

Transportation Master Plan



City of Redmond



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.

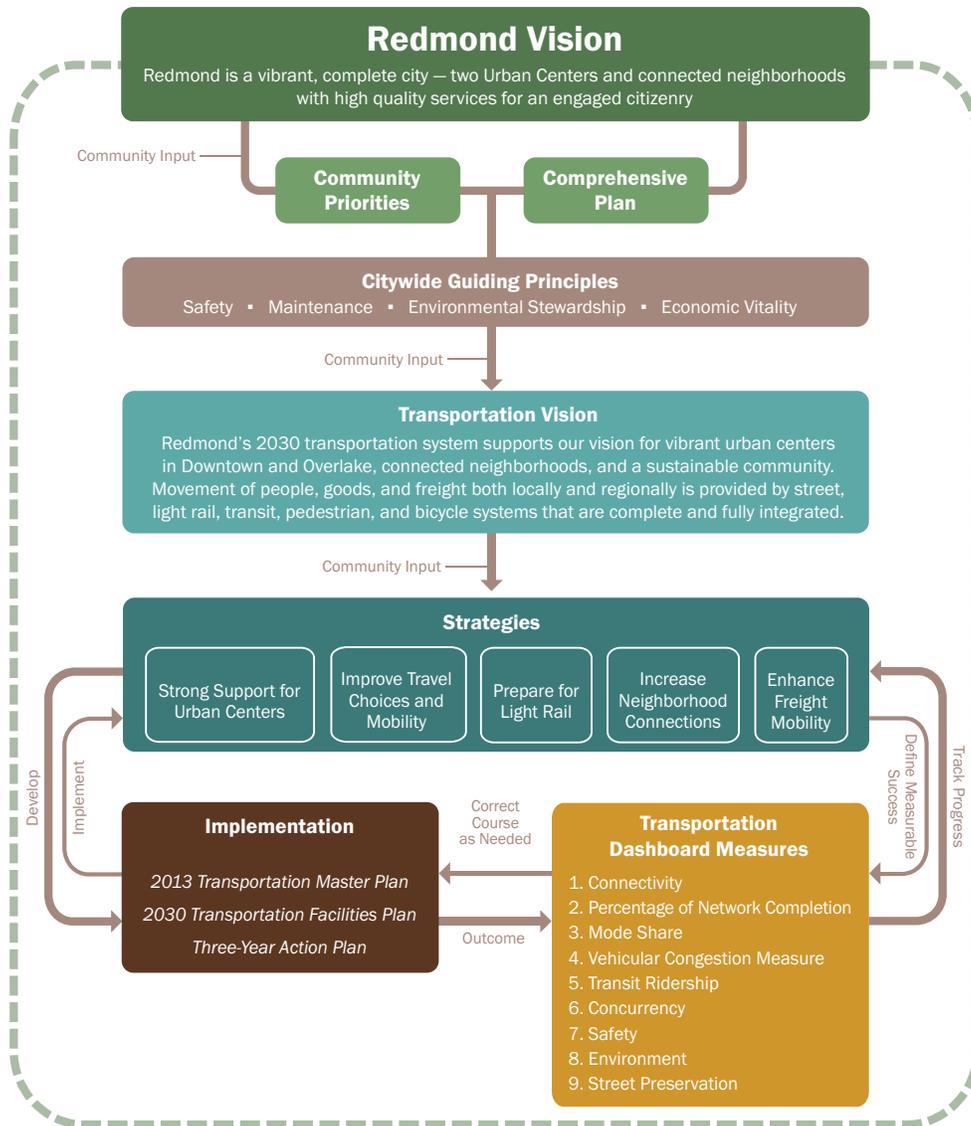


Figure 1. Strategic framework

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

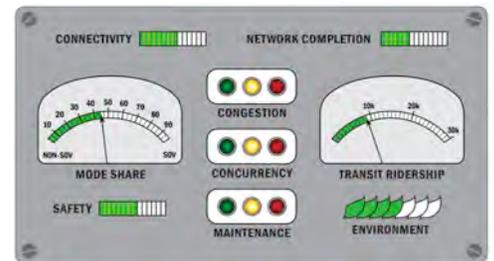
Effective implementation of the five key strategies will be achieved through the guidance provided by the Transportation Master Plan and includes a long-term investment plan and a short-term action plan:

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.

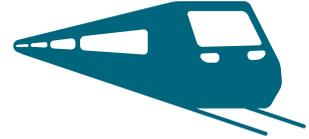
Through over a year of community outreach the City consistently heard from people who live and work here that they want the ability to travel without a car. This is not a wholesale abandonment of the automobile, which will continue to be an important means of travel well into the future, but rather an 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.

