NE 40th Street				Construct a signalized mid-block crossing between NE 31st Street and NE 36th Street, utilizing existing median as a pedestrian median. Coordinate crossing with existing transit stops.
366	156th Trail South	156th Avenue NE	Bel-Red Road	NE 40th Street	Intend to provide a high comfort bicycle facility along 156th Avenue NE. Expand the existing 8-foot wide sidewalk to a 12-foot wide multiuse trail on the east side of 156th Avenue NE from Bel-Red Road to NE 40th Street. Coordinate construction with Project 51..
372	Phases 1 & 2 SR 520 Active Traffic Management	SR 202	I-405		Add variable speed limits and variable message signs.
375	Bel-Red Road Widening between NE 20th Street and NE 24th Street	Bel-Red Road	NE 20th Street	NE 24th Street	Widen Bel-Red Rd from NE 20th Street and NE 24th Street. Improvements include 2 through lane in each direction, a center turn lanes, bike lanes, curb, gutter, sidewalks, street lights and storm drainage.
376	NE 31st St Bike Lanes (Construction)	NE 31st St	152nd Ave NE	156th Ave NE	Build bicycle lanes along NE 31st Street from the NE 36th Bridge over SR 520 to 156th Avenue NE.

Unfunded Buildout Plan – Marymoor Village



Note: projects shown are conceptual only; actual alignments may vary.

Figure 64. Unfunded Buildout Plan – Marymoor Village

Table 20. Marymoor Village projects

MARYMOOR VILLAGE PROJECTS					
Project ID	Project Title	Location	Project Limits: From	Project Limits: To	Description
14	East Lake Sammamish Trail Connection	East Lake Sammamish Trail	Redmond Central Connector	NE 70th Street	Provide grade separated trail through the SR 520/SR 202 Interchange area along the planned light rail alignment, connecting East Lake Sammamish Trail and Redmond Central Connector. Provide access to the planned Southeast Redmond light rail station.(see RZC Appendix 8A)
97	East Lake Sammamish Parkway	East Lake Sammamish Parkway	Redmond Way	187th Ave NE	Widen East Lake Sammamish Pkwy from Redmond Way to 187th Ave NE. Improvements include 1 through lane in each direction, left turn lanes where needed, bike lanes, curb, gutter, sidewalks, street lights, storm drainage, underground power, and right-of-way. (Also shown on page 205)
133	Redmond Way and East Lake Sammamish Parkway Intersection Improvements	Redmond Way at East Lake Sammamish Parkway			At Redmond Way / E Lake Sammamish Pkwy, convert NB triple left turns (on ELSP) to 2 left turns and thru to better spread traffic between the three lanes; Construct 2nd SB thru lane from 180th to ELSP. Coordinate with project 244.
134	NE 70th St and 176th Ave NE Truck Movement Enhancement	NE 70th Street at 176th Avenue NE			Improve the intersection geometry and traffic control for trucks and traffic operations at NE 70th St / 176th Ave NE (Note: coordinate with Sound Transit because East Link Draft EIS has proposed signaling this intersection). Coordinate with Southeast Redmond Light Rail Station Area Transportation Study.
140	Redmond ITS Improvements	Citywide			Install ITS improvements to improve traffic operations and safety. Improvements include traffic signal controller update, detection system, traffic CCTV, signal communications, signal head update, signalized crosswalk and pedestrian detection system, and battery backup system.
237	68th St Sidewalk	NE 68th St	180th Ave NE	185th Ave NE	Complete missing sidewalk on both sides of NE 68th Street where missing.
244	180th Ave NE & Redmond Way Crosswalk Modifications	180th Ave NE at Redmond Way			At Redmond Way/ 180th Ave NE, remove the diagonal crosswalk and move to the east/west legs; improve crosswalk on south leg with pedestrian refuge. Coordinate with project 133.

Table 20. Marymoor Village projects (continued)

MARYMOOR VILLAGE PROJECTS					
Project ID	Project Title	Location	Project Limits: From	Project Limits: To	Description
333	Southeast Redmond Light Rail Station				Construct a light rail station on the East Link line, including station platforms and entryways, and amenities including art, high quality non-motorized access, bicycle parking, and vehicle access to the station area. Construct a large parking facility to intercept East King County vehicle commuters, effectively utilizing this station as the terminus station of the line for vehicle parking, reducing impacts on Downtown Redmond and the Downtown Redmond terminus station.
335	East Link Phase II				Connect to existing East Link light rail line and extend from Overlake Transit Center Station to Downtown Redmond Station along SR 520 and the Redmond Central Connector, including track, overhead electric wires, utilities, and stormwater. Consider light rail maintenance facility needs.
377	173rd Ave NE Woonerf	173rd Ave NE	Marymoor Park boundary	NE 67th St	Construct woonerf-style local access facility (see RZC Appendix 8A)
378	173rd Ave NE Connection	173rd Ave NE	NE 67th St	NE 70th St	Construct collector arterial (see RZC Appendix 8A)
379	174th Ave NE Connection	174th Ave NE	NE 67th St	NE 70th St	Construct connector street (see RZC Appendix 8A)
380	174th Ave NE Woonerf	174th Ave NE	Marymoor Park boundary	NE 67th St	Construct woonerf-style local access facility (see RZC Appendix 8A)
381	175th PI NE Woonerf	175th PI NE	NE 68th St	NE 70th St	Construct woonerf-style local access facility (see RZC Appendix 8A)
382	176th Ave NE Retrofit – LW Tech Segment	176th Ave NE	NE 65th St	LW Tech north property line	Retrofit collector arterial (see RZC Appendix 8A)
383	NE 64th Wy Woonerf	NE 64th Wy	Marymoor Park boundary	177th Ave NE	Construct woonerf-style local access facility (see RZC Appendix 8A)
384	NE 65th St Retrofit	NE 65th St	Marymoor Park boundary	East Lake Sammamish Parkway	Retrofit collector arterial (see RZC Appendix 8A)
385	NE 66th Way Woonerf	NE 66th Wy	177th Ave NE	178th PI NE	Construct woonerf-style local access facility (see RZC Appendix 8A)

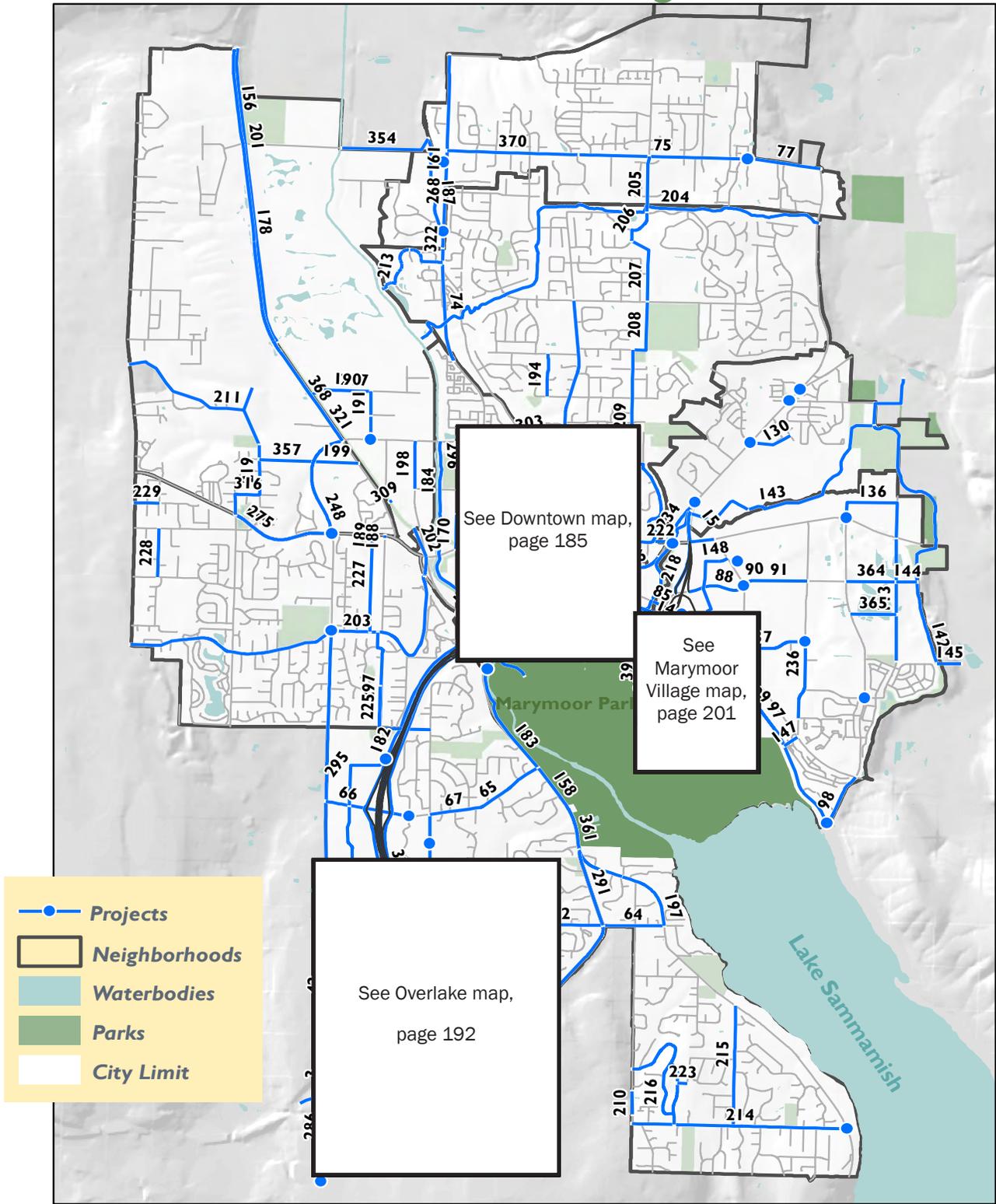
Table 20. Marymoor Village projects (continued)

MARYMOOR VILLAGE PROJECTS					
Project ID	Project Title	Location	Project Limits: From	Project Limits: To	Description
386	NE 67th St Retrofit – West Segment	NE 67th St	173rd Ave NE	176th Ave NE	Retrofit collector arterial (see RZC Appendix 8A)
387	NE 67th St Retrofit – East Segment	NE 67th St	176th Ave NE	177th Ave NE	Retrofit collector arterial (see RZC Appendix 8A)
388	NE 67th St Woonerf	NE 67th St	Marymoor Park boundary	173rd Ave NE	Construct woonerf-style local access facility (see RZC Appendix 8A)
389	NE 68th St Woonerf	NE 68th St	Marymoor Park boundary	173rd Ave NE	Construct woonerf-style local access facility (see RZC Appendix 8A)
390	NE 68th St Connection	NE 68th St	173rd Ave NE	177th Ave NE	Construct connector street (see RZC Appendix 8A)
391	NE 69th St Woonerf	NE 69th St	175th PI NE	177th Ave NE	Construct woonerf-style local access facility (see RZC Appendix 8A)
392	NE 70th St Retrofit	NE 70th St	173rd Ave NE	Redmond Way	Construct collector arterial street (see RZC Appendix 8A)
393	Redmond Way non-motorized crossing near Southeast Redmond Light Rail Station	Redmond Way between WB SR 520 on-ramp and NE 70th St	North side of Redmond Way	South side of Redmond Way	Consistent with the Southeast Redmond Neighborhood Plan, provide a non-motorized crossing of Redmond Way that increases route directness to/from the Southeast Redmond light rail station and minimizes potential conflicts with vehicles.
394	Marymoor Subarea Perimeter Trail – North Segment	Marymoor Park perimeter	Southwest corner of Marymoor Subarea	East Lake Sammamish Trail	Construct 14-foot-wide hard-surface path with adjacent 6-foot-wide soft-surface path (see RZC Appendix 8A)
395	Marymoor Subarea Perimeter Trail – South Segment	Marymoor Park perimeter	Southwest corner of Marymoor Subarea	Marymoor Connector Trail	Construct 12-foot-wide hard-surface path with 2-foot-wide hard-surface shoulders (see RZC Appendix 8A)
396	176th Ave NE Extension	176th Ave NE	NE 70th St	Redmond Way	Construct connector street with right-in, right-out access at Redmond Way to function as a third entrance to the subarea.
397	177th Ave NE South Woonerf	177th Ave NE	Marymoor Park boundary	NE 63rd St	Construct woonerf-style local access facility (see RZC Appendix 8A)
398	NE 63rd St Connection	NE 63rd St	177th Ave NE	180th PI NE	Construct connector street (see RZC Appendix 8A)

Table 20. Marymoor Village projects (continued)

MARYMOOR VILLAGE PROJECTS					
Project ID	Project Title	Location	Project Limits: From	Project Limits: To	Description
399	180th PI NE Connection – South Segment	180th PI NE	East Lake Sammamish Parkway	NE 63rd St	Construct connector street consistent with design approved as part of the Alexan Marymoor apartments project
400	180th PI NE Connection – North Segment	180th PI NE	NE 63rd St	NE 65th St	Construct local access street consistent with design approved as part of the Alexan Marymoor apartments project
401	177th Ave NE Connection	177th Ave NE	NE 63rd St	NE 68th St	Construct connector street (see RZC Appendix 8A)
402	178th PI NE Woonerf	178th PI NE	NE 65th St	NE 66th Wy	Construct woonerf-style local access facility (see RZC Appendix 8A)
403	179th Ave NE Woonerf	179th Ave NE	Marymoor Park Boundary	NE 65th St	Construct woonerf-style local access facility (see RZC Appendix 8A)
404	176th Ave NE Retrofit - 67th Segment	176th Ave NE	LW Tech north property line	NE 67th St	Retrofit collector arterial (see RZC Appendix 8A)
405	176th Ave NE Retrofit – Middle Segment	176th Ave NE	NE 67th St	NE 68th St	Retrofit collector arterial (see RZC Appendix 8A)
406	176th Ave NE Retrofit – North Segment	176th Ave NE	NE 68th St	NE 70th St	Retrofit collector arterial (see RZC Appendix 8A)

Unfunded Buildout Plan – Neighborhoods



Note: projects shown are conceptual only; actual alignments may vary.

Figure 65. Unfunded Buildout Plan – neighborhoods

Table 21. Neighborhood projects

NEIGHBORHOOD PROJECTS					
Project ID	Project Title	Location	Project Limits: From	Project Limits: To	Description
15	SR 520 Terminus Enhancements	Union Hill Rd at Avondale Rd	Union Hill Road and 178th PI NE	Avondale Road and Avondale Way	Provide a flyover ramp from westbound NE Union Hill Road to southbound SR 520; provide an Avondale Road flyover ramp over NE Union Hill Road with ramps to NE Union Hill Road. Provide grade separated crossing of Avondale Road for Bear Creek Trail extension. Complete bicycle lane network in project area for at grade portion. Complete sidewalks in project area. Enhance pedestrian and bicycle crossing safety through intersection improvements for at grade section. Improve HOV and freight access through the project area.
27	SR 520 & SR 202 Off Ramp Improvement	SR 520 and SR 202/ Redmond Way			Improve the geometry of Eastbound SR 520 off ramp at Redmond Way to reduce queue blocking.
44	Redmond Way & 148th Avenue NE Intersection Improvements	Redmond Way at 148th Avenue NE			Widen intersection to separate the northbound share through and left turn lane to have dual left turn lanes and two through lanes to improve traffic flow.
64	NE 40th St Rechannelization Segment V	NE 40th Street	Bel-Red Road	West Lake Sammamish Parkway	Within the existing right-of-way, provide one vehicular lane, 5.5 to 6 feet bike lane, and 5.5 to 6 feet sidewalk in each direction. A 5.5 feet planter is optional in the eastbound direction. This optional planter requires resizing the width of vehicular lanes to 11 feet. Other improvements include street scape, stormwater treatments, utilities, and street light. Coordinated with 62.
65	NE 51st Street New Sidewalk	NE 51st Street	158th Avenue NE	West Lake Sammamish Parkway	Complete missing segments of sidewalk on the southside of NE 51st St from 158th Ave NE to West Lake Sammamish Pkwy.
66	NE 51st St Bike Lanes	NE 51st Street	148th Avenue NE	154th Avenue NE	Provide bicycle lanes on NE 51st Street in both directions from 148th Avenue NE to 154th Avenue NE. Install additional bike signage and pavement markings in existing bike lane between 154th Avenue NE and West Lake Sammamish Parkway.

Table 21. Neighborhood projects (continued)

NEIGHBORHOOD PROJECTS					
Project ID	Project Title	Location	Project Limits: From	Project Limits: To	Description
67	NE 51st St Rechannelization	NE 51st Street	156th Avenue NE	West Lake Sammamish Parkway	Install additional bike signage and rechannelize roadway to install standard bike lane in the westbound (uphill) direction and implement a shared lane in the eastbound (downhill direction) from 156th Avenue NE and West Lake Sammamish Parkway.
74	160th Ave NE Extension	160th Avenue NE	NE 99th Street	Red-Wood Road	Construct new 160th arterial from current terminus at approximately NE 99th Street north to the intersection with Red- Wood Rd. Modify existing 160th arterial from NE 90th St north to current terminus. Relocate transit service and amenities from Red-Wood Road to 160th Avenue NE. Improvements include 1 through lane in each direction, left turn lanes, bike lanes, curb, gutter, sidewalks, transit amenities, street lights, storm drainage, wetland and stream mitigation, right of way and easement acquisition.
75	NE 116th St Widening Segment II	NE 116th Street	167th Place NE	179th Place NE	Widen NE 116th St from 167th Place NE to 179th Place NE. Improvements include 1 through lane in each direction, left turn lanes, bike lanes, curb, gutter, sidewalks, equestrian trail, street lights, storm drainage, underground power, right-of-way and easement acquisition.
77	NE 116th St Segment III	NE 116th Street (East End)	179th Avenue NE	Avondale Rd	Widen remaining sections of NE 116th St from 179th Avenue to Avondale Road. Improvements include 1 through lane in each direction, left turn lanes, bike lanes, curb, gutter, sidewalks, equestrian trail, street lights, storm drainage, underground power, right-of-way and easement acquisition.