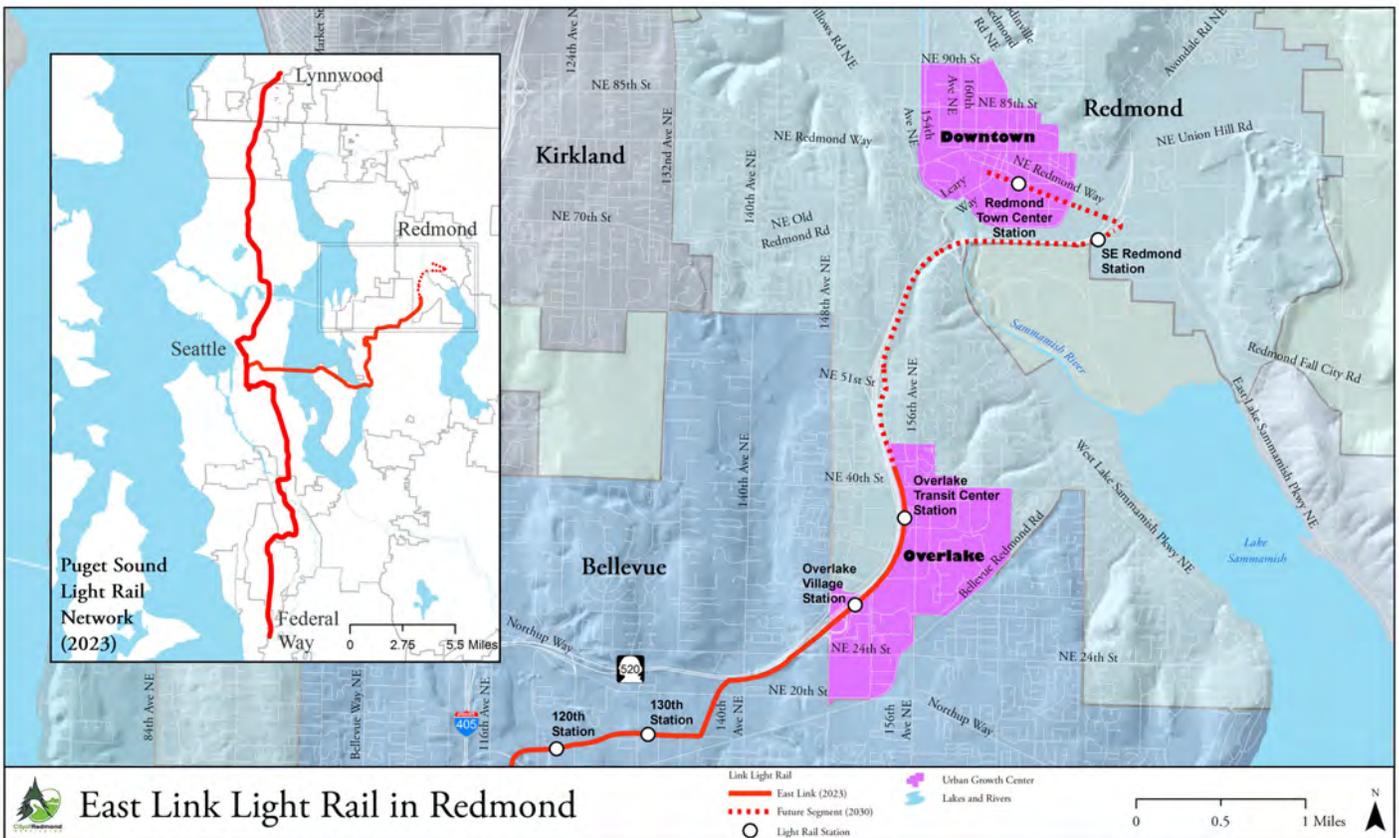


East Link Light Rail

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.

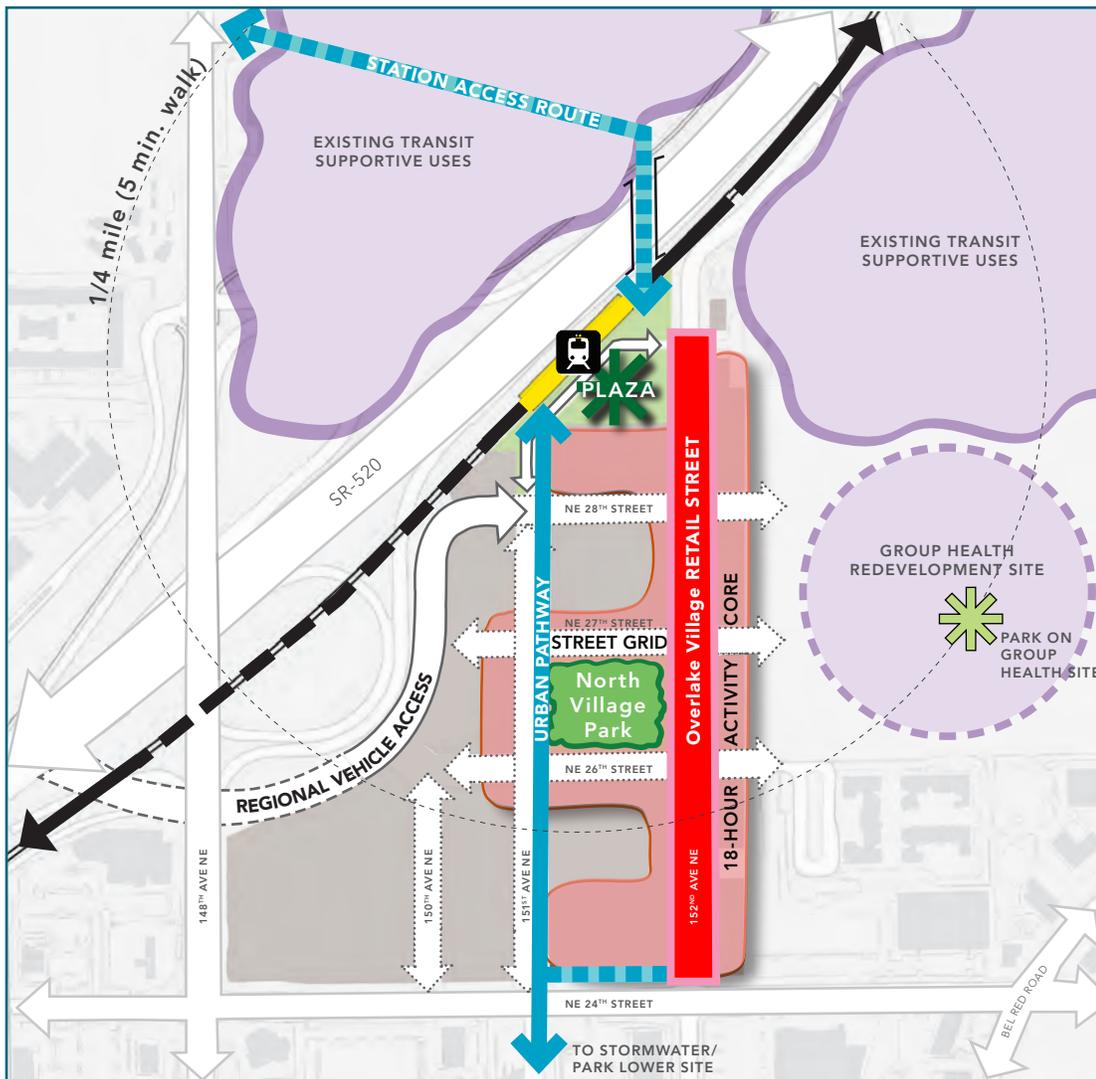
“The public conversation about transportation has changed over the past 20 or more years. In the past, the community was most concerned about moving cars and congestion. Today we talk about connectivity, and how to get around without a car.”

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.