Table 21. Neighborhood projects (continued)

NEIGHBORHOOD PROJECTS					
Project ID	Project Title	Location	Project Limits: From	Project Limits: To	Description
85	Redmond Way Bridge Replacement Over Bear Creek	Redmond Way	Bear Creek Crossing	Avondale Road On Ramp	Replace the Redmond Way Bridge over Bear Creek. Improvements include 2 through lanes in each direction on Redmond Way and NE 76th Street, 2 eastbound left turn lanes to NE 76th St, 1 eastbound right turn lane to westbound SR 520 on-ramp, sidewalks, Bear Creek and E Lake Sammamish Trail connections, street lights, storm drainage, right-of-way and easements. The bridge will be designed to accommodate a grade separated connection of Bear Creek Trail underneath the bridge. The bridge should only be replaced when the existing bridge conditions no longer meet federal structural rating requirements.
88	NE 76th Street Widening	NE 76th St	Avondale Road at northbound on ramp to SR 520 terminus	178th Place NE	widen roadway to include three 12' travel lanes and two bike lanes and 6' sidewalks, realign roadway to comply with COR minimum horizontal curve radius requirement. At the signalized intersection of Fred Meyer and Target, add crosswalk to west leg, use existing right run drop lane eastbound, re-aligned to account for roadway widening. At intersection of 76th and eastbound 520 ramps add a crosswalk enabling pedestrian and bicycle crossing. Improve transit amenities.
90	NE 76th Street Widening 178th Place to 185th Ave NE	NE 76th St	178th Place NE	185th Avenue NE	Widen roadway to include a 12' center turn lane, two 12' travel lanes and two 5.5' bike lanes and 6' sidewalks on both sides of roadway. Coordinate with 91.
91	NE 76th St Rechannelization	NE 76th St	178th Place NE	185th Avenue NE	Rechannelize roadway to include one 12-foot 2 way left turn lane, one 14' shared lane in each direction. Coordinate with 90.
96	East Lake Samm. Pkwy and 187th Ave NE Signal	East Lake Sammamish Parkway at 187th Ave NE			Install new traffic signal. Improvements include southbound left turn lane and reconstruct grade separated trail crossing. Design to accommodate project 97.

Table 21. Neighborhood projects (continued)

NEIGHBORHOOD PROJECTS					
Project ID	Project Title	Location	Project Limits: From	Project Limits: To	Description
97	East Lake Sammamish Parkway	East Lake Sammamish Parkway	Redmond Way	187th Ave NE	Widen East Lake Sammamish Pkwy from Redmond Way to 187th Ave NE. Improvements include 1 through lane in each direction, left turn lanes where needed, bike lanes, curb, gutter, sidewalks, street lights, storm drainage, underground power, and right-of-way.
98	187th Ave NE Widening	187th Ave NE	East Lake Sammamish Parkway	Redmond Way	Widen 187th Ave NE from East Lake Sammamish Pkwy to Redmond Way. Improvements include 1 through lane in each direction, left turn lanes, bike lanes, curb, gutter, sidewalks, street lights, storm drainage.
113	192nd Ave NE Extension	192nd Ave NE Extension	NE 68th St	Union Hill Rd	Construct new 192nd Ave NE from NE 68th St to Union Hill Rd. Improvements include 1 through lane in each direction, left turn lanes, bike lanes, sidewalks, street lights, traffic control, storm drainage, right-of-way and easements.
127	NE 95th St and Avondale Realignment	NE 95th Street at Avondale Road			Intersection re-alignment reduces skew, adds a north leg crosswalk, realigns east/west legs removing split-phasing and provides for north to south U-turns.
129	188th Ave NE and Union Hill Right Turn Lane	188th Avenue NE at NE Union Hill Road			Improve the intersection of 188th Ave NE at Union Hill Rd by building northbound exclusive right-turn lane.
130	Avondale Road and 180th Ave Reconfiguration	Avondale Road at 180th Avenue NE			Intersection reconfiguration to add eastern fourth leg serving Avondale Green subdivision and south leg crosswalk. Intersection also allows for north and south U turns. Includes 1,200 feet of new street connecting to 183rd Court NE.
135	188th Ave NE and NE 65th St Intersection Improvements	188th Avenue NE at NE 65th Street			Improve intersection operations and safety at the intersection of 188th Avenue NE and NE 65th Street including but not limited to sight distance and pedestrian crossing.
136	NE 84th St Stormwater Enhancement	188th Avenue NE, 192nd Avenue NE north of NE Union Hill Rod, and NE 84th Street			Improve NE 84th Street and portions of 188th Avenue NE, and 192nd Avenue NE north of Union Hill Road to coordinate with a Natural Resources CIP project.

Table 21. Neighborhood projects (continued)

NEIGHBORHOOD PROJECTS					
Project ID	Project Title	Location	Project Limits: From	Project Limits: To	Description
142	Evans Creek Trail Extension	SE Redmond Trail	188th Ave NE	196th Ave NE south of Union Hill Road	Build extension of the Evans Creek Trail.
143	Bear Creek and Evans Creek Trail Extension	Along Bear Creek and Evans Creek north of NE Union Hill Road	Approx. NE 95th St	Union Hill Rd	Build extension of the Bear and Evans Creek Trail system.
144	Woodbridge Trail Connection	Approx. NE 76th Street	192nd Ave NE	Arthur Johnson Park	Add trail connections from Woodbridge neighborhood to the SE Redmond Trail (At approximately NE 76th Street).
145	Woodbridge-to-Evans Creek Natural Area Trail	Woodbridge-to-Evans Creek Natural Area Trail	Evans Creek Trail	Evans Creek Natural Area	Add a trail from Woodbridge neighborhood to 196th Ave NE and the Evans Creek Natural Area.
147	185th Avenue NE-to-East Lake Sammamish Park Pedestrian Trail	185th Avenue NE	Redmond Way	East Lake Sammamish Parkway	Add pedestrian trail from south terminus of 185th Ave NE to E. Lake Sammamish Parkway and East Lake Sammamish Trail.
148	180th Ave NE "Pedestrian Spine"	Pedestrian spine	178th Place NE	NE 70th Street	Construct a "Pedestrian Spine" or corridor that connects the future light rail station and Southeast Redmond retail commercial area and other transit facilities in the vicinity.
154	Avondale Rd and Avondale Way Safety and Access Improvements	Avondale Road at Avondale Way			Realign intersection replacing slip lane with a pedestrian bulbout with bike lane continuing through in existing location. Add right turn only lane to replace slip lane. Install crosswalks linking bus stops together.
156	Willows Road Widening North	Willows Road	NE 116th St	NE 124th St	Widen Willows Road from NE 116th St to NE 124th St. Improvements include 2 through lanes in each direction, left turn lanes, bike lanes, curb, gutter, sidewalks, transit amenities, street lights, storm drainage, underground power, right-of-way and easement acquisition.

Table 21. Neighborhood projects (continued)

NEIGHBORHOOD PROJECTS					
Project ID	Project Title	Location	Project Limits: From	Project Limits: To	Description
158	West Lake Sammamish Parkway Interim Improvements	West Lake Sammamish Parkway	NE 51st St	Bel-Red Road	Provide interim nonmotorized facilities by striping the west side of West Lake Sammamish Parkway between NE 51st Street and Bel-Red Road to include a bicycle lane and pedestrian path. Provide additional signage and street pavement markings for bicycles on the east side of the street.
161	Redmond Woodinville Road Widening	Red-Wood Road	160th Ave NE Extension	NE 124th St	Widen Red-Wood Rd from intersection with new 160th Ave NE Extension near the Puget Power trail north to NE 124th St. Improvements include 1 through lane in each direction, left turn and extended right turn lanes if appropriate, access management, bike lanes, curb, gutter, sidewalks, street lights, storm drainage, underground power and right-of-way acquisition.
162	Redmond Woodinville Road and NE 109th St Turn Lane	Red-Wood Road at NE 109th St			Add a northbound right-turn lane.
178	Willows Road Widening South	Willows Road	NE 90th St	NE 116th St	Widen Willows Rd from NE 90th St to NE 116th St. Improvements include 2 through lanes in each direction, center left turn lanes/medians, bike lanes, curb, gutter, sidewalks, transit amenities, pedestrian crossings, street lights, storm drainage, underground power, right-of-way and easement acquisition.
187	154th Place NE Widening and Safety Enhancement	154th Pl NE	Redmond Woodinville Road	NE 116th St	Widen roadway to provide shoulder(s) wide enough to accommodate pedestrians and bicyclists.
188	152nd Ave NE Staircase	152nd Ave NE at Redmond Way			Construct staircase between Redmond Way and 152nd Avenue NE. Add bike runnel.
189	151st Avenue NE Staircase	151st Ave NE at Redmond Way			Construct staircase between Redmond Way and 151st Ave. Add bike runnel.
190	NE 95th Street Sidewalk	NE 95th St	Willows Road	151st Ave NE	Construct sidewalk on south side of roadway including curb, gutter, and storm as applicable.

Table 21. Neighborhood projects (continued)

NEIGHBORHOOD PROJECTS					
Project ID	Project Title	Location	Project Limits: From	Project Limits: To	Description
191	151st Avenue NE Sidewalk	151st Ave NE	NE 95th St	NE 92th St	Construct sidewalk on east side of roadway including curb, gutter, and storm as applicable.
194	164th Ave NE Sidewalk	164th Ave NE	NE 95th St	NE 99th St	Construct sidewalk on roadway including curb, gutter, and storm as applicable.
197	Idylwood Park and Transit Safety and Access Project	West Lake Sammamish Parkway	Bel-Red Road	NE 40th St	Construct sidewalk on north side of roadway. Include curb, gutter, and storm as applicable.
198	154th Ave NE Sidewalk	154th Ave NE	NE 85th St	NE 90th St	Construct 5' wide sidewalk on west side of 154th Ave. Include curb, gutter, and storm as applicable.
199	NE 87th Street Sidewalk	NE 87th St	Willows Road	148th Ave NE	Construct sidewalk over existing ditch with existing 10' of ROW. Include curb, gutter, and storm as applicable.
201	Redmond Central Connector Segment III	Redmond Central Connector	NE 100th St	North City Limits	Complete the third segment of the Redmond Central Connector, including regional trail and aesthetic enhancements.
204	PSE Trail Improvements	Puget Sound Energy Trail	Sammamish River Trail	Avondale Road	Construct a hard surface regional trail with parallel soft surface trail.
205	172nd Ave NE Trail	172nd Ave NE	NE 111th St	NE 116th St	Construct a hard surface regional trail with parallel soft surface trail.
206	171st Bike Boulevard	171st PI NE / 172nd PI NE	172nd Trail	NE 111th Street	Construct bicycle boulevard treatments such as bicycle related wayfinding signage and channelization, and median islands.
207	172nd Trail Improvement	172nd Trail	104th Street	172nd PI NE	Construct a hard surface regional trail with parallel soft surface trail.
208	Hartman Park Trail Enhancement	172nd Ave NE	171st Ave NE	NE 104th St	Construct a hard surface regional trail connection.
210	Trail at Ardmore Improvement	Trail at Ardmore	NE 24th St	172nd Ave NE	Construct a hard surface regional trail with parallel soft surface trail, include design treatments to slow bicycle speeds along trail corridor.

Table 21. Neighborhood projects (continued)

NEIGHBORHOOD PROJECTS					
Project ID	Project Title	Location	Project Limits: From	Project Limits: To	Description
211	PSE Trail Enhancement	Puget Sound Energy Trail	NE 93rd Ct	Puget Sound Energy Trail	Construct a hard-surface trail linking the existing PSE trail with 93rd Court and northern terminus of 142nd Avenue adjacent to Willows Creek Park through existing easement. Add regional bicycle wayfinding and shared lane markings from the end of the trail at 93rd Court to 132nd Avenue.
213	106th Street Connection	NE 106th St	Red-Wood Road	Sammamish River Trail	Construct a trail linking the Sammamish River Trail with 106th Street. Add wayfinding and shared lane markings along 106th Street. Acquire easements.
214	NE 24th Street Rechannelization	NE 24th St	172nd Avenue NE	West Lake Sammamish Parkway	Rechannelize to add bicycle lanes in both directions between West Lake Sammamish Parkway and 180th Avenue NE, and a cross section with an uphill bike lane and a downhill sharrow between 180th Avenue and 172nd Avenue NE/City Limit. Where space exists include on street parking in roadway cross section.
215	180th Avenue NE Sidewalk and Bike Lanes	180th Avenue NE	West Lake Sammamish Parkway	NE 24th Street	Enable nonmotorized connections to Audubon Elementary. Construct sidewalk on west side of roadway. Add bicycle lanes to both sides of roadway. Include curb, gutter, and storm.
216	Idylwood Shared Lane Markings	174th Avenue, 175th Avenue, 28th Street	172 Avenue NE	NE 24th Street	Add shared lane markings south on 174th Avenue and north on 175th Avenue, and in both directions on 28th Street, indicating proper positioning for cyclists along bike route connecting to 172nd Avenue and 24th Street.
217	151st Ave NE Rechannelization	151st Avenue, 95th Street	90th Street at 151st Avenue	Willows Road at NE 95th Street	Rechannelize existing roadway to include bicycle lanes on both sides of roadway.
218	Avondale Road/ SR 520 Off Ramp Sidewalk	Westbound 520 to NE 76th St off ramp	Union Hill Road	NE 76th St	Provide sidewalk on west side of roadway, including curb gutter and stormwater as applicable.
219	Redmond Way to 142nd Ave NE Bike Blvd	140th Ave NE, NE 84th St, 142nd Ave NE	Redmond Way	PSE Trail (Planned)	Linking up with future Trail through Willows Creek Park, create bike boulevard per Bicycle Facility Design Guidelines.
222	80th Staircase	NE 80th Street extension	172nd Ave NE	Avondale Way	Construct staircase between Redmond Way and 80th Street. Add bike trough/ runnel.

Table 21. Neighborhood projects (continued)

NEIGHBORHOOD PROJECTS					
Project ID	Project Title	Location	Project Limits: From	Project Limits: To	Description
223	NE 27th Place Trail Connection	NE 27th Place	175th Avenue NE	176th Place NE	Construct neighborhood sidewalk connection.
225	152nd Ave NE Vertical Curb	152nd Ave NE	NE 60th Street	6400 Block	Replace roll up curb with vertical curb, improve sidewalk and create student load/unload zone that provides convenient access for children walking, biking and taking the bus to school.
227	151st Avenue NE Sidewalk	151st Ave NE	North of Old Redmond Road	End of 151st Ave NE	Construct sidewalk on one side of the street.
228	134th Ave NE Sidewalk	134th Ave NE	NE 75th St	NE 80th St	Construct sidewalk on one side of the street.
229	NE 83rd St Sidewalk	NE 83th St	132nd Ave NE	134th Ave NE	Construct sidewalk on one side of the street.
234	Avondale to Union Hill Rd Sidewalk	Avondale Way	North of Union Hill	Avondale Rd	Complete missing sidewalk on east side of Avondale Way north of Union Hill Rd.
236	185 Avenue NE Sidewalk	185th Ave NE	NE 68th St	NE 62nd Court	Complete missing sidewalk on west side of 185th Avenue NE near NE 68th Street, and south of NE 65th Street.
248	148th Ave NE Access Improvements	148th Ave NE, Willows Rd to Redmond Way			Locate and construct pedestrian crossing and traffic signal to serve residents and office workers; access to bus stops at 148th Avenue and 87th Street (new Rapid Ride route).
252	156th Ave NE Midblock Crossing	156th Avenue NE (between 45th & 51st)			Construct a signalized mid-block crossing between NE 45th Street and NE 51st Street, utilizing existing median as a pedestrian median. Coordinate crossing with existing transit stops.
253	Bear Creek Trail & NE Union Hill Road Modifications	Bear Creek Trail	Union Hill Road		Raise trail to enable use by avoiding flood water from Bear Creek. Remove trail surface, and install boardwalk. Raise enough to meet bike height needs.
268	Red-Wood Road Shoulder	Red-Wood Road (SR 202)	NE 109th Street	116th Street NE	Construct 2,180' of paved shoulder along west side. Shift centerline to allow continuous striped shoulder on both sides for pedestrians and cyclists.
271	West Lake Sammamish Parkway & NE 24th Street Intersection Regrading	W Lake Sammamish Pkwy at NE 24th Street			Improve sight-distance by re-grading Northwest corner of intersection.

Table 21. Neighborhood projects (continued)

NEIGHBORHOOD PROJECTS					
Project ID	Project Title	Location	Project Limits: From	Project Limits: To	Description
275	Redmond Way Sidewalk South	Redmond Way	140th	145th	Construct missing sidewalk on south side; solutions include extensive retaining walls or structured steel walkway w/railing. Improve transit stop amenities.
276	185th Ave NE & NE 68th Street Ped Improvements	185th Avenue NE at NE 68th Street			Install traffic control, pedestrian crosswalks, and rain garden for employees in the area.
321	Willows Road Rechannelization	Willows Road	South of PSE Trail	NE 90th Street	Rechannelize to provide southbound bicycle lane.
278	Bear Creek Parkway & 168th Ave NE Crosswalk	Bear Creek Parkway at 168th Avenue NE			Install crosswalk on west leg, providing access to Bear Creek trail.
280	NE 80th Street & 165th Avenue NE Intersection Modification	NE 80th Street at 165th Avenue NE			Install pedestrian crossing on east side with sidewalk “bulb-out” into street.
282	151st Avenue NE & NE 90th Street Traffic Signal	151st Avenue NE at NE 90th Street			Install traffic signal and provide for pedestrian crossings with bump-outs. Install Rapid Ride stop.
291	Bel-Red Road Widening	Bel-Red Rd	West Lake Sammamish Parkway	NE 40th Street	Widen Bel-Red Rd from West Lake Sammamish Pkwy to NE 40th St. Improvements include 2 through lane in each direction, left turn lanes, bike lanes, curb, gutter, sidewalks, street lights and storm drainage.
295	150th Avenue NE and 520 Trail Nonmotorized Connection	150th Avenue NE	NE 60th Street	NE 51st Street	Construct hard surface nonmotorized connection between 150th Avenue NE and a planned 520 Trail access point north of NE 51st Street (on private property). The alignment of this nonmotorized connection follows the alignment of existing path on Microsoft’s private campus. This project would be coordinated with Microsoft and not require ROW or easements.
297	152nd Avenue NE Bicycle Connection	60th Street, 152nd Avenue, 68th Street	Old Redmond Road	156th Avenue	Construct bicycle treatments such as bicycle related signage and channelization.
300	NE 116th Street & 154th Place NE Staircase	116th Street	154th Pl		Construct staircase between 116th Street/Red-Wood Road and 154th Place. Add bike runnel.