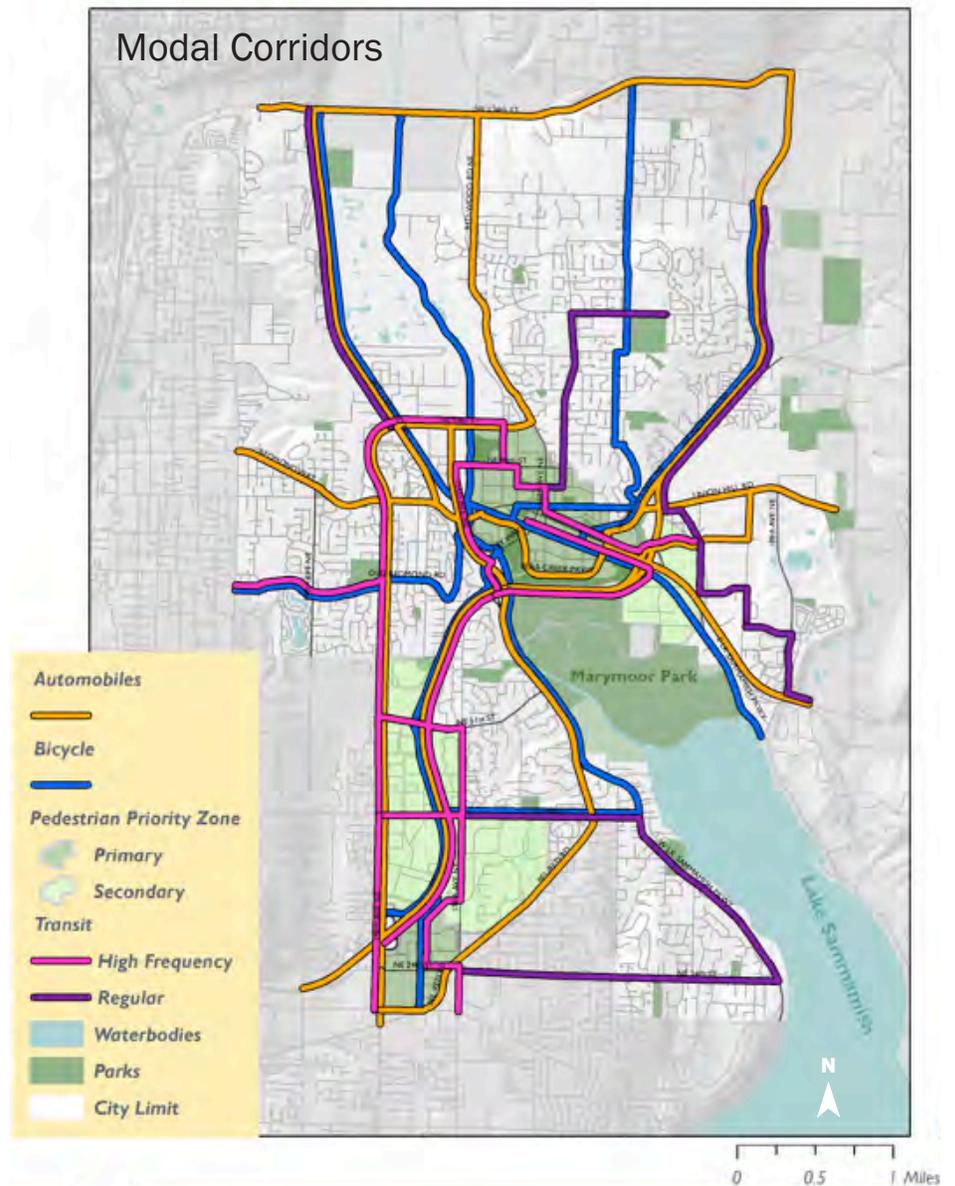
Connected Neighborhoods

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.

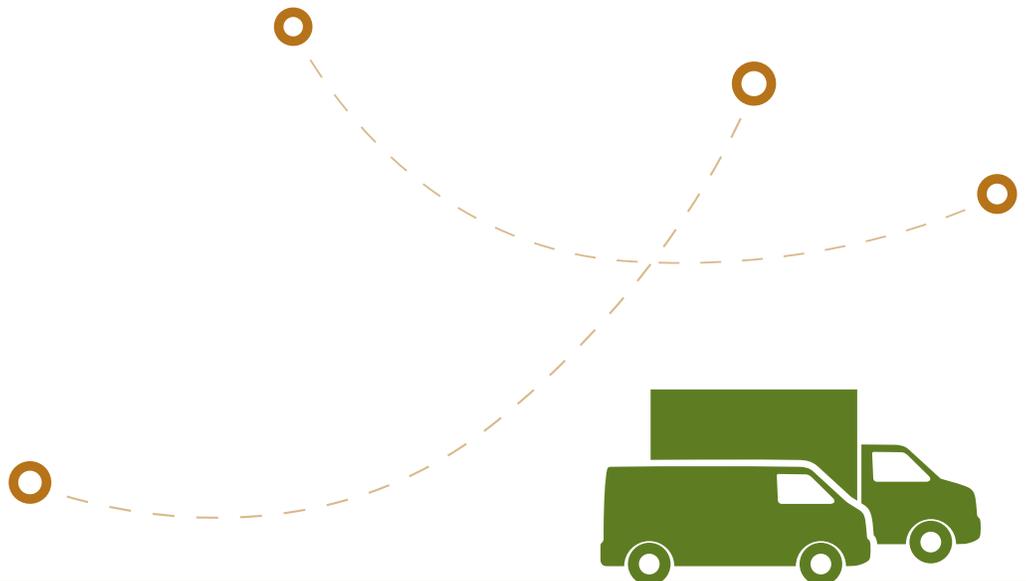
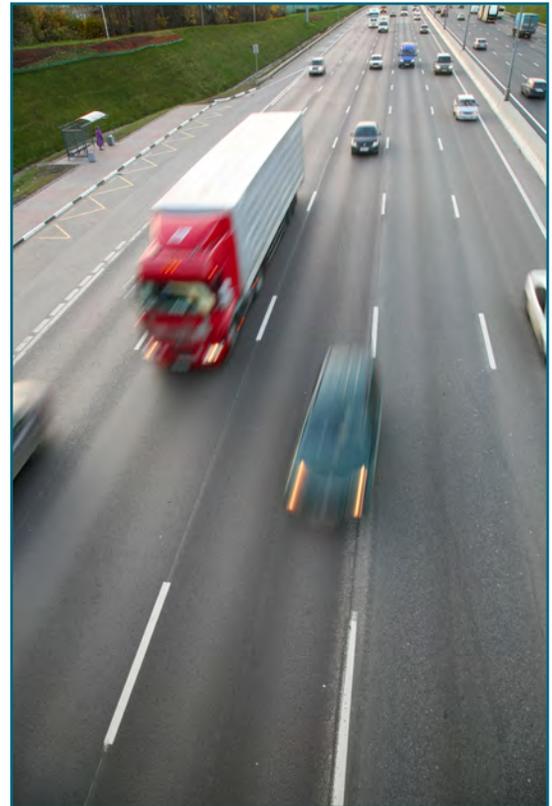
Modal Corridors



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.

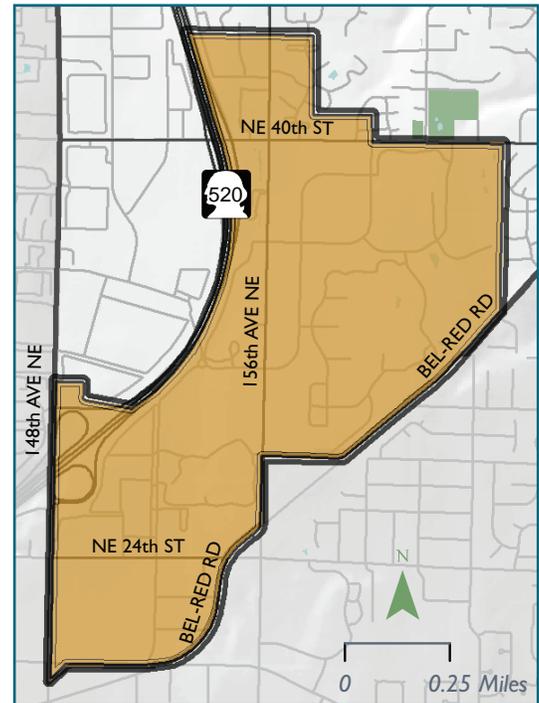
The transformation of Overlake will require a transportation system that supports this development with convenient regional access, an efficient network for internal circulation, and a multimodal approach to facility design and intermodal connections. These transportation improvements will be paired 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.



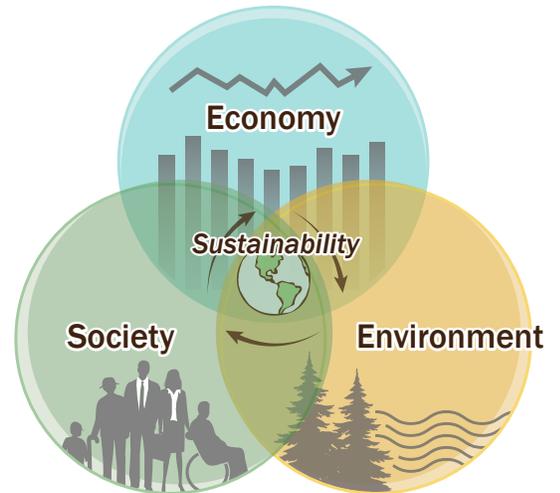
Overlake Urban Center

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

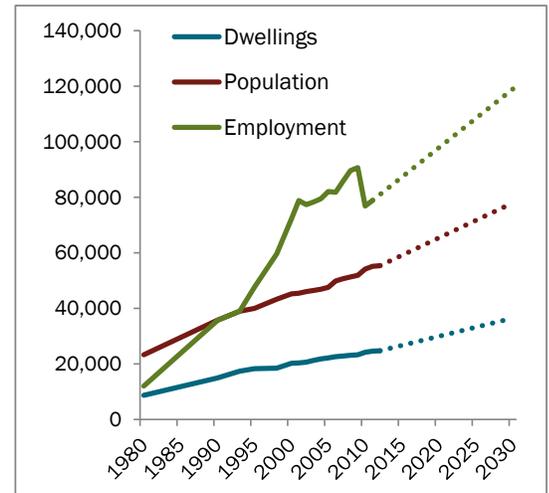


Figure 2. Population, employment, and dwellings in Redmond, 1980–2030



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.

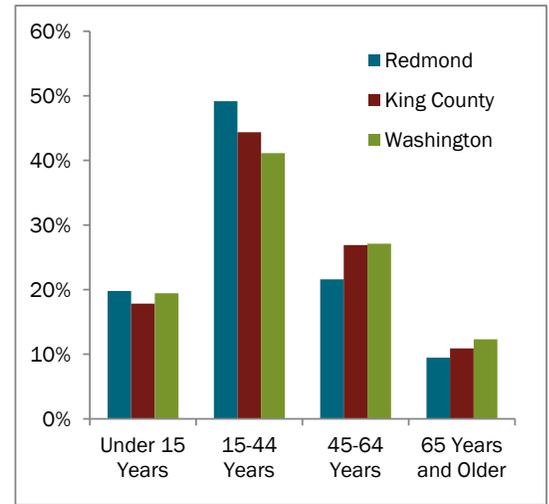


Figure 3. Population by age group in Redmond, King County, and Washington State

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.

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.

Air Quality

Internal combustion vehicles, which include most cars and trucks, emit gases 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.