Table 21. Neighborhood projects (continued)

NEIGHBORHOOD PROJECTS					
Project ID	Project Title	Location	Project Limits: From	Project Limits: To	Description
309	8400 Block Trail	8400 block	Redmond Central Connector		Purchase right-of-way and construct pedestrian and bicycle trail connecting local streets to future Redmond Central Connector.
322	Red-Wood Road Street Sidewalk	Red Wood Road south of 109th	NE 109th Street	Around NE 107th Street	Construct 420' sidewalk along west side using cantilevered structure (similar to Bel- Red Road near Microsoft campus).
316	NE 84th Street Sidewalk	NE 84th Street	140th Avenue NE	142nd Avenue NE	Construct sidewalk to provide access to signal at Redmond Way. Ensure sidewalk facilitates safe pedestrian movements to and from intersection. Include curb, gutter, and storm treatments.
338	Bike Parking Facilities in Bear Creek Park and Ride Lot				Provide secure bike parking facilities at the Bear Creek Park and Ride. Work with King County Metro.
340	148th Avenue NE and Old Redmond Road Intersection Improvement				Extend the eastbound right turn lane by increasing length and channelization.
344	NE 51st Street and 154th Place NE Westbound Left-Turn Lane	NE 51st Street	154th Ave NE		Provide a westbound left-turn lane on NE 51st Street at the intersection of NE 51st and 154th Place NE. Improvement includes right-of-way acquisition.
354	NE 116th Street Shoulder Widening	NE 116th Street	Sammamish River	154th Place NE	Widen the shoulder from the Sammamish River to 154th Place NE for cyclists and pedestrians.
357	NE 87th Street Staircase and Sidewalk				Connect NE 87th Street near 148th Avenue to 87th Street and 147th Avenue with a combination of staircases and sidewalk.
358	Avondale Road and 180th Avenue NE Crossing Enhancement				Add crosswalk and two ADA ramps to the south leg of the intersection.
364	NE 76th Street Extension - Segment 2	NE 76th Street	188th Avenue NE	192nd Avenue NE	Construct new NE 76th St from 188th Ave NE to 192nd Ave NE. Improvements include 1 through lane in each direction, left turn lanes or medians to create a 3 lane section, bike lanes, sidewalks, street lights, traffic control, storm drainage, right-of-way and easements. Consider roundabout at 185th Ave and 76th St.

Table 21. Neighborhood projects (continued)

NEIGHBORHOOD PROJECTS					
Project ID	Project Title	Location	Project Limits: From	Project Limits: To	Description
365	NE 73rd Street Extension - Segment 2	NE 73rd Street	188th Avenue NE	192nd Avenue NE	Construct new NE 73rd St from 188th Avenue NE to 192nd Avenue NE. Improvements include 1 through lane in each direction, left turn lanes, bike lanes, sidewalks, street lights, traffic control, storm drainage, right-of-way and easements.
370	NE 116th St Widening Segment I Phase II	NE 116th St	Red-Wood Road	167th Pl NE	Complete NE 116th St from Red-Wood Road to 167th Place NE. Improvements include one through lane in each direction, left turn lanes, bike lanes, curb, gutter, sidewalks, equestrian trail, street lights, storm drainage, underground power, right-of-way, and easement acquisition. Improvements coordinate with project # 356: the construction of a roundabout at NE 116th Street and 162nd Avenue NE. Phase I is project ID # 76.
374	New SR 520 Auxiliary Lane at Various Locations	SR 520	I-405	West Lake Sammamish Parkway	Construct new auxiliary lanes at the following locations: 1) eastbound between the 148th Ave NE interchange and the NE 40th St interchange; 2) eastbound from NE 51st Street on-ramp to Westlake Sammamish Parkway off-ramp; and 3) westbound from Westlake Sammamish Parkway on-ramp to NE 51st Street off-ramp.

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Appendix F:

Design Guidance

Design guidance is an implementation tool for the street, transit, pedestrian, and bicycle system plans (Chapter 4). Together with system plans, this guidance helps clarify the intent for amending design standards and regulations contained in Redmond Zoning Code, Redmond Construction Design Standards, and other relevant documents as needed to be in alignment with the TMP. Also, design guidance directs the selection of engineering design parameter values for capital improvements, such as those included in the American Association of State Highway and Transportation Officials (AASHTO) Green Book.

Design guidance starts from streets, which is organized by street functional classifications (Figure 66). Table 22 includes important parameters for defining the street cross-section and refers to subsequent tables in this appendix for detailed guidance for system plans of transit, pedestrians, and bicyclists (Tables 23 to 31).

Street Design Guidance

In using the design guidance in Table 22, it is important to recognize the following:

1. Several design parameters affect street cross-section. These are: mid-block lane width, posted speed limit, and maximum number of general purpose lanes. Where there is a range between maximum and minimum values, the minimum value is preferred. Wide lanes, added turn lanes, and extended-length turn lanes will only be allowed following thorough evaluation of the land use context, multimodal context, right-of-way cost, and other compelling engineering considerations.
2. Table 22 is arranged by street classification. While functional classification is important in guiding street design, other controlling considerations include the land use context and the need to balance multimodal needs. Therefore, not all streets in the same functional classification may have uniform design. For example, in some cases, due to right-of-way constraints or the local context, streets may be narrower than other streets in the same functional classification.
3. There are exceptions to Table 22 parameters in cases where current conditions on certain streets differ from this table, where interim street improvements are made, or where there are unique site-specific design considerations. For example, the current posted speed limit on Willows Road (between NE 95th Street and north city limits) is 45 mph, higher than the maximum posted speed limit, 40 mph, for principal arterials. The Three-Year Action Plan provides direction for a speed limit revision study, which will review speed limits on select corridors to consider the interests of all street users. For new improvements, any such deviation from this table shall be documented through a thorough evaluation and deliberate decision process.

Table 22. Street design guidance

Functional Classification	Principal Arterial	Minor Arterial	Collector Arterial	Connector	Local Access	Woonerf
Maximum pedestrian crossing length	75 feet					Not applicable
Maximum number of general purpose through lanes in each direction	2	2	1	1	1	1
Mid-block lane width (feet)	11-12	10.5 ~ 11	10.5 ~ 11	10~ 10.5	10	10 max. 20 in both directions
Speed limit (mph)	35-40	30-35	25-30	25	25	10

Roadway Functional Classification System

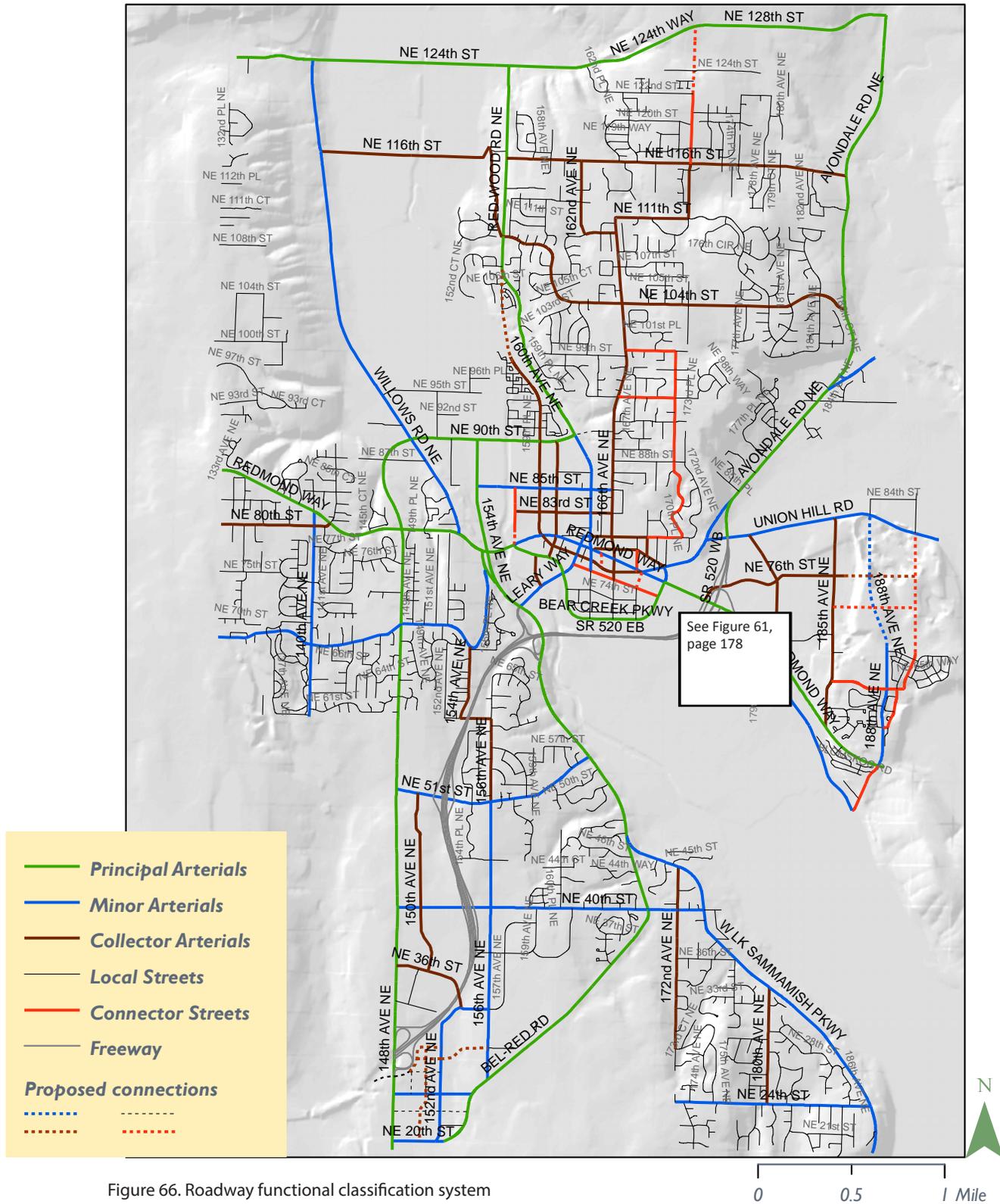


Figure 66. Roadway functional classification system

Table 22. Street design guidance (continued)

Functional Classification	Principal Arterial	Minor Arterial	Collector Arterial	Connector	Local Access	Woonerf
Access management	Maintain spacing between any adjacent streets and driveways of 150 feet. Only connect driveways from parcels to public streets with the lowest functional classification.					
Transit facilities	Refer to Tables 23 and 24 for design guidance.					
Bike facilities	Generally dedicated bike facilities on both sides of arterials; mixed with traffic for local access streets and woonerf. See Tables 25 through 28 for detailed design guidance.					
On-Street parking (7 ~ 8 feet in width, 8 feet preferred)	Generally discouraged along principal and minor arterials and encouraged along other types of streets. However, parking is encouraged regardless of functional classifications in three areas: Downtown Urban Center, Overlake Urban Center, and the Southeast Redmond light rail station area.					
Landscape strip	Stormwater bioretention swales, treatment planters, or other types of natural stormwater drainage treatment methods. See Table 30 for required width.					Stormwater facilities at edge or through pervious pavement
Sidewalks	Required for both sides of all streets. See Table 30 for design guidance. Design shall support natural infiltration of stormwater. Facility and landscaping locations are adjacent to the street to provide pedestrian buffers.					

Transit Design Guidance

There are two categories of transit modal corridors in the transit system plan. They are high and medium demand transit modal corridors.

High Demand Transit Modal Corridors

These corridors include major arterials and SR 520, connecting Redmond’s urban centers and major neighborhood activity centers. These are recommended as high priority. They possess the highest demand for transit, have the highest levels of service today and into the future, and represent the local and regional transit spine. The person-carrying capacity of transit in these corridors is similar to an entire general purpose lane of travel and is critical to the functioning of the transportation system, particularly in the urban centers where transit is critical to the functioning of the entire transportation system and represents the most significant ability to accommodate peak travel growth. These corridors are the highest priorities for service hour and infrastructure investments, creating service that is fast, frequent, reliable, and easy to get to.

The transit service standard for these corridors is that they should contain one or more routes with a combined frequency of 15 minutes or better throughout the day. Wherever possible, service should be focused in these corridors.

Medium Demand Transit Modal Corridors

These corridors support active transit patronage and provide important coverage and local access functions throughout the city by providing convenient access to Redmond’s urban centers and the regional transit spine. These corridors may not see the City’s highest levels of service investment or ridership. Investments should focus on improving access to adjacent housing and important services in order to maximize this function. The transit service standard for these corridors requires including one current or future route with a target of 30-minute frequency all day.

Bicycle System Map

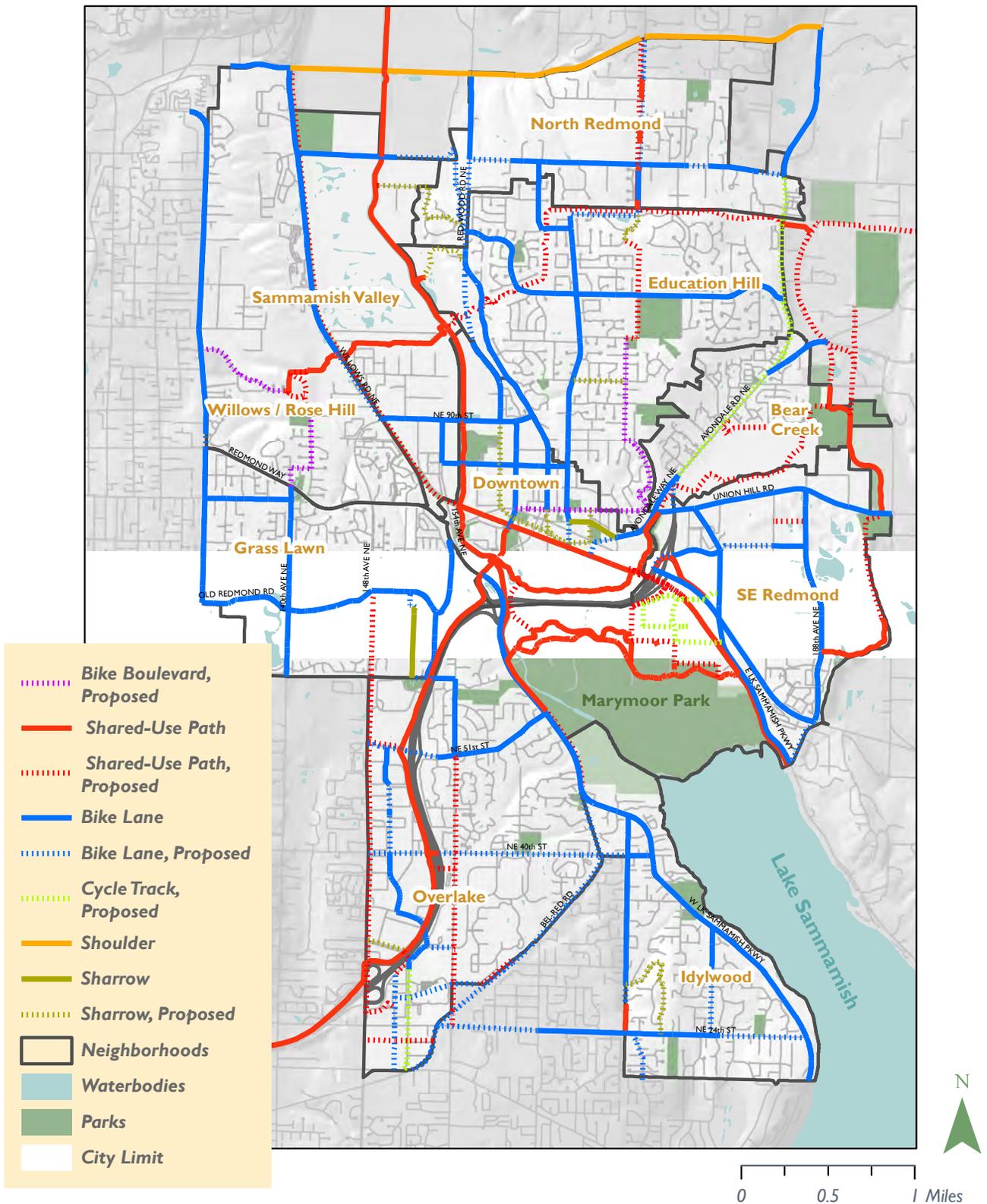


Figure 67. Bicycle system map

Transit System Plan

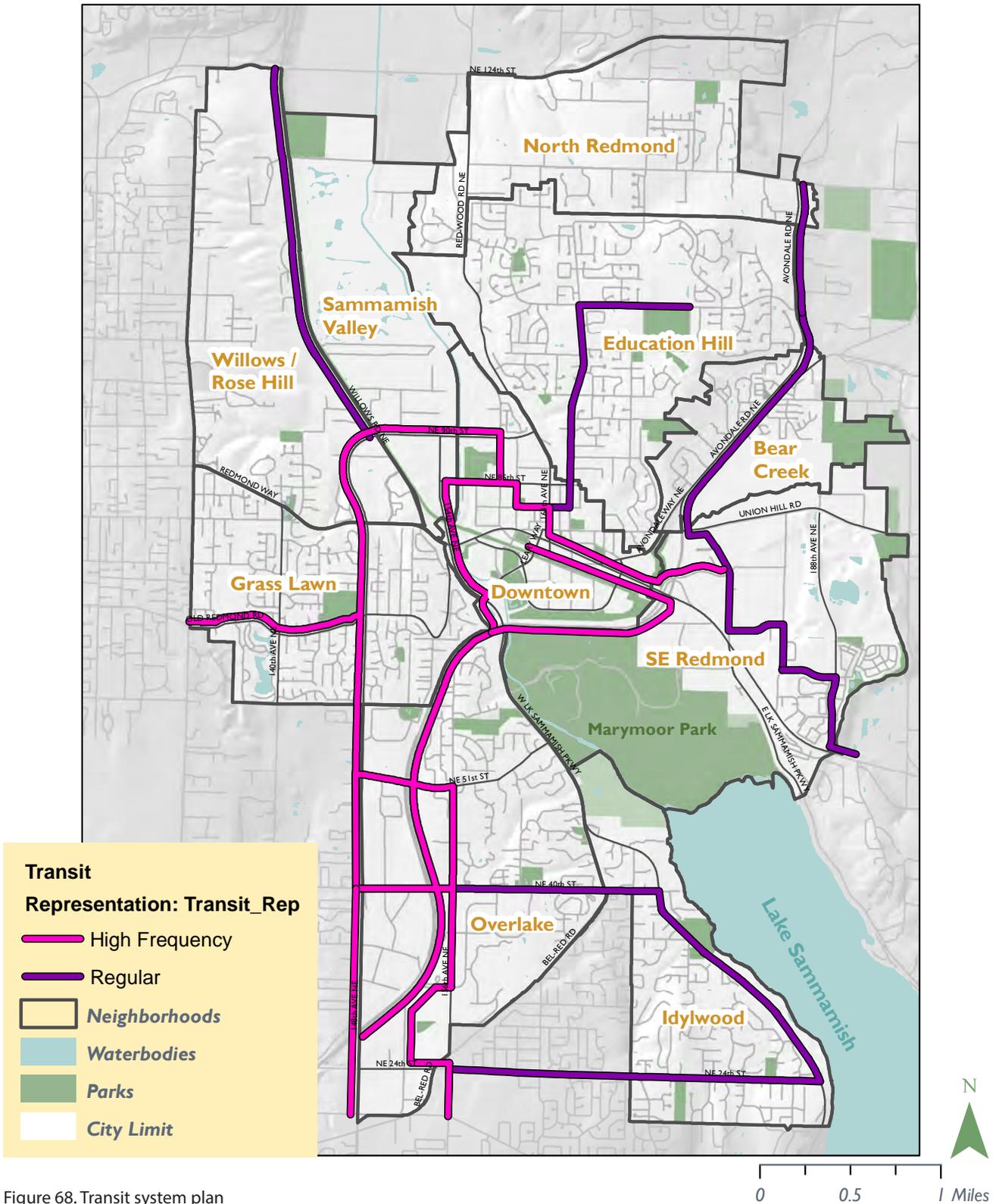


Figure 68. Transit system plan

Table 23. Design guidance for high demand corridors

Treatment	Definition	Intent	Standard
Queue Jump Lane	A bus only lane with a dedicated signal call that advances the bus only lane ahead of the general purpose lanes at a signalized intersection.	Improve speed and reliability. Emphasis on reliability in highly congested corridors. 5-25 percent reduction in travel times at a signal.	Recommended
Business Access and Transit (BAT) Lanes	A through lane exclusively for use by buses and general purpose right turn movements.	Improve speed and reliability. Emphasis on reliability in highly congested corridors. 5-25% reduction in corridor travel times.	Recommended