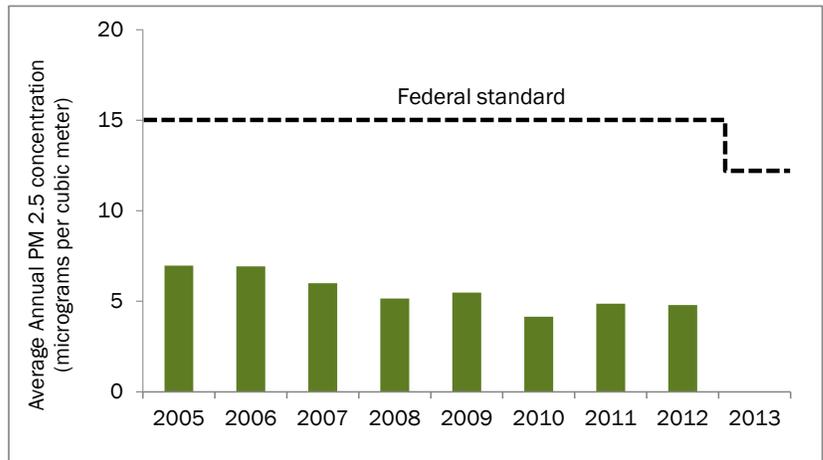


Figure 4. Average annual PM 2.5 at Bellevue NE 4th Street monitoring station

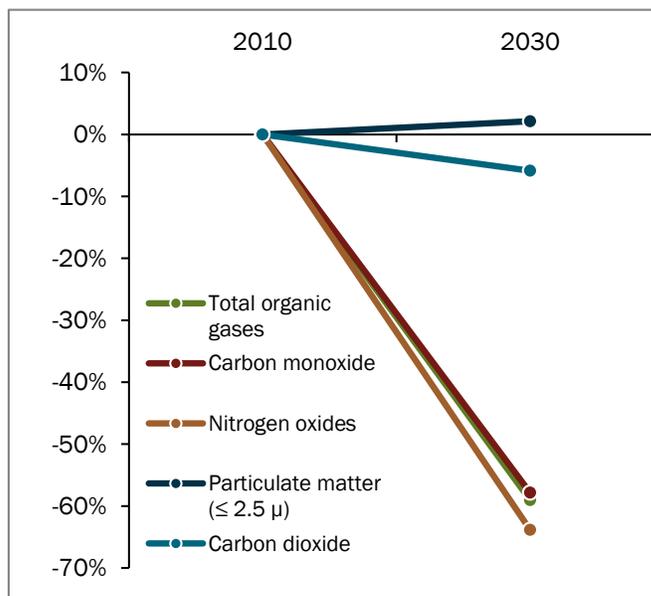


Figure 5. Projected trends for major automobile pollutants: 2010-2030

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.

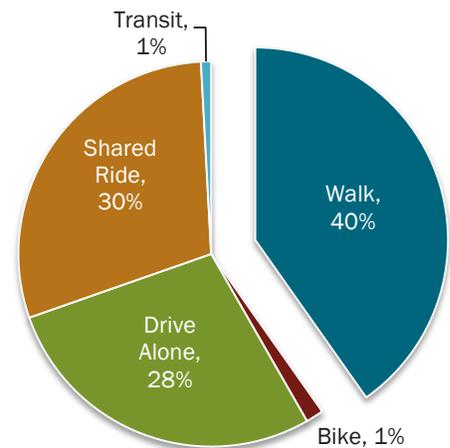


Figure 6. Mode split for daily household trips under one mile in Redmond. Forty percent are made on foot

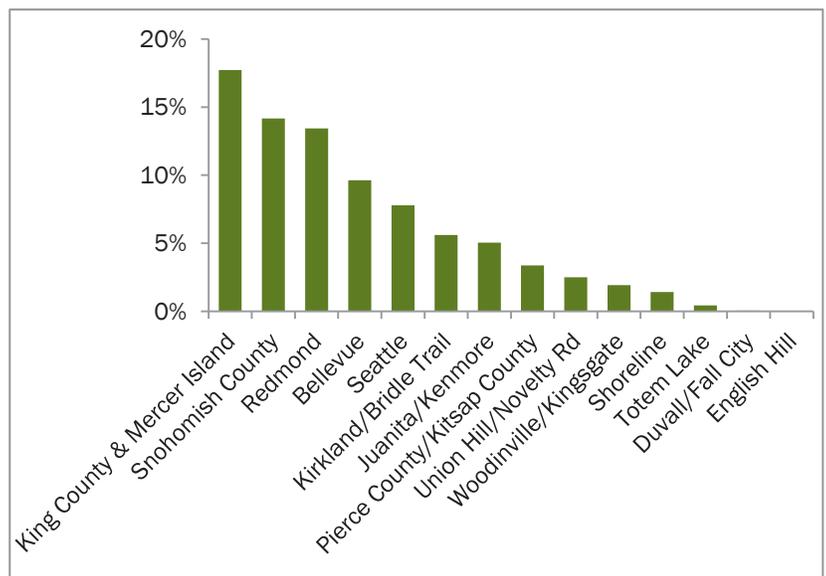


Figure 7. Redmond employee place of residence

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.

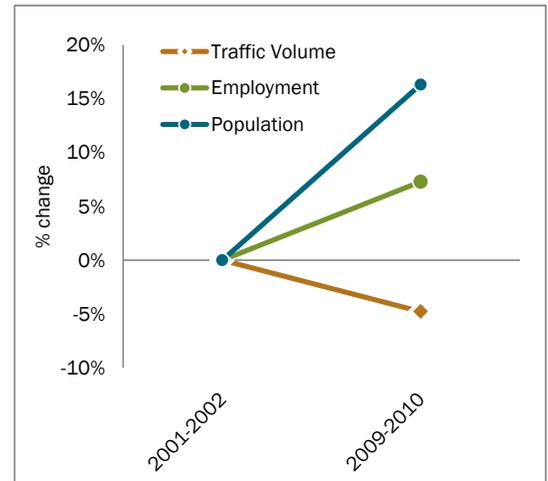


Figure 8. Redmond vehicular volumes, employment, and population (actual)

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.



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

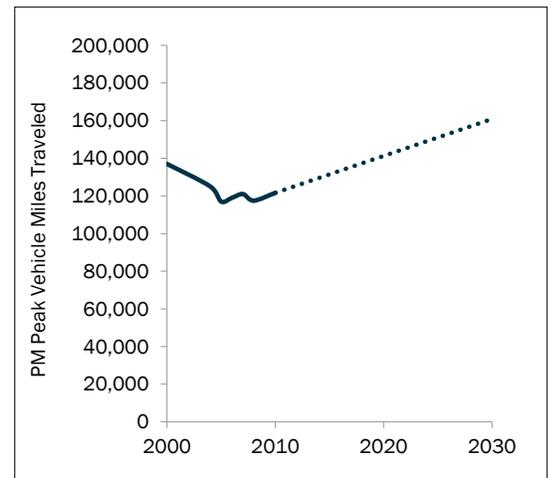


Figure 9. Estimated PM peak vehicle miles traveled in Redmond

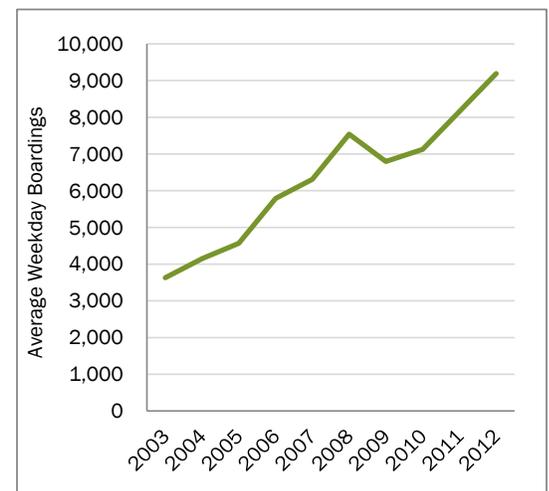


Figure 10. Public transit ridership in Redmond, 2003-2012

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.

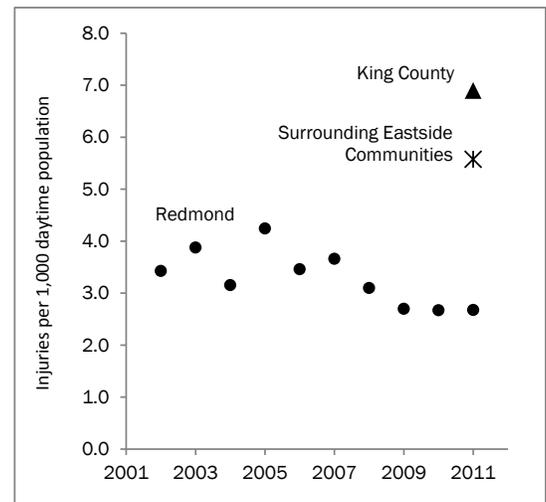


Figure 11. Per capita traffic injury rates in Redmond, King County, and surrounding Eastside communities

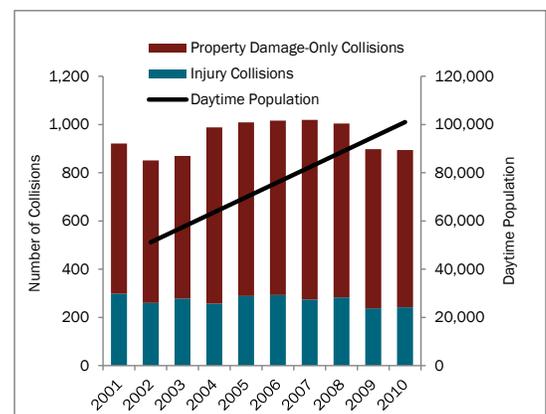


Figure 12. Collisions in Redmond: 2001–2010

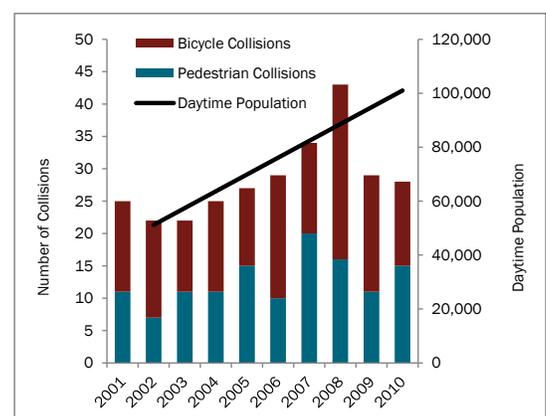


Figure 13. Pedestrian- and bicycle-involved collisions in Redmond: 2001–2010

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.

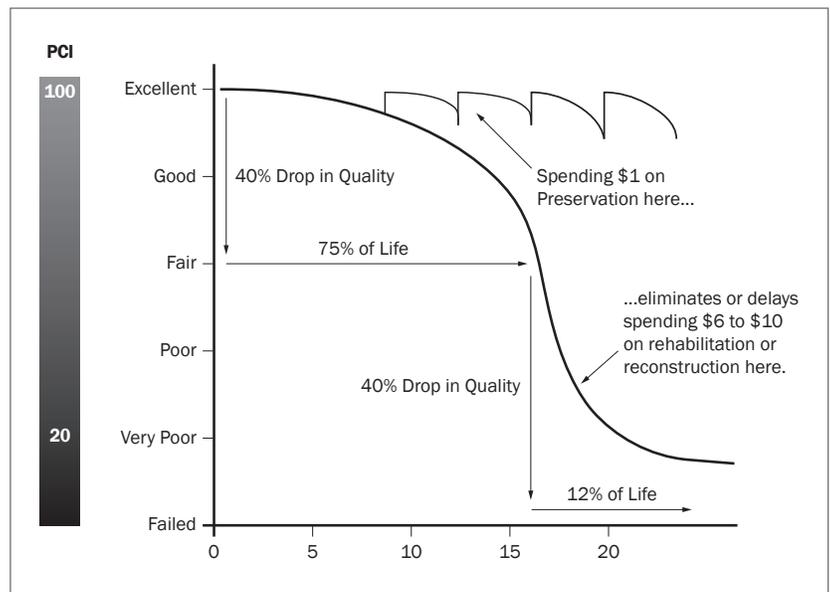


Figure 14. Preventative pavement maintenance results in substantial savings (Image source: FHWA)

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.