Table 24. Design guidance for both high and medium demand corridors

Treatment	Definition	Intent	Standard
Transit Signal Priority (TSP)	Signal communication device used to trigger a bus only signal phase to speed bus movement.	Typically used for reliability, may also be used for speed. Up to 10 percent time savings at signals.	Recommended – High Optional – Medium
Bus-Supportive Roadway Surface	Roadway-wide or spot (bus stop or general purpose lane with bus traffic) pavement thicker and stronger than typical pavement.	Improves pavement life cycle. Also maintains bus service reliability and passenger comfort.	Required as pavement rehabilitation occurs – High Recommended – Medium
Bus Bulbs	Bus stop extended to be adjacent to travel lane where on-street parking or other roadway configuration would locate bus stop away from general purpose and require bus to pull out of general purpose lane to serve bus stop.	Removes the need for the bus to merge back into traffic and adds queuing space for riders at busy transit stops. Speed improvement of eight seconds per stop has been demonstrated locally. ²	Recommended – High Optional – Medium
Level Boarding Platforms	Boarding platform raised to height of bus floor.	Remove the need to hydraulically lift mobility- impaired passengers onto the vehicle. Only applicable for low floor buses with no stairs. Notable reliability benefit.	Optional – High Optional – Medium
Bus stop spacing	The distance between bus stops.	Balance access needs with improved speed by removing underutilized stops that do not meet spacing criteria. Stop consolidation to standard distance can improve route speed by 2-20 percent.	Approximately every 1,000 feet (both High and Medium).
Off-board fare payment	Fare payment device located at the bus stop.	Significant reduction in dwell times at high-volume stops. Speed improvement of one second per boarding passenger.	Recommended – High Optional – Medium

Pedestrian Priority Zones

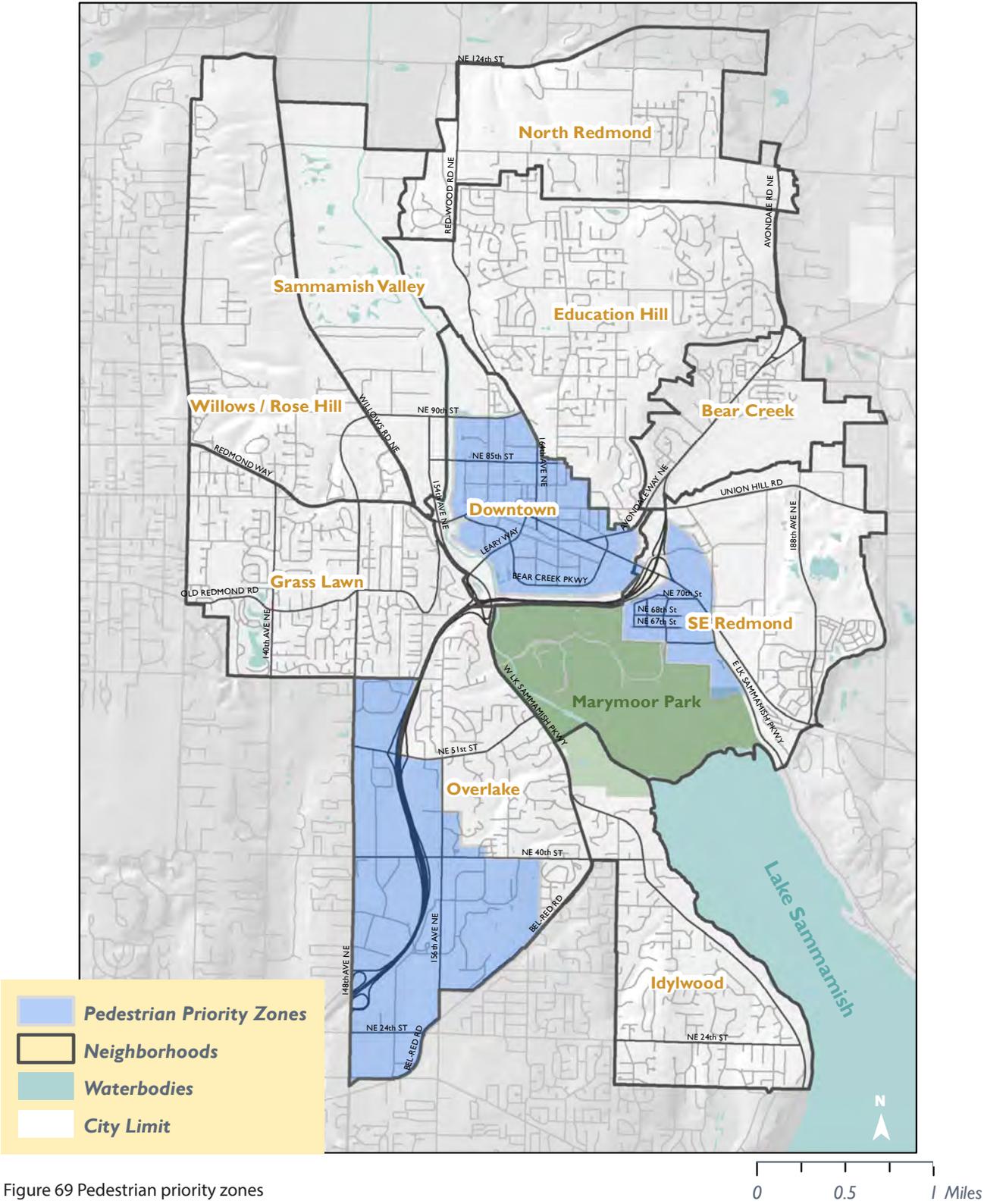


Figure 69 Pedestrian priority zones

Bicycle Design Guidance

An extensive toolbox of bicycle facilities will ensure that high comfort facilities along streets and continuing up to and through intersections are installed on key bicycle routes where feasible. A wide variety of other bicycle facilities should be available where street cross-sections are too constrained to allow high comfort bicycle facilities. This broad toolbox provides an important step forward by focusing not only on bicycle facilities that continue along corridors, but also enabling bicycle guidance and positioning for bicycles to proceed up to and even through street intersections. This is a challenge today. Bicycle lanes often end before an intersection once space in the street cross-section is too constrained, leaving many bicyclists uncomfortable and unsure how to proceed.

Design guidance for bicycle facilities is broken into four tables (25, 26, 27, and 28.) For corridors, the Modal Map and the Bicycle System Map (below) determine the facility type. Tables 25, 26 and 27 provide recommended design guidance. Table 28 provides design guidance for signal control and markings for bicycle travel. While corridor improvements are required, improvements at intersections are recommended. The Modal Map assigns a higher priority for bicycle intersection improvements that are on modal corridors, but these treatments should be applied anywhere warranted on the bicycle system.

These design standards will be reviewed under Action Plan item 13: Bicycle Facilities Design Manual Update.

Table 25. Tier 1 high comfort bicycle facilities

Facility	Definition	Intent	Design Guidance
Paved, Shared-Use Path	A two-way operation bike and pedestrian facility physically separated from motorized vehicular traffic. Typically significantly setback or entirely independent from roadways.	Physical separation from automobiles provides high comfort for bicyclists.	<p>Width: 14 feet recommended 10-foot minimum.</p> <p>Lighting: recommended to ensure facilities are safe and usable year round, particularly when it is dark during commuting times.</p> <p>Connections: Adjacent properties shall connect to adjacent paved, shared-use paths (exceptions may be granted because of topography or environmental conditions)</p> <p>Modal Conflicts: Segments with high numbers of modal conflicts require additional improvements. Solutions include widening or creating two parallel paved, shared-use paths, grade separating roads and paved, shared-use paths, and adding a centerline stripe.</p>
Cycle Track	An exclusive bicycle facility that combines the user experience of a separated path with the on-street infrastructure of a conventional bike lane. Cycle tracks are found within or adjacent to a roadway but separated from motor vehicle traffic by a physical barrier, such as a curb or vehicle parking lane.	Physical separation from automobiles provides high comfort for bicyclists.	<p>One-way operation (recommended):</p> <p>Width: Recommended 6-8 feet, 5-foot minimum</p> <p>Intersections: Raised and protected cycle tracks transition to be adjacent to general purpose lanes at intersections.</p> <p>Two-way operation (not recommended):</p> <p>Width: Recommended 12-14 feet, 10-foot minimum</p> <p>Intersections: Significant intersection treatments, including bicycle signals and green bicycle lanes, strongly recommended</p>

Table 25. Tier 1 high comfort bicycle facilities (continued)

Greenways/ Bicycle Boulevards	Streets with low motorized traffic volumes and speeds designated and designed to give priority to bicycles. Bicycles share streets with vehicles.	Utilize low-volume streets more effectively by engineering streets to be high comfort for bicycles. Automobiles and bicycles mix, with high comfort for bicycles due to low automobile speed and volume.	Vehicle volumes: recommended 1,000 ADT or less, maximum 3,000 ADT.
Buffered Bicycle Lanes	Bicycle lanes paired with a designated buffer space separating the bicycle lane from the adjacent motor vehicle travel lane and/or parking lane.	Greater separation from automobiles provides higher comfort for bicyclists than bicycle lanes with no buffer.	Buffer width: minimum 2 feet Width: see “Bicycle lanes” in Table 25.

Table 26. Tier 2 standard bicycle facilities

Facility	Definition	Intent	Design Guidance
Bicycle Lanes	A roadway lane designated exclusively for bicycle use.	Provide space in street cross-section dedicated for bicycle travel.	Width (includes maximum 1-foot gutter pan and bicycle-friendly storm drains): 6 feet recommended, 5.5 feet standard, 5-foot minimum on streets with over 30 MPH speed limit or streets with on-street parking (with minimum 7.5 feet on-street parking width), 4-foot minimum when adjacent to curb and speed limit 30 MPH or lower
Bike Runnel	A trough-shaped device integrated into staircase design that enables bicycles to be rolled up or down a staircase.	Enable bicycles to utilize staircases rather than staircases being a barrier.	Locations: required at all public staircases Design: Adequate space and correct height to ensure that bicycle pedals and handlebars move freely. Additionally, the top of a staircase typically includes signage advising bicyclists of the staircase ahead.

Table 27. Tier 3 bicycle facilities

Facility	Definition	Intent	Design Guidance
Shared Lane Markings (“Sharrows”)	A pavement marking that delineates where bicycles should be positioned.	Delineate where bicyclists should be positioned and link bicycle facilities together. This calls attention to automobiles that bicyclists are expected on this street more so than other shared streets.	Location: Place along the right side of the lane when bicyclist should be positioned on right side of lane. Place in center of lane when lane width is less than 14 feet and lane should be shared by vehicles and bicycles; maximum speed limit 30 MPH.

Table 28. Intersection bicycle facilities

Facility	Definition	Intent	Design Guidance
Green Bicycle Lanes	Bicycle lane or cycle track colored green, denoting conflict areas on bicycle facilities, such as at intersections and locations where vehicles or bicycles must merge across a lane.	Increase bicycle and automobile knowledge of conflict areas, promoting orderly merging of automobiles and bicycles.	Continue to or through intersection.
Bicycle Boxes	An area designated for bicyclists at the approach to intersections. Typically colored green. Box includes bicycle facility and rightmost general purpose lane.	Reduce threat of right hook collisions and proceed to front of intersection queue.	Continue to an intersection.
Intersection Crossing Markings	Pavement markings such as dashed lines the width of a bicycle lane or shared lane markings that position bicycles through an intersection.	Increase bicycle comfort by positioning bicycles and providing guidance on how to proceed through intersection. Bicycle facilities continue rather than end before intersections.	Continue through intersection.

Pedestrian Design Guidance

Walking is an attractive travel choice when the public pedestrian network encourages easy, short walking trips to destinations (whether to a restaurant in an urban center, a bus stop, or a neighbor’s house); and when the pedestrian environment is comfortable and visually appealing. Table 29. Network Connectivity, ensures a pedestrian system that provides the shortest possible walking trip to destinations, not just a denser, finer-grained pedestrian network. This is a key element of achieving the neighborhood connections strategy. Design guidance (not already incorporated into the Zoning Code) that ensures a comfortable, aesthetically pleasing pedestrian environment is included in Table 30. Sidewalk Design Guidance, and Table 31. Pedestrian Crossing Design Guidance. The focus is on ensuring a comfortable width of sidewalk space (minimum through walkway) and on providing crosswalks where pedestrian activity is anticipated, such as urban centers, transit stops, schools, and community parks.

The Pedestrian System Map shows areas of the city where the highest level of pedestrian activity is anticipated compared to areas where lower pedestrian activity levels are anticipated. Design standards in the pedestrian design guidance tables reflect these differences, enhancing the environment in urban areas (urban centers and light rail station areas) and also enhancing neighborhood character.

Table 29. Network Connectivity

Network Linkage Recommended	Intent and Illustration	Guidance
<p>Build any connection specifically identified in the Comprehensive Plan, Transportation Master Plan, or Parks, Arts, Recreation, Culture, and Conservation (PARCC) Plan.</p>	<p>Build specific network connections that have been identified through planning.</p> 	
<p>Connections to any public right-of-way or publicly accessible way will be built, connecting to all adjacent facilities at least once, and connecting a minimum of once per every 500 feet for a perpendicular facility.</p>	<p>Complete a dense, well-connected network.</p> 	
<p>Cul-de-sacs connect to any segment of the public pedestrian system and to other cul-de-sacs within 528 feet. Exception: connections are not required to existing cul-de-sacs built prior to 2013 when there is not already an established pedestrian connection.</p>	<p>Complete a dense, well-connected network. Disconnected cul-de-sacs are the most significant cause of low connectivity.</p> 	
<p>Main building entrance shall have a direct connection to the publicly accessible pedestrian system.</p>	<p>Provide direct, safe pedestrian connections from the pedestrian system to buildings.</p> 	<p>Build minimum 5-foot-wide concrete (or width and material specified in the Comprehensive Plan, PARCC Plan, or elsewhere in TMP) pedestrian connection.</p>

Table 30. Sidewalk design guidance

Facility	Definition	Intent	Urban Centers	Pedestrian Priority Zones (Outside Urban Centers)	Neighborhoods
Minimum Through Walkway	Area of sidewalk clear of any physical objects.	Ensure pedestrian facility accommodates pedestrian comfort and volume and is retained for pedestrian transportation.	8-foot standard 6-foot minimum	6-foot minimum	5-foot minimum
Through Walkway Buffer	Distance from either side of clear zone of physical encroachment by walls, fences, above-grade utilities, and signs.	Ensure that clear zone continues in a linear fashion and obstructions do not reduce capacity and decrease comfort.	1 foot	1 foot	1 foot
Through Walkway Taper	Linear geometric through walkway.	Ensure effective through walkway by retaining through walkway along pedestrian path of travel. Lack of through walkway taper can be a notable issue in urban centers.	1.5:1 taper	1.5:1 taper	1:1 taper
Sidewalk Width: Principal, Minor, or Collector Arterial	Street space designated for pedestrians. Material is hard surface, typically concrete.	Pedestrian volume and comfort needs are met based on land use context.	See Redmond Zoning Code 21.10.150 and 21.12.150 – dated 2012.	8-foot minimum, both sides of street.	6-foot minimum both sides of street. Recommended: Additional width of pedestrian realm (combined width of sidewalk and furnishing zone) near schools and community parks.

Table 30. Sidewalk design guidance (continued)

Facility	Definition	Intent	Urban Centers	Pedestrian Priority Zones (Outside Urban Centers)	Neighborhoods
Sidewalk Width: Connector Arterial	Street space designated for pedestrians. Material is hard surface, typically concrete.	Pedestrian volume and comfort needs are met based on land use context.	See Redmond Zoning Code 21.10.150 and 21.12.150 – dated 2012.	8-foot minimum both sides of street.	On both sides of street. Option 1: Attached to back of curb – 6-foot minimum. Option 2: Separated from curb by landscaping strip – 5-foot minimum. Recommended: Additional width of pedestrian realm (combined width of sidewalk and furnishing zone) near schools and community parks.
Furnishing Zone: Principal, Minor, or Collector Arterial	Space physically buffering the sidewalk from the street. Typically hardscape with trees in urban areas and typically a planting strip in neighborhoods.	Provide physical separation from vehicle and an attractive environment. Additionally this improves sight distance.	See Redmond Zoning Code 21.10.150 and 21.12.150 – dated 2012	5-foot minimum both sides of street.	5-foot minimum both sides of street.
Furnishing Zone: Connector Arterial	Space physically buffering the sidewalk from the street. Typically hardscape with trees in urban areas and typically a planting strip in neighborhoods.	Provide physical separation from vehicle and an attractive environment.	See Redmond Zoning Code 21.10.150 and 21.12.150 – dated 2012.	5-foot minimum both sides of street.	On both sides of street Option 1: Sidewalk attached to back of curb. Option 2: Sidewalk separated from curb by minimum 5-foot Furnishing Zone.
Pedestrian Amenities	Street furniture such as benches, newspaper stands, art, community boards, etc., and sidewalk cafes.	Support an engaging, vibrant area to walk and help create desired community character.	Recommended.	Recommended near retail.	Recommended near neighborhood commercial.
Pedestrian Scale Lighting	Street lighting oriented to pedestrian needs.	Lighting is necessary for a safe environment and can add to an attractive pedestrian environment.	Required.	Recommended.	Optional.

Table 31. Pedestrian crossing design guidance

Crossing Facility	Definitions	Intent	Urban Centers	Outside Urban Centers
Maximum distance between marked crossings	Distance between crosswalks with pavement markings.	Frequent pedestrian crossings of roadways are critical to pedestrian travel time and safety because of significant out of direction travel.	Maximum every 528 feet. Recommended every 250 feet to 330 feet.	Maximum every 1,320 feet. Recommended within 330 feet of pedestrian generators, including schools, community parks, and transit stop.
Signalized crosswalks at signalized intersections	A crosswalk with pavement markings located at a traffic signal.	Crosswalks at each leg of an intersection facilitate pedestrian movements, which is particularly important in areas with high volumes of pedestrians such as urban centers. When legs of an intersection are unmarked, a pedestrian is then forced to wait an extra cycle length, adding significant delay and pressure for the pedestrian to jaywalk.	Ladder style crosswalk strongly recommended at all legs of intersections.	Strongly recommended at all legs of intersection.
Curb Extensions	Extending the curb out to be adjacent to the general purpose lane. For example, moving the curb out from on-street parking to the general purpose lane.	Shorten crossing for pedestrian and increase visibility of pedestrian to improve safety and comfort.	Install in conjunction with on-street parking or as applicable for safety.	Consider installing in conjunction with on-street parking or as applicable for safety.
Slip Lane	A turn lane providing an unsignalized “free” right turn at a signalized intersection.	Facility reduces driver attentiveness to pedestrians and is uncomfortable for pedestrians. Stop building new slip lanes and retrofit existing slip lanes.	Retrofit existing slip lanes to add a compound curve (mountable by freight). Recommend no longer installing slip lanes.	Retrofit existing slip lanes to add a compound curve (mountable by freight). Recommend no longer installing slip lanes.

Appendix G: Transportation Facilities Plan (TFP) Programs

To ensure that the TFP program activities and performance are aligned with the TMP strategies, a program template has been developed to illustrate how each program supports the TMP strategies and community priorities and how each program operates based performance measures. All 15 TFP programs are described as below in the alphabetical order.

Bicycle Program

How Does This Program Support Strategies Needed to Achieve the Transportation Vision (Purpose)?

The Bicycle Program creates and implements plans, policies, and projects to make a successful bicycle system. This program will continue to build out the bicycle transportation network, including the installation of innovative facilities (based on national standards) that provide a safe and comfortable bicycling experience for users of all ages and ability. Education and encouragement (identified by the League of American Bicyclists as an improvement opportunity for Redmond) is also an important Bicycle Program activity. In order to build as much bicycle infrastructure as possible, this program will continue to leverage significant grant funding.

The Bicycle Program encourages bicycling as a safe, efficient, and attractive transportation mode in order to provide more mobility choices, increase access to our neighborhoods, and support our urban centers. Redmond is proud to call itself the *Bicycle Capital of the Northwest*.

What Transportation Master Plan Strategies Are Most Supported and How?

TMP strategies most directly supported by this program	How strategies are supported
Prepare for Light Rail	Bicycle facilities are important for providing access to light rail stations at medium length trips where local transit service is either nonexistent or does not particular meet user needs. Vehicle access will be limited due to cost and bulk, so transit, bicycle, and pedestrian choices are important to meet light rail demand.
Strong Support for Urban Centers	Bicycling is particularly effective at accommodating medium length trips within and to the urban centers. The bicycle network—which is nearly complete—provides a high level of connectivity that enables bicycling to be a significant travel choice within and to urban centers. Bikes are a natural component of the transportation system given Redmond’s bicycling culture and facilities.
Neighborhood Access	Bicycle improvements support a complete, connected system that provides access to urban centers, neighborhood businesses, parks, schools, transit, and neighbors. Bicycle access is particularly important for youth, the elderly, and anyone else who may not drive.
Travel Choices and Mobility	To significantly increase mode split away from vehicles, all transportation choices need to be provided. The full suite of transit, bicycling, and walking enables short to long trips to be taken 24 hours a day by people of all ages without a vehicle. Increased transit, bicycle, and pedestrian facility not only provide transportation choices, but also adjust mode split, thereby improving mobility.

How Does This Program Support Community Priorities?

Community Priorities	Comments
Infrastructure and Growth	Bicycles support short to medium length trips citywide and are increasingly time competitive with the automobile. Bicycling strengthens the transportation system by giving travelers an alternative to waiting in traffic.
Clean and Green	Bicycling improves health and emits no pollution, which is particularly important since the transportation sector is the main source of air pollution in the central Puget Sound region.
Community	Bicycle facilities provide more opportunity for people of all ages to visit neighbors, community facilities, and community meetings.
Safety	This program improves safety and comfort for bicyclists. A particular focus will be on providing safe, comfortable facilities for users of all ages and abilities, since the current bicycle lane system does not meet the comfort needs of the majority of the population.
Economic Diversity	A bicycle trip is inexpensive, leaving money in users' pockets. The savings can be substantial, since transportation is the second largest household cost. Bicycle activity supports local business through increased local shopping and foot traffic. Development costs are reduced because fewer vehicle parking stalls are necessary.

How Do We Know This Program Is Working?

Bicycle ridership at City of Redmond screenline locations. (Outcome)

Status as a Bicycle-Friendly Community as reported by the League of American Bicyclists. (Outcome)

Percentage of Bicycle Priority Corridors completed. (Output)

Citywide total lane miles of on-street and off-street bike routes. (Output)

How Are Projects Prioritized Within This Program?

Projects are prioritized using numerous factors, including safety, access improvements for the disabled, proximity to pedestrian generators (urban centers, neighborhood centers, transit, schools, parks, senior facilities), light rail access, connectivity, whether the project fills a gap, whether existing facilities meet standards, maintenance conditions, feasibility, public support, and grant competitiveness.

Staff Recommended Revenue and Spending Plan for This Program in 2013 and 2014¹

2013 and 2014 Revenues

Transportation Capital Improvement Program (CIP) + 2012 carryover for project design	\$900,000
Carry-forward	\$362,965
Total	\$1,262,965

Program expenditures:

Design – 2013	\$100,000
NE 51st Street bicycle facility improvements	
High Ranking. Staff will meet with Mayor in early 2013 to determine final list based on analysis of high ranking projects.	\$1,072,965
Central Connector Phase 2 matching funds	
Bicycle wayfinding citywide	
Bicycle channelization	
Bicycle Facilities Design Manual update	
Education and encouragement	
Program management	\$90,000
Total	\$1,262,965

Bridge Program

How Does This Program Support Strategies Needed to Achieve the Transportation Vision (Purpose)?

The purpose of the Bridge Program is to maintain the structural integrity and safety of all 18 of the City’s bridges. Additionally, the program must comply with state and federal requirements. Construction, inspection, and maintenance records are maintained in a filing system in accordance with state guidelines. These records are also included in a State of Washington database. Bridge inspections are performed every two years for most bridges, and yearly for bridges with scouring potential. Bridge work orders are generated from inspections and prioritized; all work is then scheduled and completed.

What Transportation Strategies Are Supported?

TMP strategies most directly supported by this program	How strategies are supported
Strong Support for Urban Centers	Bridges are part of the street network in Downtown and Overlake, and support land use in those centers.
Choices and Mobility	Provides mobility for cars, transit, pedestrians, and bikes.
Freight Mobility	Allows truck movements across rivers and creeks.

How Does This Align with Community Priorities?

Community Priorities	Comments
Infrastructure and Growth	Maintains bridges in a good and useable condition.
Safe City	Maintains bridges in a safe condition.
Responsible Government	Protects the City’s investment.

How Do We Know This Program Is Working?

All bridge deficiencies are repaired or corrected in the order dictated by state and federal requirements.

What Criteria Should Be Used To Prioritize Projects Within a Program?

The Washington State Bridge Inspection Manual and the National Bridge Inspection Standards are used to prioritize repair and replacement projects.

Staff Recommended Revenue and Spending Plan for Program

2013 and 2014 revenues:

Transportation Capital Improvement Program (CIP)	\$150,000
2013: \$75,000	
2014: \$75,000	
Grant	\$2,038,000
Total	\$2,188,000

Project or activity list for this program

2013: Annual/biannual inspection of all bridges. Design seismic retrofit the 148th Ave NE Bridge, which has received 100% grant funding. Prioritize remaining repairs.	\$500,000
2014: Annual/biannual inspection of all bridges. Construction of 148th Avenue NE Bridge seismic retrofit. Continue with cleaning and repairs. Repair/replace bridge on NE 95th Street.	\$1,688,000
Total	\$2,188,000

Channelization Program

How Does This Program Support Strategies Needed to Achieve the Transportation Vision (Purpose)?

The purpose of the Channelization Program is to 1) install new pavement markings where they are missing and where they are most needed to provide an acceptable level of guidance for pedestrians, bicyclists, and motorists and 2) to repair crosswalks and stop bars. New markings provided by this program include lane lines, edge lines, crosswalks, stop bars, legends, and raised/reflective markers and other channelization needed to safely direct traffic on public roadways. Roadway channelization is provided to achieve adequate guidance in accordance with national standards as defined by the Manual on Uniform Traffic Control Devices (MUTCD). This program supports the effective use of Redmond's transportation infrastructure and the safety of the traveling public.

This shared fund account is also used by the Maintenance and Operations Center (MOC) to maintain the visibility of existing crosswalks and stop bars by refreshing these markings on an annual basis. This program does not currently fund MOC maintenance of other pavement legends, like bike symbols or turn arrows.

What Transportation Master Plan Strategies Are Most Supported and How?

TMP strategies most directly supported by this program	How strategies are supported
Strong Support for Urban Centers	Urban centers have high levels of transportation demand from all modes, including automobiles, bicycles, and pedestrians. This requires significant care to provide roadway guidance.
Neighborhood Access	Markings help provide safe and orderly travel on the streets that connect neighborhoods.
Travel Choices and Mobility	Roadway markings are essential to providing safe facilities for bicycle and pedestrian mobility.

How Does This Program Support Community Priorities?

Community Priorities	Comments
Infrastructure and Growth	Pavement markings are a required component of public roadway infrastructure. The program expands with the growth of the roadway system.
Responsible Government	The government is obliged to provide clear, positive guidance to the multiple modes of transportation using public roadways in accordance with the MUTCD.
Safe City	Channelization markings provide clear guidance to improve safety for pedestrians, bicyclists, and motorists by reducing the likelihood of accidents.

How Do We Know This Program Is Working?

The program measures success by the number of traffic accidents and user complaints attributable to pavement marking inadequacy. High accident locations are identified and evaluated yearly, and improvements to channelization markings are identified and implemented.

How Are Projects Prioritized Within This Program?

Requests from the community are evaluated and installed based on federal standards for channelization to provide clear and consistent guidance for all roadway users. Prioritization criteria include accident risk, potential severity of the collision, level of exposure for users, and mode encouragement.

Staff Recommended Revenue and Spending Plan for This Program in 2013 and 2014

2013 and 2014 Revenues

Transportation Capital Improvement Program (CIP)	\$150,000
2013: \$75,000 2014: \$75,000	
Total	\$150,000

Funds are shared by Traffic Operations Safety and Engineering and the MOC to install new channelization and to maintain existing crosswalks and stop bars. A portion of the funds are used for new channelization improvements suggested by staff and the community.

Project or Activity List for This Program

2013 & 2014:	\$150,000
1) Replace pavement markings (\$50,000)	
2) Install new markings where needed (\$100,000)	
Total	\$150,000

Requests for channelization improvements are received and evaluated on an ongoing basis. Each year the Channelization Program installs new channelization at locations identified by staff and citizens. Individually, these requests are typically not large enough to warrant consideration by roadway striping contractors. Therefore, an annual contract grouping of 20 to 25 locations has proven to be the most effective and efficient way to accomplish these safety improvements. Last year \$13,000 was used to fund installation of new pavement markings, and the remainder was used by the MOC for repair of crosswalks and stop bars.

Capital Improvement Management Program

How Does This Program Support Strategies Needed to Achieve the Transportation Vision (Purpose)?

The Capital Improvement Management Program (CIM) advances the delivery of Transportation Facilities Plan (TFP) projects and programs through project development. Project development practices include planning, design, partnerships, and grant acquisition. These project development practices ensure that the delivery of the TFP is on track, which is part of the overall effort to implement the TMP strategies. Also, these project development practices provide opportunities to ensure that each project or program is delivered in accordance with the TMP strategies.

What Transportation Master Plan Strategies Are Most Supported and How?

The CIM Program focuses on advancing the TFP and completing the Three-Year Action Plan, which are part of the effort to implement all five TMP strategies. Therefore, this program supports all five strategies.

How Does This Program Support Community Priorities?

Community Priorities	Comments
Infrastructure and Growth	This program advances the TFP, which provides the transportation infrastructure needed to support anticipated levels of growth in Redmond.

How Do We Know This Program Is Working?

We will track the progress of this program using two performance measures:

- Leveraged Funding: Meet or exceed grant expectations
- Three-Year Action Plan Implementation: Meet or exceed the schedule

How Are Projects/Activities Prioritized Within This Program?

Activities in this program are consistent with or supportive of items in the TMP Three-Year Action Plan.

Staff Recommended Revenue and Spending Plan for This Program in 2013 and 2014

2013 and 2014 Revenues

Transportation Capital Improvement Program (CIP)	
2013: \$127,342 2014: \$133,073	\$260,415
Total	\$260,415

Project or activity list for this program

2013 & 2014	\$260,415
<p>Fund 1.0 Full-Time Employee to conduct the following activities:</p> <ul style="list-style-type: none"> • Conduct transportation grant research, development, applications, and administration. • Provide conceptual and preliminary engineering studies to position projects for grant applications, collaborate with outside agencies, and assist with developer requirements to implement TFP projects and maximize leveraging potential. 	
Total	\$260,415

Engineering Contingency Program

How Does This Program Support Strategies Needed to Achieve the Transportation Vision (Purpose)?

The Engineering Contingency Program funds engineering and construction activities undertaken in response to emergency situations (e.g., a retaining wall failure) that occur during the year and that are not covered by other programs or operating budgets. This program is in place to provide immediate funding for those unexpected needs.

Funds from this program were most recently used to repair a failing rockery structure on NE 80th Street. There were no immediate plans or funds in place to fix the rockery when it began to collapse, so engineering contingency funds were used to make the repairs.

Another example of an Engineering Contingency Program activity is the funding of City staff and a consultant to assist the Washington State Department of Transportation with the SR 520 Corridor Planning Study, which was funded by the legislature due to consistent efforts made by the City of Redmond and other stakeholders along this corridor. To ensure that the City of Redmond’s interests are reflected in this study including its process and that the results of this study improve the SR 520 corridor for Redmond residents and employees, this program contributed funding for staff time and consultant expenses between 2011 and 2012.

What Transportation Master Plan Strategies Are Most Supported and How?

TMP strategies most directly supported by this program	How strategies are supported.
Travel Choices and Mobility	The repairs and situations that this program addresses improve the transportation system and therefore improve choices and mobility for Redmond residents, employees, and visitors.

How Does This Program Support Community Priorities?

Community Priorities	Comments
Infrastructure and Growth	Supports infrastructure and growth by repairing failing structures and addressing other emergency needs.
Safe City	Improves safety through the ability to quickly respond to emergency situations that, left unattended, may result in catastrophic failures.

How Do We Know This Program Is Working?

Success measured by the City’s ability to react in a timely fashion to engineering emergencies or unexpected needs.

How Are Projects Prioritized Within This Program?

Projects are selected and prioritized to address the most pressing immediate needs.

Staff Recommended Revenue and Spending Plan for this Program in 2013 and 2014

2013 and 2014 Revenues

Transportation Capital Improvement Program	\$200,000
2013: \$100,000 2014: \$100,000	
Carry-forward	\$650,000
Total	\$850,000

Project or activity list for this program

Transportation maintenance backlog	\$650,000
Emergency and unexpected situations	\$200,000
Total	\$850,000

Neighborhood Traffic Calming Program

How Does This Program Support Strategies Needed to Achieve The Transportation Vision (Purpose)?

The Neighborhood Traffic Calming (NTC) Program investigates, evaluates, and resolves smaller-scale traffic safety problems (excessive neighborhood speed or volume) and concerns regarding school children and pedestrians. It is a key part of the City’s commitment to the safety and livability of neighborhoods. This program provides direct customer service to residents and businesses through its systematic and proactive solutions. Investigations are the vital first step to determine if City funds need to be spent and how those funds can be spent most efficiently. It uses a “3Es” (education, enforcement, and engineering) approach to coordinate design, development, and implementation of context-sensitive, neighborhood-acceptable solutions within a given Capital Improvement Program (CIP) budget. This program coordinates its activities with police, citizens, businesses, and the school district. For example, the citywide school speed zone radar project was coordinated with the Redmond Police Department.

The national average cost of a single collision in 2005 dollars is \$3,246,192 per fatality, \$68,170 per injury, and \$5,000 per property damage collision. By mitigating against excessive risk, we protect the city, its people, and its property. This program fulfills goals and policies specified in the Redmond Comprehensive Plan, Zoning Code, and Transportation Master Plan.

What Transportation Master Plan Strategies Are Most Supported and How?

TMP strategies most directly supported by this program	How strategies are supported
Strong Support for Urban Centers	Promotes safe and efficient movement of vehicles, bicyclists, and pedestrians, including improvements to crosswalks.
Neighborhood Access	Restores a safer quality of life to neighborhoods and their connections, including designated school walk routes, making travel more attractive and viable.
Travel Choices and Mobility	Traffic-calmed streets support travel choices for all modes.

How Does This Program Support Community Priorities?

Community Priorities	Comments
Infrastructure and Growth	By addressing safety concerns through cost-effective mitigations, the program improves the efficiency of the existing network. It also proactively reviews private developments to prevent future traffic problem areas.
Community Building	Maintains the livability of neighborhoods. Responsive to citizen concerns.
Safe City	Addresses traffic and pedestrian safety issues with education, enforcement, and engineering treatments. Directly contributes to building and maintaining a safe city

How Do We Know This Program Is Working?

- We measure before and after changes in speed and/or cut-through traffic in project areas to confirm a return to safer operation.
- We evaluate customer satisfaction through project area surveys and changes to public demand for service in a given area.

How Are Projects Prioritized Within This Program?

Citizen complaints are evaluated using a combination of traffic studies, site visits, and community input. Locations are then ranked where speed, volume, or pedestrian safety risk exceeds commonly accepted engineering minimums and standard practices. We then prioritize project spending and timing based primarily on highest relative risk and available budget, while taking maximum advantage of the opportunity to coordinate activities with other programs, current and proposed CIP projects, grants, and private development projects.

Staff Recommended Revenue and Spending Plan for This Program in 2013 and 2014

2013 and 2014 Revenues

Transportation Capital Improvement Program	\$300,000
2013: \$150,000 2014: \$150,000	
Carry-forward	\$26,045
Total	\$326,045

Parking Program

How Does This Program Support Strategies Needed to Achieve The Transportation Vision (Purpose)?

The Parking Program develops and implements plans, policies, projects, and management of parking in support of a successful “parking system” that improves access to businesses and services for customers, visitors, residents, students, and employees. This includes ongoing program development throughout the city and the management of on-street and publicly available off-street parking, currently implemented in Downtown. The Parking Program enables “right sizing” of the overall amount of parking needed to support economic vitality and to achieve our land use vision.

Parking is an important part of the overall transportation system. The amount, design, location, and management of parking have a significant impact on ease of access, economic viability, and resulting community character. An oversupply of parking wastes resources, limits the amount of land available for more valuable revenue-generating purposes, can impose a barrier to economic growth and development, and negatively impacts community character. Meanwhile, ineffectively managed parking negatively impacts access to businesses and services, affecting mobility and economic vitality. The Downtown parking study found that overall there is an adequate supply of parking in Downtown, but this supply had not been effectively managed. While less convenient parking stalls remained underutilized and available, high demand spaces near businesses were often occupied by employees and residents, leading to reduced access for visitors and customers. Through targeted implementation of time-limited and all-day parking in specific areas, overall parking availability and efficiency increased, improving access and economic vitality.

What Transportation Master Plan Strategies Are Most Supported and How?

TMP strategies most directly supported by this program	How strategies are supported
Strong Support for Urban Centers	“Right sizing” parking through coordinated parking standards, coupled with proactive management, optimizes the value provided by limited parking inventory. It is critical in order to develop our urban centers in the long term and to provide an interim pathway while our urban centers transition from a suburban to a more urban environment.
Neighborhood Access	Improves neighborhood and regional access to Downtown.
Travel Choices and Mobility	Supports travel choices by reducing the overall amount of parking needed, improving the pedestrian environment. Reduces unnecessary vehicle trips in search of parking, and enables a “park once and walk” strategy, reducing overall vehicle demand and improving mobility.

How Does This Program Support Community Priorities?

Community Priorities	Comments
Infrastructure and Growth	Maximizes value provided by existing and future parking infrastructure, facilitating desired land use development.
Clean and Green	Reduces vehicle trips and reduces overall parking supply needed to support development, decreasing impervious surfaces and increasing water and air quality.
Business Community	Implemented in collaboration with the business community in order to support access for employees, freight and customers, and maximizes the productive use of land.

How Do We Know This Program Is Working?

- For on-street and publicly available parking in high demand areas, this program targets an 85 percent occupancy rate, a rate at which stalls are well used but parking is perceived as available. Areas that are significantly above or below this rate warrant adjustments to program implementation.
- We monitor the level of business and customer satisfaction, with a target of 65 percent satisfied.

How Are Projects Prioritized Within This Program?

- Implements actions that are identified in adopted plans, including neighborhood plans.
- Promotes construction and management of parking infrastructure that supports urban center development.
- Responds to a need identified within the community (customer service).

Staff Recommended Revenue and Spending Plan for This Program in 2013 and 2014

2013 and 2014 Revenues

Business Tax and parking permit revenues	\$249,900
Total	\$249,900

Project or activity list for this program

Management, monitoring and enforcement of on-street parking and the Downtown shared parking facility	\$194,200
Parking program development, management and administration	\$55,700
Total	\$249,900

Pavement Management Program

How Does This Program Support the Strategies Needed to Achieve the Transportation Vision (Purpose)?

The Pavement Management Program preserves and conducts all pavement related activities on our 144 miles of pavement. The program was created in the early 1980s when the City only maintained the residential street network. In 1996 we began maintaining the city’s entire street network. At the core of the program is a database/GIS system that tracks the history of construction and maintenance, as well as surface conditions that are surveyed every other year. Staff select street segments that are most in need of resurfacing or reconstruction and include those in the annual street repair and resurfacing project. The pavement manager for the yearly repair and resurfacing project coordinates with other City departments, private utilities, and developers to assure that all work involving pavement cuts is done prior to resurfacing. Yearly resurfacing and pavement repair projects are then designed and constructed. The program has historically resurfaced approximately three centerline miles per year. The average pavement condition has been maintained in a “Very Good Condition” (PCI score of 70 – 100).

What Transportation Strategies Are Supported?

TMP strategies most directly supported by this program	How strategies are supported
Strong Support for Urban Centers	Well-maintained connections throughout Downtown and Overlake
Neighborhood Access	Reliable access to and from neighborhoods
Choices and Mobility	Well-maintained surfacing for all modes
Freight Mobility	Adequate pavement sections to support trucks

How Does This Align with Community Priorities?

Community Priorities	Comments
Infrastructure and Growth	Infrastructure is maintained in good condition, and new streets are added to the tracking system.
Safe City	Street surfaces are maintained in safe repair for all modes.
Responsible Government	Protects the City’s investment by maintaining the street network in good condition.

How Do We Know This Program Is Working?

A pavement rating survey is completed every two years, and the average score is 77 of 100.

What Criteria Should Be Used To Prioritize Projects Within A Program?

Arterials are given top priority and then condition rating is used. Projects are also coordinated with current and future construction projects.

Staff Recommended Revenue and Spending Plan for Program: 2013 and 2014 Revenues

Transportation Capital Improvement Program (CIP)	\$2,400,000
2013: \$1,200,000 2014: \$1,200,000	
Carry-forward	\$627,590
Total	\$3,027,590

Project or activity list for this program

2013: Finalize plans and advertise projects for six locations: NE 85th Street NE 51st Street NE 21st Street NE 24th Street	\$1,600,000
2014: Design and construct grant-funded project on 156th Avenue NE with matching funds of \$538,000. Rate pavement and create new list of overlay locations. Prepare final plans for new locations.	\$1,427,590
Total	\$3,027,590

Project or activity list for this program

Investigation of new and ongoing requests	~
Design and construction at major sites, working with affected neighbors to ensure context-sensitive neighborhood acceptable solutions; identified spot project and corridor locations for speed/volume control or pedestrian improvements (list subject to change as new sites are evaluated) include: NE 36th Street between 172nd Avenue NE and West Lake Sammamish Parkway; 173rd Avenue NE at NE 24th Street (south city limits); NE 80th Street between 132nd and 140th Avenues NE; NE 111th Street between 167th and 169th Avenues NE; 166th Avenue NE at NE 90th Street..	\$303,000
Minor sites mitigations sign and markings: Citywide.	\$2,045
Speed, pedestrian, and volume studies for investigations and performance measures.	\$8,400
Traffic safety education projects: schools (walk event), businesses (DigiPen Phase 2 and safety road show); general public (three new safety brochures); mailings	\$12,600
Total	\$326,045

Pedestrian Program

How Does This Program Support Strategies Needed to Achieve the Transportation Vision (Purpose)?

The Pedestrian Program creates and implements plans, policies, and projects to make a successful pedestrian system. This program improves the safety and comfort of pedestrians by building new sidewalks and shared-use paths. Funds will continue to leverage grant money to maximize the amount of pedestrian infrastructure built per City of Redmond dollar.

The Pedestrian Program facilitates access to transit and encourages walking as a safe, efficient, and attractive transportation mode, providing more mobility choices, increasing access to our neighborhoods, and supporting our urban centers.

What Transportation Master Plan Strategies Are Most Supported and How?

TMP strategies most directly supported by this program	How strategies are supported
Prepare for Light Rail	Walking is the foundation for successful light rail. Since parking around Redmond’s light rail stations will be limited due to cost and bulk, good walking routes are needed to help people access the line. The pedestrian system helps light rail riders in two ways: first by helping them reach light rail stations directly, and second by providing access to the transit lines that feed those stations.
Strong Support for Urban Centers	<p>Walking is fundamental to achieving the community, economic development, and transportation visions for the Downtown and Overlake urban centers.</p> <p>Redmond’s community and economic development visions call for vibrant, active streets—in other words, streets with high volumes of foot traffic. Active, vibrant spaces are also dependent on the presence of numerous activities in an attractive setting. Pedestrian facilities reduce the need for parking, allowing more space for retail businesses and other activities while lowering development costs.</p> <p>Walking is common in mixed-use urban center environments where it represents a significant portion of all trips, improving the overall efficiency of the transportation system. Walking can easily accommodate most short trips in mixed-use centers. Walking can also be a convenient choice for medium length trips to jobs from mixed-use areas.</p>
Neighborhood Access	<p>Pedestrian improvements support a complete, connected system that provides access to urban centers, neighborhood businesses, parks, schools, transit, and neighbors.</p> <p>Pedestrian access is particularly important for youth, the elderly, and anyone else who may not drive.</p>
Travel Choices and Mobility	Providing travelers with a full suite of options—including walking, bicycling, and transit—makes it easier for everyone to choose alternatives to the single occupancy vehicle. Increased use of these modes also improves the efficiency of the transportation system by taking cars off the road.

How Does This Program Support Community Priorities?

Community Priorities	Comments
Infrastructure and Growth	Pedestrian infrastructure facilitates short trips to and within urban centers, facilitates short to medium length trips to employment sites, and will enable the success of light rail.
Clean and Green	Walking improves health and emits no pollution, which is particularly important since the transportation sector is the main source of air pollution in the central Puget Sound region.
Community	Pedestrian facilities provide more opportunity for people of all ages to visit neighbors, community facilities, and community meetings.
Safety	This program improves safety for pedestrians along corridors, through sidewalk and shared-use path improvements, and at roadway crossings through intersection enhancements.
Economic Diversity	A walking trip costs nothing, leaving money in users' pockets. The savings can be substantial since transportation is the second largest household cost. Pedestrian activity supports local businesses through increased local shopping and foot traffic. Development costs are reduced because fewer vehicle parking stalls are necessary.
Responsible Government	This program supports the community vision for environmentally, economically, and socially sustainable transportation choices.

How Do We Know This Program Is Working?

- Before-and-after pedestrian counts at select locations. (Outcome)
- Percent complete sidewalk: enhanced corridors. (Output)
- Connectivity (Output)

How Are Projects Prioritized Within This Program?

Projects are prioritized by considering these factors: safety, access improvements for the disabled, proximity to pedestrian generators (urban centers, neighborhood centers, transit, schools, parks, senior facilities), light rail access, connectivity, whether the project fills a gap, whether existing facilities meet standards, maintenance condition, feasibility, public support, and grant competitiveness.

Staff Recommended Revenue and Spending Plan for This Program in 2013 and 2014

2013 and 2014 Revenues

Transportation Capital Improvement Program (CIP)	\$2,800,000
2013: \$1,400,000	
2014: \$1,400,000	
Carry-forward	\$1,650,000
Total	\$4,450,000

Program expenditures:

<p>In Design, 2013</p> <p>NE 51st Street sidewalk from 158th Avenue NE to West Lake Sammamish Parkway</p> <p>171st Avenue NE sidewalk on east side at NE 100th Street and curb ramps at end 172nd Avenue NE near Hartman Park</p> <p>NE 85th Street sidewalk from 165th Avenue NE to 120 feet east of 165th Avenue NE</p> <p>NE 88th Street sidewalk from 166th Avenue NE to roughly 120 feet east of 166th Avenue NE</p> <p>NE 95th Street sidewalk from Avondale Road to roughly 400 feet east of Avondale Road</p> <p>Preliminary design of 134th Avenue NE sidewalk from NE 75th Street to NE 80th Street</p> <p>185th Avenue NE Low Impact Development/sidewalk</p>	\$1,850,000
<p>High Ranking:</p> <p>Staff will meet with Mayor in early 2013 to determine final list based on analysis of high-ranking projects.</p> <p>Central Connector Phase 2 matching funds</p> <p>Redmond Way sidewalk between 142nd Avenue NE and 148th Avenue NE</p> <p>156th Avenue NE sidewalk section on east side, south of NE 62nd Court</p> <p>Design of 159th Place NE sidewalk between Leary Way and Bear Creek Parkway</p> <p>Design of NE 88th Street sidewalk from 120 feet east of 166th Avenue NE to 171st Avenue NE</p> <p>ADA improvements</p>	\$2,510,000
Program management	\$90,000
Total	\$4,450,000

Street Light Program

How Does This Program Support Strategies Needed to Achieve the Transportation Vision (Purpose)?

The Street Light Program (SLP) identifies, prioritizes, and installs lighting improvements in areas where users are most exposed, such as at crosswalks, intersections, and along walking routes. While the City requires the installation of proper street lighting as part of private development projects and the City's capital improvement projects, many areas of the city do not meet lighting standards today.

The Street Light Program supports the Neighborhood Access and Travel Choices and Mobility strategies by improving safety for pedestrians, bicyclists, and motorists. The SLP directly supports Neighborhood Access strategy by improving safety along walking routes, especially at unprotected crosswalks that are mostly located in neighborhoods. Inadequate lighting in these areas detracts from the community's sense of security and causes some people to avoid using city streets and sidewalks at night. Improving street lighting promotes the use of travel choices such as walking, bicycling, and transit.

What Transportation Master Plan Strategies Are Most Supported and How?

TMP strategies most directly supported by this program	How strategies are supported
Neighborhood Access	Improves safety along walking routes, especially at unprotected crosswalks, which are mostly located in neighborhoods.
Travel Choices and Mobility	The improvements to lighting increase safety for pedestrians, bicyclists, transit users, and motorists.

How Does This Program Support Community Priorities?

Community Priorities	Comments
Infrastructure and Growth	Street lights have been identified as an infrastructure component of the city's transportation system. The program improves infrastructure and promotes growth by improving safety in critical areas, especially for those users most at risk such as pedestrians and bicyclists.
Clean and Green Environment	The SLP researched the use of Light Emitting Diode (LED) street lights for the city that use less energy and have a much longer life expectancy than traditional bulbs.
Community Building	Promotes walking, bicycling, and transit in neighborhoods and between communities.
Safe City	Street lights improve visibility and safety at night for walkers, joggers, and bicyclists.
Economic Vitality	Creating a sense of security on city streets during the evening hours encourages more people to be outside, visiting others, and patronizing local businesses.

How Do We Know This Program Is Working?

Staff has inventoried unprotected crosswalks that are unlit or underlit. The program's success would be measured by the reduction in the number of unlit or underlit crosswalks.

Dark areas are identified by citizen reports. All of the areas within the city that do not meet standard light levels are too substantial to create a comprehensive list at this time. However, citizen concerns about inadequate street lighting help to generate a priority list.

How Are Projects Prioritized Within This Program?

The criteria used are based on nationally recognized standards, such as the Illuminating Engineering Society (IES) Recommended Practices for Roadway (RP-8). Other factors that influence the prioritization include the volume of pedestrians, bicyclists, and motorists.

Staff Recommended Revenue and Spending Plan for This Program in 2013 and 2014

2013 and 2014 revenues:

Transportation Capital Improvement Program (CIP) 2013: \$50,000 2014: \$50,000	\$100,000
Carry-forward	\$43,024
Total	\$143,024

Project or activity list for this program

Install street lights at remaining uncontrolled crosswalks.	\$36,000
Enhance Sidewalk Program to help fund street light installation where new pedestrian improvements are planned without needed street light improvements.	\$58,000
Respond to citizen requests to improve lighting in identified areas.	\$8,024
Install additional lights at additional uncontrolled crosswalks.	\$41,000
Total	\$143,024

Transportation Demand Management

How Does This Program Support Strategies Needed to Achieve the Transportation Vision (Purpose)?

The Transportation Demand Management (TDM) Program implements coordinated regulation and policies, and provides grants, partnership resources, and incentives to Redmond businesses and community members to manage user demand on a finite transportation system. Managing user demand maximizes mobility, supports economic vitality and growth, and improves travel choices and access for residents, visitors, employees, and freight.

With limited resources and the need to balance mobility, sustainability, and community character, it will not be possible to “build our way” out of congestion. Proactively managing travel demand to maximize the efficiency of current and future mobility infrastructure (roads, transit, bike, and pedestrian facilities) is critical to supporting growth and to achieving our future vision. Overall the TDM program has provided the person-carrying capacity equivalent of four freeway lanes during the peak commute hour, at a much lower cost and community and environmental impact. Successful implementation enables our existing and future infrastructure to be used more efficiently, ensuring that infrastructure supply is not sized to accommodate peak demand. Redmond is then able to attract and retain more employees, air quality is improved, and access is easier for residents, employees, freight, and customers. This results in an overall transportation system that is less expensive, more efficient, and more effective at meeting community needs.

What Transportation Master Plan Strategies Are Most Supported and How?

Prepare for Light Rail	Enhances current and future transit ridership, supporting the early development and transition of light rail station areas.
Strong Support for Urban Centers	Enhances mobility provided by current and future infrastructure, supporting growth and development as our urban centers transition from a suburban to a more urban environment.
Travel Choices and Mobility	Improves mobility and access to travel choices through resources, on-site support and partnerships with business and community leaders.

How Does This Program Support Community Priorities?

Community Priorities	Comments
Infrastructure and Growth	Maximizes person- and freight-carrying capacity provided by current and future infrastructure, leveraging the ability to support mobility and growth.
Clean and Green	Supports a transportation system that is more efficient and sustainable.
Business Community	Supports easier access for employees, freight, and customers; maximizes productive and efficient use of land; proactively provides a transition strategy for infrastructure we currently have and infrastructure we will eventually have to support economic growth.
Responsible Government	Provides high value for each public dollar invested, leverages and coordinates city, county, state and private resources.

How Do We Know This Program Is Working?

- The share of travel by alternatives as measured by the Commute Trip Reduction (CTR) survey for large employers and sites with a Transportation Management Program agreement. This provides an overall indicator of the person-carrying efficiency of the City's mobility infrastructure.
- Direct measurement and tracking of participation in the R-TRIP, Think Redmond, and other innovative TDM programs, such as the Growth and Transportation Efficiency Center demonstration.
- The percentage of employees covered by a TDM program that provides on-site support for alternative travel choices with the goal of increasing coverage over time.

How Are Projects Prioritized Within This Program?

- Elements that meet the following criteria are given the highest priority:
- Have the highest potential to reduce single occupancy vehicle demand.
- Support Comprehensive Plan goals, in particular strategies that support development of Redmond's urban centers.
- Meet a need or gap identified by the community, or through the implementation of Redmond's Economic Development Strategy.
- Coordinate with the business community, leveraging private and City resources; for example, elements that enhance and support employer mobility programs.

Staff Recommended Revenue and Spending Plan for this Program in 2013 and 2014

2013 and 2014 Revenues

Business Tax	\$1,120,000
Carryover grant funding from past Business Tax multiyear grants	
	\$1,085,224
State CTR cost reimbursement (\$97,173 per year)	\$194,346
King County Metro partnership	\$160,000
Total	\$2,559,570

Project or activity list for this program

Local implementation of the Washington State Commute Trip Reduction (CTR) Program, which supports TDM programs at worksites with over 100 employees	\$194,346
Implementation of Transportation Demand Management Program agreements for developments that meet trip generation thresholds, or developments that use a TDM program to achieve concurrency or to meet parking requirements	\$170,000
Redmond Trip Resource and Incentive Program (R-TRIP), which provides resources and incentives directly to Redmond residents and employees, as well as resources and grants for business and community-initiated TDM programs	\$1,795,224
Growth and Transportation Efficiency Center program, which coordinates transportation planning and demand management to support the development of Redmond's urban centers	\$400,000
Total	\$2,559,570

Transit Service Program

How Does This Program Support Strategies Needed to Achieve the Transportation Vision (Purpose)?

The Transit Service Program provides partnership resources to improve important local and regional transit connections to our employment and urban centers. The purpose of the Transit Service Program is to enhance and support transit service as a real travel choice, increase the person-carrying capacity of our transportation system, and support the development of better neighborhood connections to major employment areas and our urban centers. This ongoing program leverages City resources in partnership with King County, neighboring cities, and the business community. In order to ensure that City resources provide a high return for each dollar invested, this program strategically directs transit service to targeted corridors that have little or no service today. Moderate City investments, therefore, significantly increase the usability and availability of transit with service that is connected with the larger regional transit network.

The program supports Transportation Master Plan strategies to prepare for light rail, support access to and from Redmond's urban centers, and increase travel choices and mobility.

What Transportation Master Plan Strategies Are Most Supported and How?

TMP strategies most directly supported by this program	How strategies are supported
Prepare for Light Rail	The program supports connections to future Sound Transit Link light rail station areas, helping build a market for this service.
Strong Support for Urban Centers	Improves local and regional connections to Downtown Redmond and Overlake. Routes currently funded provide service between Overlake, Kirkland, and Kenmore (Metro Route 244); and between Overlake, Bear Creek, Sammamish, and Issaquah (Metro Route 269).
Travel Choices and Mobility	Growing and fostering transit connections increases mobility and helps to promote transit as a real travel choice for those living and working in Redmond.

How Does This Align with Community Priorities?

Community Priorities	Comments
Infrastructure and Growth	Helps to increase mobility, access, and circulation, and increase the person-carrying capacity of our roadway infrastructure. Also helps develop and foster growing transit connections to support growth.
Clean and Green	Improving green transportation choices such as transit helps improve air quality, reduce congestion and energy consumption, and create a more efficient transportation system.
Economic Diversity	The program helps improve access to businesses in Redmond for customers, visitors, and employees.

How Do We Know This Program Is Working?

The success of the program will be determined by measuring ridership on routes supported by this program with a goal of increasing the number of those who travel by transit in Redmond.

How Are Projects Prioritized Within This Program?

Projects must meet regional, local and first mile/last mile needs. In addition, projects that meet one of more of the following criteria are given the highest priority:

- Support access to and from urban centers and other major employment areas.
- Meet a need identified by the local business and/or residential community.
- Leverage partnerships to share costs and ensure success.
- Coordinate with regional transit agency strategic plans and guidelines.

Staff Recommended Revenue and Spending Plan for This Program in 2013 and 2014

2013 and 2014 Revenues:

Business Tax – New Initiatives	\$400,000
Total	\$400,000

Project or activity list for this program:

Partnership funding for enhanced service: Metro Route 244, Overlake-Kirkland-Kenmore, weekdays—five peak hour trips each direction (approximately \$65,000 annually). Metro Route 269, Overlake-Bear Creek-Sammamish-Issaquah, weekdays—15 to 16 peak hour trips each direction (approximately \$110,000 annually)	\$350,000
Transit Program planning and administration	\$50,000
Total	\$400,000

Transportation Concurrency Program

How Does This Program Support Strategies Needed to Achieve the Transportation Vision (Purpose)?

The Transportation Concurrency Program provides analysis tools and performance measure data to assist implementation of the TMP. The purpose of these analysis tools and performance measures is twofold: 1) to ensure that project and program delivery is aligned with the TMP strategies, and 2) to track TMP implementation to ensure that it achieves the transportation vision while meeting state requirements to provide sufficient capacity to accommodate growth.

What Transportation Master Plan Strategies Are Most Supported and How?

This program supports all of the TMP strategies by providing dashboard and other relevant performance measures.

How Does This Program Support Community Priorities?

Community Priorities	Comments
Infrastructure and Growth	The data, measures, and analysis work provided by the Transportation Concurrency Program are essential to tracking how well the transportation system supports the City's land use vision and growth targets. The data also helps decision makers prioritize project and program expenditures, and to develop and maintain transportation infrastructure and services.

How Do We Know This Program Is Working?

- Concurrency is continuously monitored.
- Analysis tools are updated.
- System performance measures are current.

How Are Projects/Activities Prioritized Within This Program?

The Transportation Concurrency Program is a set of on-going activities established by the Transportation Master Plan, so there is not a prioritization process.

Staff Recommended Revenue and Spending Plan for This Program in 2013 and 2014

2013 and 2014 Revenues

Transportation Capital Improvement Program (CIP)	\$200,000
2013: \$100,000	
2014: \$100,000	
Total	\$200,000

Project or activity list for this program

Concurrency: Monitor and update plan-based concurrency to ensure that Redmond is meeting its established transportation level of service.	\$60,000
BKR Model update: The Bellevue-Kirkland-Redmond travel model is a computerized simulation of travel activity maintained by the City of Bellevue and made available to the City of Redmond for an annual fee. The BKR model provides information for the City of Redmond plan-based concurrency system, and provides on-going feedback to the City on traffic conditions and patterns.	\$50,000
Traffic counting: The City counts traffic at key locations throughout Redmond to calibrate the BKR model and generate a record of actual travel trends.	\$60,000
Cost estimation: Update the project cost estimation tool.	\$30,000
Total	\$200,000

Targeted Safety Improvement Program

How Does This Program Support Strategies Needed to Achieve the Transportation Vision (Purpose)?

The primary purpose of the Targeted Safety Improvement Program (TSIP) is to identify existing and potential traffic safety problem areas and implement projects to prevent incidents, injuries, deaths, and their related losses. This is achieved through proactive collision prevention, reactive collision response, and multimodal safety consistent with the Transportation Master Plan. TSIP is a systematic approach to funding the highest priority multimodal safety needs. The annual construction of improvements ensures

that the highest priority safety needs are regularly met for all travel modes. This provides improved overall safety to the community.

What Transportation Master Plan Strategies Are Most Supported and How?

TMP strategies most directly supported by this program	How strategies are supported
Strong Support for Urban Centers	Promotes safe and efficient movement of vehicles, bicyclists, and pedestrians, including crosswalk improvements.
Neighborhood Access	Restores a safer quality of life to neighborhoods and their connections, including designated school walk routes, making travel more attractive and viable.
Travel Choices and Mobility	Street improvements including bike lanes and sidewalks support travel choices for all modes.

How Does This Program Support Community Priorities?

Community Priorities	Comments
Infrastructure and Growth	By addressing safety concerns through cost effective mitigations, the program improves the efficiency of the existing network.
Community Building	Maintains the livability of neighborhoods. Responsive to citizen concerns.
Safe City	Addresses traffic and pedestrian safety issues with education, enforcement, and engineering treatments. Directly contributes to building and maintaining a safe city.

How Do We Know This Program Is Working?

The Targeted Safety Improvement Program has built six projects over the past four years leveraging \$3.5 million. Evaluating projects is essential to understanding how successful and cost-effective these efforts are in reducing and preventing traffic collisions. Delivery of projects through this program is reflected both in the TMP annual performance monitoring report (“Mobility Report Card”), as well as in CIP monitoring. Measurement methods will depend upon the original conditions, mitigation goal, and type of mitigation undertaken. Collision rates can be compared at sites where data is available. At proactive locations more subjective measures may be used including before and after conditions.

How Are Projects Prioritized Within This Program?

Safety improvements are reviewed, cross-referenced with the High Accident Location Report, and ranked. Top-ranked projects are those that have simple solutions and low cost, and will successfully reduce future risk.

Staff Recommended Revenue and Spending Plan for This Program in 2013 and 2014

2013 and 2014 Revenues

Transportation Capital Improvement Program	\$900,000
2013: \$450,000	
2014: \$450,000	
Carry-forward from 2012	\$150,000
Total	\$1,050,000

Project or activity list for this program

2013 Construction of NE 87th Street/148th Avenue NE pedestrian crossing. Construction of NE 40th Street/SR 520 improvements. 166th Avenue NE, NE 85 th Street to NE 100th Street Prepare plans for new list of projects to be approved in December.	\$600,000
2014 Flashing Beacons for Bear Creek Parkway pedestrian crossings at 164th Avenue NE Red-Wood Road from NE 109th Street to NE 116th Street 156th Avenue NE mid-block crossing at NE 45th Street Willows Road and NE 91st Street.	\$450,000
Total	\$1,050,000

Undergrounding of Overhead Utilities Program

How Does This Program Support Strategies Needed to Achieve the Transportation Vision (Purpose)?

The Undergrounding of Overhead Utilities Program provides funding to complete undergrounding of overhead utilities, according to the Redmond Comprehensive Plan, Zoning Code, and Transportation Master Plan, to improve reliability, safety, and aesthetics. The funds from this program are typically added to ongoing sidewalk or road improvement projects to achieve a more complete conversion of aerial utilities to underground in a given area. Funds from this program were most recently used to complete the undergrounding of overhead utilities on NE 79th Street near Anderson Park. Money was added to a sidewalk project to complete the conversion to a logical stopping point. The program dollars are kept in reserve until there is sufficient funding to move forward on a stand-alone project or to contribute funds to a capital improvement project. This program fulfills goals and policies specified in the Redmond Comprehensive Plan, Zoning Code, and Transportation Master Plan.

What Transportation Master Plan Strategies Are Most Supported and How?

TMP strategies most directly supported by this program	How strategies are supported
Strong Support for Urban Centers	Supports the creation of urban areas in Downtown and Overlake by improving aesthetics and providing reliable utility connections.

How Does This Program Support Community Priorities?

Community Priorities	Comments
Infrastructure and Growth	Supports infrastructure and growth by providing improved reliability for power, telephone, and cable TV systems.
Safe City	Improves safety by reducing roadside hazards along city streets, as utility poles are removed when overhead utilities are placed underground

How Do We Know This Program Is Working?

The success of the program is measured by the amount of overhead line placed underground over time.

How Are Projects Prioritized Within This Program?

Projects are selected and prioritized to achieve the highest return per dollar spent.

Staff Recommended Revenue and Spending Plan for this Program in 2013 and 2014

2013 and 2014 Revenues

Transportation Capital Improvement Program (CIP) 2013: \$50,000 2014: \$50,000	\$100,000
Total	\$100,000

a. Project or activity list for this program

Undergrounding of utilities as identified through the prioritization process. Staff are currently looking for opportunities to contribute funds toward public projects to complete missing pieces of overhead-to-underground conversion.	\$100,000
Total	\$100,000

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Appendix H: Extended TFP Project Descriptions

Project ID	Name	Description
5	Overlake Village Bicycle-Pedestrian Bridge	Provide a new pedestrian and bike connection over SR 520 between the Overlake Village light rail station and NE 31st Street west of SR 520. Coordinate with projects # 181 and # 43.
6	Overlake Transit Center Pedestrian and Bike Bridge	Provide a new pedestrian and bike connection over SR 520 between the Overlake Transit Center and west side of SR 520 and 520 Trail (in the vicinity of the NE 38th Street alignment) and the SR 520 Trail, integrating with the future light rail station. Ensure public access between the 520 Trail and the Overlake Transit Center. Coordinate with existing transit stops.
8	520 Trail Grade Separation at NE 40th St	Grade separate 520 Trail at NE 40th Street.
10	520 Trail Grade Separation at NE 51st St	Grade separate 520 Trail at NE 51st Street.
31	148th Ave NE and NE 51st Street Westbound Right-Turn Lane	Add a second right turn lane from westbound NE 51st Street to northbound 148th Avenue NE.
39	148th Ave NE and NE 20th St Turn Lanes	Add second westbound left turn and second eastbound left turn lanes. Associated with projects 41 and 264
41	148th Ave NE and SR 520 Freeway Access Lane	Create third northbound through lane on 148th Ave NE from NE 22nd St to SR 520 eastbound on-ramp using primarily existing right turn lanes and modify SR 520 eastbound on-ramp to allow HOV access. At NE 24th St and 148th Ave NE intersection add right turn lane on northbound approach, and extend right turn lane on westbound approach.
46	150th Ave NE and NE 51st Street Traffic Signal	Add north leg (on private property) to intersection of 150th Avenue NE and NE 51st Street and signalize this intersection. The intent is for improvement on the north leg on campus to include two southbound left turn lanes, one through lane in each direction, bike lanes, sidewalks, transit amenities, street lights, utilities, and stormwater drainage. Relocate eastbound transit stop to far side of new intersection.

Extended TFP Project Descriptions (continued)

Project ID	Name	Description
47	152nd Avenue NE Main Street - Segment 1 (East)	Implement a multimodal pedestrian corridor concept on 152nd Avenue NE from NE 26th Street to NE 31st Street to create a lively and active signature street in the Overlake Village. The cross section for the improvements would include one through lane in each direction, turn lanes as necessary, on-street parking and pedestrian and bicycle facilities as described in the Appendix 7 in the Redmond Zoning Code. Other improvements include intersection improvements at NE 24th , NE 26th, NE 27th, and NE 28th Streets, storm drainage, LID, street lighting, pedestrian amenities, transit amenities, right-of-way, easements, and utilities. Locate arterial transit stop within immediate access of the Overlake Village light rail station. Part 1, project #47, includes half-street improvements by developer of the former Group Health site. Part 2, project # 363, includes half-street improvements for the other half-street by future developers.
50	156th Ave NE & Bel-Red Road Southbound Right-Turn Lane	Add southbound right turn lane on 156th Ave NE.
58	NE 40th St Streetscape Segment II	Resize vehicular lane width to 11 feet, raise the sidewalk on the south side of the bridge and reduce this sidewalk to 9 feet and enhance pedestrian realm by eliminating the traffic barrier between the south sidewalk and vehicular lane, and add 5.5-foot bike lanes in both directions. Improvements include two travel lanes, two turn lanes, one bike lane, and one sidewalk in each direction of the street, and streetscape including gateway wayfinding and art elements.
60	NE 40th St Streetscape Segment III	Add bike lanes on both sides. Improvements include two vehicular lanes in each direction, one turn lane, bike lanes and 8 foot sidewalks with planter strips on both sides, planter strip, streetscape including gateway wayfinding and art elements, stormwater treatments, street lights, utilities, and easement acquisition. Coordinated with 59.
61	NE 40th St Rechannelization Segment IV	Within existing right-of-way and easements, resize vehicular lane width to 10 feet and add a 5 feet bike lane in the westbound direction. Improvements include sidewalks in both directions, a 5 feet bike lane in the westbound direction, one 10 feet vehicular lane in both directions, an 11 feet turn lane, streetscape, stormwater treatments, street lights, and utilities.
71	West Lake Sammamish Parkway Roundabout	Removing exiting traffic signal at Bel- Red Road and West Lake Sammamish intersection. Install 2-lane roundabout at Bel-Red Road, West Lake Sammamish intersection and improve pedestrian facilities and provide treatments for terminus of multi-use path along eastside of roadway. Coordinate with 157
72	140th Avenue NE and Redmond Way Turn Lanes	Add second northbound left turn lane and extend bicycle lanes from NE 80th Street through the intersection of 140th Avenue NE and Redmond Way. Construct sidewalk on 140th Avenue north of the intersection up to NE 84th Street.
73	Union Hill Rd Phase III Widening	Widen Union Hill Rd from 188th Avenue NE to eastern City Limits. Improvements include 2 through lanes in each direction, left turn lanes, bike lanes, curb, gutter, sidewalks, street lights, storm drainage, underground power and utility pole relocation, right-of-way and easement acquisition.

Extended TFP Project Descriptions (continued)

Project ID	Name	Description
76	NE 116th St Widening Segment I Phase I	Complete bicycle facilities as well as the sidewalk on the north side of NE 116th Street between Red-Wood Road and 167th Place NE. Improvements coordinate with project # 356: the construction of a roundabout at NE 116th Street and 162nd Avenue NE. Phase II is Project 370.
78	188th Ave NE Extension	Construct new 188th Ave NE arterial from NE 65th Street to Union Hill Rd. Improvements include 1 through lane in each direction, left turn lanes, bike lanes, curb, gutter, sidewalks, transit amenities, street lights, storm drainage, right-of-way and easement acquisition.
79	185th Ave NE Extension	Construct new 185th Ave NE arterial from NE 80th Street to Union Hill Road. Improvements include one through lane in each direction, left turn lanes, sidewalks, street lights, storm drainage, right-of-way, easements, and traffic signal at Union Hill Road.
81	164th Ave NE Extension	Construct new 164th Ave NE from NE 76th St to Cleveland St. Improvements include 1 through lane in each direction, bike lanes, parking, sidewalks, transit facilities, street lights, storm drainage, right-of-way and easements.
83	SR 202 Rechannelization	Reconfigure 164th Ave NE from NE 80th to NE 87th St to 1 through lane in each direction, center left turn lane, bike lanes, pedestrian amenities, and transit facilities.
84	Redmond Way Bridge Modifications and Additions Over Bear Creek	Rechannelize bridge, replacing the sidewalk on the south side of bridge with a second eastbound left turn lane. Build a ped/bike bridge on the south side of bridge, designed to accommodate a future connection between Bear Creek Trail and East Lake Sammamish Trail. Improvements include two through lanes in each direction on Redmond Way and NE 76th Street, two eastbound left turn lanes to NE 76th Street, one eastbound right turn lane to westbound SR 520 on-ramp, one sidewalk on north side of the bridge, a pedestrian/bike bridge street on the south side of the bridge, lights, storm drainage, utilities, right-of-way, and easements.
89	NE 76th Street & 178th Place NE Intersection Improvements	Widen intersection to allow right turn, left turn, and through lanes in all directions, Improve turning radii for trucks at intersection of NE 76th St / 178th Pl (especially SB to EB, and WB to NB), widen 178th lanes to north of intersection to avoid impacts to well house, add bicycle lanes through intersection in all directions, improve sight distance, stormwater, utilities, and property needs such as easements. Install vehicle detection and traffic cameras.
92	NE 76th Street Extension (Segment 1)	Construct new NE 76th St from 185th Ave NE to 188th Ave NE. Improvements include 1 through lane in each direction, left turn lanes or medians to create a 3 lane section, bike lanes, sidewalks, street lights, traffic control, storm drainage, right-of-way and easements. Consider roundabout at 185th Ave and 76th St.
95	166th Ave NE Rechannelization	Reconfigure 166th Ave NE from NE 85th St to NE 104th St to 1 through lane in each direction, center left turn lane and bike lanes. Collaborate with pavement management for its resurfacing needs. Add pedestrian crossings coordinated with bus stops.

Extended TFP Project Descriptions (continued)

Project ID	Name	Description
99	NE 70th St Extension Phase I	Provide the right-of-way and interim street improvements on the new NE 70th Street from Redmond Way to 180th Avenue NE. Coordinate with phase II, project #360, which is street improvements up to City standards
111	NE 124th St and 162nd Pl NE Signal	Construct a new traffic signal at 124th Avenue NE and 162nd Place NE. Includes the addition of turn lanes on NE 124th and modifications on 162nd Place for sight distance. Must meet signal warrant.
112	NE 73rd Street Extension - Segment 1	Construct new NE 73rd St from 185th Ave NE to 188th Avenue NE. Improvements include 1 through lane in each direction, left turn lanes, bike lanes, sidewalks, street lights, traffic control, storm drainage, right-of-way and easements.
114	NE 80th Street Trail Connection	Construct new NE 80th Street Trail from 185th Avenue NE to 188th Avenue NE. Improvements include 12 foot paved, shared use path situated in a 20 foot wide easement or right-of way.
115	Redmond Way and Cleveland Street Couplet Conversion	<p>Convert Redmond Way from 160th Avenue NE to Avondale Way to one through lane in each direction and center turn lane with west end having two westbound starting at 161st Avenue NE and east end having two eastbound lanes starting at 168th Avenue NE. Convert Cleveland Street to one through lane in each direction. Relocate transit stops to Redmond Way. Improvements include curb extensions, widened sidewalks, shared lane markings, pedestrian amenities, transit amenities, gateway treatments, wayfinding, and realignment of street at eastern and western ends to improve traffic flow. Improve the rightmost lane on westbound Redmond Way to be a Business And Transit access lane.</p> <p>Support the Sound Transit Route 545, and a queue jump between 168th Avenue NE and the Redmond Way Bear Creek Bridge. Provide</p> <p>intersection modifications and ITS improvements in order to convert both streets from one-way to two-operation to improve grid system in</p> <p>downtown.</p>
116	Cleveland Streetscape	Improve Cleveland Street to a pedestrian-friendly Main Street. Improvements include one through lane, parking, and sidewalk in each direction, mid-block crossings, street lights, utilities, stormwater treatments, public art, bicycle racks, pedestrian amenities, street furnishing, trees, traffic and wayfinding signs, and realignment of street at eastern and western ends to improve traffic flow.
155	NE 31st Street Bike Lanes (Design)	Design bike lanes and intersection improvements from the NE 36th St Bridge roundabout to NE 156th Street
157	West Lake Sammamish Parkway Phase III Widening (Part 1)	Acquire any needed right-of-way and extend the multi-use path on the east side of West Lake Sammamish Parkway. Coordinate with projects 71 and 361.
163	SR 202 and NE 124th St Intersection Improvements	Widen NE 124th Street adding additional east/west lanes, modify the traffic signal and connect to the city's traffic management center. In addition, bicycle lanes, sidewalks, and a storm collection and treatment system will be added.

Extended TFP Project Descriptions (continued)

Project ID	Name	Description
175	NE 27th Street and NE 28th Street New Connection	Construct a new east west NE 27th Street between 152nd Avenue NE and 156th Avenue NE with a three-lane public roadway (narrowing to two lanes adjacent to the future park) with parking and bike lanes along both sides of the street, and intersection improvements at 152nd Ave NE and 156th Ave NE. The 156th intersection improvements will include frontage improvements on the west side of 156th from about 300 feet north of the intersection to about 700 feet south of the intersection.
200	Redmond Central Connector Segment II	Complete the second segment of the Redmond Central Connector, including regional trail and aesthetic enhancements.
254	161st Ave NE Extension	Construct new 161st Ave NE from Bear Creek Pkwy Extension to Redmond Way. Improvements include 1 through lane in each direction, left turn lanes, bike lanes, parking, sidewalks, street lights, storm drainage, right-of-way, easements and traffic signals at Cleveland St and Bear Creek Pkwy.
264	148th Ave NE & NE 24th Street Turn Lanes	add left turn lanes to make dual left turn lanes on the eastbound and westbound approaches on NE 24th Street at 148th Avenue
315	SR 520/148th Interchange Overlake Access Ramp and Trail Connection: City of Redmond Local Street Portion	Construct Access Street between the Overlake Access Ramp terminal and 152nd Avenue NE. Improvements on Overlake Access Street and NE 28th Street include one vehicular lane in each direction, parking, sidewalks, and left-turn lanes at the intersection of NE 28th Street and 152nd Avenue NE. Vehicular lanes are 11-foot wide on Overlake Access Street and NE 28th Street. Sidewalks on NE 28th Street are 14-foot wide. Sidewalks on the Overlake Access Street are 12-foot wide. Parking lanes are 7-foot wide. Coordinate with the terminal of Overlake Access Ramp (project #2).
323	Redmond Central Connector Phase I	Complete the first segment of the Redmond Central Connector, including regional trail and aesthetic enhancements. Remove rail. Coordinate with the Downtown Stormwater Trunkline Project.
324	Downtown Shared Parking Facility	Shared parking facility at the intersection of Leary Way and Bear Creek Parkway. Intent is to provide a shared parking resource within the downtown, and facilitate 'right sizing' of private segregated parking in the downtown urban center.
327	Cleveland Street Sidewalk Maintenance	Address significant sidewalk maintenance issue caused by street trees by replacing sidewalk. This is an interim treatment of the couplet conversion.
339	NE 95th Street Bridge Replacement	Replace the NE 95th Street Bridge over Bear Creek. Improvements shall comply with environment requirements.
349	NE 24th Street and Bel-Red Road Southbound Right-Turn Lane	Provide a southbound right-turn lane at the intersection of NE 24th Street and Bel-Red Road.
353	NE 40th Street Sidewalk Rehabilitation	Replace sidewalks along the north side and part of the south side along the NE 40th Street between 164th Court and Bel-Red Road.

Extended TFP Project Descriptions (continued)

Project ID	Name	Description
355	152nd Avenue NE Main Street -Segment 2	Implement a multi-modal pedestrian corridor concept on 152nd Avenue NE from NE 24th Street to NE 26th Street to create a lively and active signature street in the Overlake Village. The cross section for the improvements would include 1 through lane in each direction, turn lanes as necessary, on-street parking and pedestrian and bicycle facilities as described in the Appendix 7 in the Redmond Zoning Code. Other improvements include intersection improvements at NE 24th , NE 26th, NE 27th, and NE 28th Streets, storm drainage, LID, street lighting, pedestrian amenities, transit amenities, right-of-way, easements, and utilities. Locate arterial transit stop within immediate access of the Overlake Village light rail station.
356	NE 116th Street and 172nd Avenue NE Roundabout	Construct a roundabout at NE 116th Street and 172nd Avenue NE. Improvements include sidewalks, bike lanes, vehicular lanes, stormwater, utilities, and street lights.
360	NE 70th Street Extension Phase II	Construct new NE 70th St from Redmond Way to 180th Ave NE. Improvements include 1 through lane in each direction, left turn lanes, sidewalks, street lights, storm drainage, right-of-way and easements. Coordinate with phase I, project 99, right-of-way dedication and interim street improvements.
363	152nd Avenue NE Segment 1 (West)	Implement a multi-modal pedestrian corridor concept on 152nd Avenue NE from NE 26th Street to NE 31st Street to create a lively and active signature street in the Overlake Village. The cross section for the improvements would include 1 through lane in each direction, turn lanes as necessary, on-street parking and pedestrian and bicycle facilities as described in the Appendix 7 in the Redmond Zoning Code. Other improvements include intersection improvements at NE 26th, NE 27th, and NE 28th Streets, storm drainage, LID, street lighting, pedestrian amenities, transit amenities, right-of-way, easements, and utilities. Locate arterial transit stop within immediate access of the Overlake Village light rail station. Part 1, project #47, includes half-street improvements by the developers of the future Group Health site. Part 2, project # 363, includes half-street improvements for the other half-street by future developers.
367	148th Avenue Arterial Pavement Reconstruction Preservation	Reconstruct portions of and provide overlay of 148th Avenue from SR 520 to Redmond Way . Make drainage improvements where needed. Examine roadway channelization for improved efficiencies.

Appendix I: Glossary and Acronyms

BRT	See “Bus Rapid Transit”
Budget by Priorities	An organizational budgeting process in which spending proposals (“offers”) are ranked and funded by the decision-making body based on a previously identified set of priorities or criteria.
Buildout Plan	The City of Redmond’s complete long-term list of planned transportation system improvements.
Bus Rapid Transit	An enhanced bus system that operates on bus lanes or other transitways in order to combine the flexibility of buses with the efficiency of rail.
Capital Improvement Program	A six-year plan for future capital expenditures which identifies each capital project, including anticipated start and completion dates, and allocates existing funds and known revenue sources. The CIP is updated and adopted annually as part of the City budget.
Capital Investment Strategy	A hybrid planning and budgeting document that summarizes known City of Redmond capital investment needs for the following 18 years.
CIP	See “Capital Improvement Program.”
CIS	See “Capital Investment Strategy.”
Commute Trip	A trip made from an employee’s residence to a work site for a regularly scheduled workday.
Commute Trip Reduction	It is a requirement of the Washington State Clean Air Act that major employers develop and implement programs that will reduce the number of times their employees drive alone to work. The goals of commute trip vehicle miles traveled per employee and proportion of single occupant automobiles were a 15 percent reduction by January 1, 1995, a 25 percent reduction by January 1, 1997, and a 35 percent reduction by January 1, 1999.
Complete Streets	Streets which are designed and operated to enable safe, attractive, and comfortable access and travel for all users, including pedestrians, bicyclists, motorists, and public transportation users of all ages and abilities.
Comprehensive Plan	The long-range plan used as a guide for the physical, economic, and social development of Redmond.
Concurrency	A requirement of the 1990 Growth Management Act (RCW 36.70A.070(6)) that the City must enforce an ordinance precluding development approval if a development would cause the transportation LOS to fall below the City’s adopted LOS standard, unless revenues are secured to complete mitigating transportation improvements or strategies within six years. If a development fails to meet the concurrency test, supplemental mitigation in the form of transportation improvements or strategies will be required to accommodate the impacts of the development and allow it to achieve concurrency. Transportation Demand Management (TDM) and other mobility strategies may be used. Maintaining transportation concurrency means implementing transportation improvements in proportion to the level of new development as required by Comprehensive Plan Transportation Policy TR-3 and regulations in RZC 21.52, Transportation Standards.
Congestion	A condition under which the number of vehicles using a facility is great enough to cause reduced speeds and increased travel times.
CTR	See “Commute Trip Reduction.”

Development	The division of a parcel of land into two or more parcels; the construction, reconstruction, conversion, structural alteration, relocation or enlargement of any structure; any mining, excavation, grading, landfill, drainage, removal of vegetation, or disturbance of land or water; and use of land or water or the intensification or extension of the use of land or water.
East Link	A voter-approved project to expand light rail from Downtown Seattle to East King County with stations serving Mercer Island, Bellevue, and Redmond.
Freight	The movement of goods from one place to another.
GMA	See “Growth Management Act.”
Growth and Transportation Efficiency Center	A defined boundary of dense mixed development with major employers, small businesses, and residential units, within an established urban growth area. Local jurisdictions in Washington State may establish GTECs in order to receive state funding for programs that provide greater access to employment and residential centers while decreasing the proportion of commuters driving alone during peak periods on the state highway system.
Growth Management Act	Refers to the 1990 State Growth Management Act (ESHB 2929) as amended, requiring urban counties and the cities within them to develop comprehensive plans to deal with growth in Washington State over the next 20 years. The GMA is codified at RCW 36.70A and other chapters.
GTEC	See “Growth and Transportation Efficiency Center.”
High Occupancy Vehicle	Generally, a vehicle carrying more than one person, including a carpool, vanpool, or bus.
HOV	See “High Occupancy Vehicle.”
Impact Fee	A payment of money required as a condition of development approval to pay for capital improvements needed to serve new growth and development and is: reasonably related to the new development that creates additional demand and need for capital improvements; a proportionate share of the cost of the public improvements; and used for improvements that reasonably benefit the new development.
Intelligent Transportation System	A broad range of wireless and wire line communications-based information and electronics technologies intended to improve transportation safety and mobility.
ITS	See “Intelligent Transportation System.”
Level of Service	A measure of a public facility or service’s operational characteristics used to gauge its performance.
LID	See “Low Impact Development.”
Light Rail	A form of urban rail public transportation that generally has more flexibility in capacity and design speed than heavy rail and metro systems, and higher capacity and speed than traditional street-running tram or bus systems. Light rail systems usually use electric rail cars operating either above, below, and at grade in the right-of-way, separated from other traffic but sometimes mixed with other traffic in city streets.
Local Street	A street which provides for localized traffic circulation, access to nearby arterials, and access to neighborhood land uses.
LOS	See “Level of Service.”
Low Impact Development	A term used to describe a land planning and engineering design approach to managing stormwater runoff. LID emphasizes conservation and use of on-site natural features to protect water quality. This approach implements engineered small-scale hydrologic controls to replicate predevelopment conditions through infiltrating, filtering, storing, evaporating, and detaining runoff close to its source. LID is similar to “On-site Stormwater Management,” a term used by the Washington State Department of Ecology.
Main Street	

Master Plan	A long-term outline of a project or government function.
Metropolitan Planning Organization	A federally mandated organization of elected officials in urbanized regions with 50,000 or more population that provide a forum for local decision making on transportation issues of a regional nature.
Mixed Use	The presence of more than one category of use in a structure; for example, a mixture of residential units and offices in the same building.
Mobility	The movement of people and goods. The two mobility measures that are used in the transportation concurrency system are (1) mobility units (MU) and (2) person miles of travel (PMT).
Mobility Unit	A measurement unit that is used to express the level of travel demand on the transportation system generated by a land use(s), or the unit increase in the ability to travel on the transportation system due to the increased supply of transportation improvements, such as those on the City's six-year plan, Transportation Facility Plan (TFP), or Buildout Transportation Facility Plan (BTFP).
Mode	A type of transportation, such as pedestrian (walking), bicycle, automobile, or transit (bus).
Mode Split	The statistical breakdown of travel by alternate modes, usually expressed as a percentage of travel by single occupant automobile, carpool, transit, etc. Mode choice goals are used to help people in the public and private sectors make appropriate land use and transportation decisions.
MPO	See "Metropolitan Planning Organization."
Multimodal	A term referring to accessibility by a variety of travel modes, typically pedestrian, bicycle, transit, and automobile modes, but may also include water and air transport modes.
Pavement Condition Index	A numerical index between 0 and 100 that indicates the quality of a section of pavement.
PCI	See "Pavement Condition Index."
Pipeline Development	Projects that are permitted and/or funded but not yet complete.
Priority Corridor	A route along which a particular mode is given design priority.
PSRC	See "Puget Sound Regional Council."
Puget Sound Regional Council	A regional planning and decision-making body for growth and transportation issues in King, Kitsap, Pierce, and Snohomish Counties. Under federal transportation law, the Council is the Metropolitan Planning Organization (MPO), responsible for regional transportation planning and programming of federal transportation funds in the four counties. It is also the designated Regional Transportation Planning Organization (RTPO) for the four counties. PSRC manages the adopted regional transportation strategy, Transportation 2040.
Roundabout	A circular intersection with yield control at entry, which permits a vehicle on the circulatory roadway to proceed, and with deflection of the approaching vehicle counter-clockwise around a central island.
R-Trip	A commute options program partnership between the City of Redmond, King County, the Greater Redmond Transportation Management Association, and Redmond businesses that offers information, programs, and incentives to assist Redmond's commuters and residents in choosing alternatives to driving alone.
Screenline V/C	A measure of traffic demand on a segment of roadway versus that roadway's maximum theoretical capacity.

Shared Street	A roadway where all users share the street. The mixing expands the realm of public space that can be used for activities or provide a greater area for walking and bicycling within a smaller right-of-way. All users yield to one another, and vehicle speeds are kept to a minimum through design and regulation. The basis for this concept of the Dutch woonerf, which roughly translates into “residential yard.”
Single Occupancy Vehicle	A vehicle carrying one person.
Sound Transit 2	A \$17.8 billion funding package, approved in 2008 by Puget Sound-area voters, that funds a variety of mass transit improvements including the East Link light rail extension.
Sound Transit 3	A potential future funding package that would extend the Puget Sound-area mass transit network.
SOV	See “Single Occupancy Vehicle.”
ST2	See “Sound Transit 2.”
ST3	See “Sound Transit 3.”
Standard Detail	A standardized engineering specification.
Stormwater	Water that is generated by rainfall and is often routed into drain systems in order to prevent flooding.
Strategy	An approach or method that, when used for transportation purposes, incorporates the use of transportation facilities, projects, programs, and services to provide mobility for people and goods, and thus maintain the City’s adopted transportation Level-of-Service (LOS) standard.
Streetscape	The visual character of a street as determined by elements, such as structures, access, greenery, open space, view, etc.
Sustainability	Meeting the needs of the present without compromising the ability of future generations to meet their own needs.
TDM	See “Transportation Demand Management.”
TFP	See “Transportation Facilities Plan.”
TIB	See “Transportation Improvement Board.”
TIP	See “Transportation Improvement Program.”
TMP	See “Transportation Master Plan.”
TOD	See “Transit-Oriented Development.”
Transit	Public transportation; referring in this document to public bus, trolley, and light rail, but not vanpools.
Transit-Oriented Development	A dense, walkable residential development type that features easy access to mass transit and retail.
Transportation Demand Management	Public and private programs to manage demand based on transportation supply. TDM measures are frequently directed toward increasing the use of public transportation, carpools and vanpools, and nonmotorized travel modes.
Transportation Facilities Plan	The long-range plan identifying transportation facilities, programs, projects, and services that are necessary to provide for the mobility of people and goods from new development allowed by the Redmond Comprehensive Plan and the Redmond Zoning Code. The planning horizon of the TFP typically ranges between 12 to 20 years.
Transportation Improvement Board	An independent state agency that distributes and manages street construction and maintenance grants to 320 cities and urban counties throughout Washington State.
Transportation Improvement Program	A six-year funded program of transportation improvements. The TIP is updated and adopted annually.
Transportation Master Plan	A planning document describing the City of Redmond’s approach to delivering its transportation program, projects, and actions in the 18 years following the year of adoption.

Urban Center	Defined in the Countywide Planning Policies as an area for focusing growth and aligning a high capacity transit system. To be designated an urban center, an area must have a land area between 0.5 and 1.5 square miles and must be able to support a minimum of 15,000 jobs at a minimum density of 50 jobs per gross acre and a minimum residential density of 15 households per acre.
Vanpool	An organized ridesharing arrangement in which a number of people (typically six to 15 people) travel together between fixed points on a regular basis in a van. Expenses are shared, and there is usually a regular volunteer driver.
Vehicle Miles Traveled	A measurement of forecasted travel demand; equivalent to one car, bus, or truck traveling one mile.
Vision Blueprint	See “Capital Investment Strategy.”
VMT	See “Vehicle Miles Traveled.”
Washington State Department of Transportation	The state-level agency responsible for building, maintaining, and operating the state highway and ferry systems; and that works with others to maintain and improve local roads, railroads, airports, and multimodal alternatives to driving.
Wayfinding	Maps, signs, and other methods of signage that assist people in navigation.
WSDOT	See “Washington State Department of Transportation.”