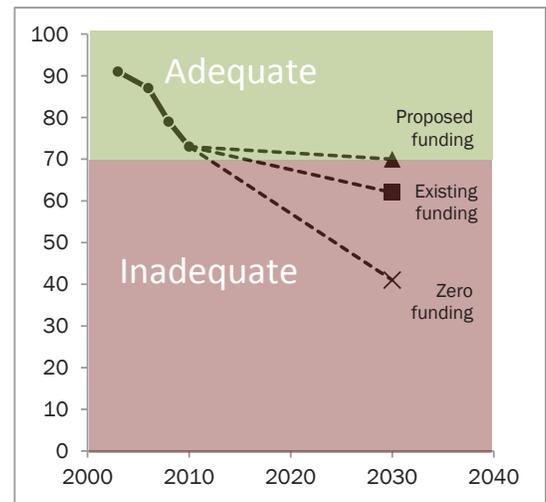


Figure 15. Pavement management funding scenarios

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.



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.

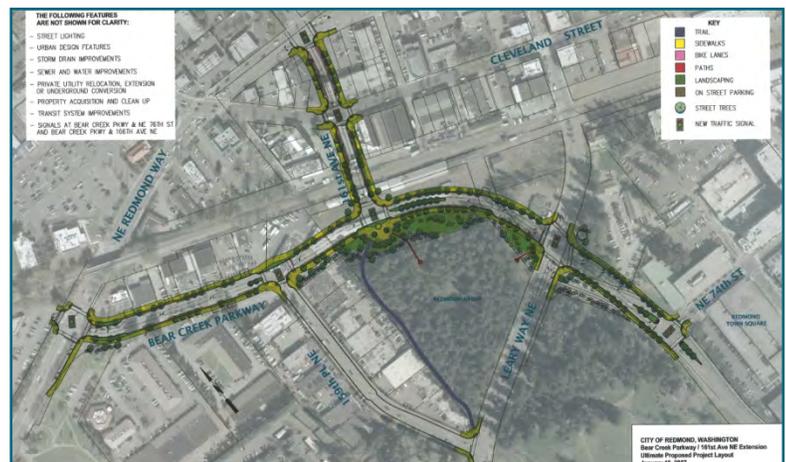


Figure 16. The Bear Creek Parkway extension created an important new connection in Downtown

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

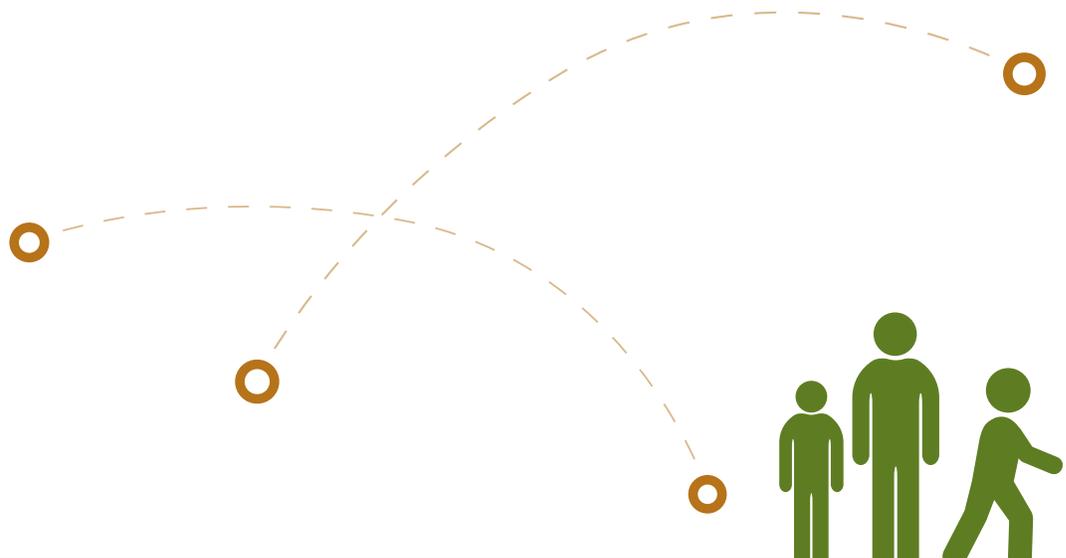
Year	Multimodal Corridors (% Pedestrian Supportive or Better)	Overlake Village (% Pedestrian Supportive or Better)	Downtown (% Pedestrian Supportive or Better)	Bicycle System (% Completed by Mileage)
2007	5	9	45	51
2009	6	10	53	55
Objective (2022)	100	100	100	100

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.

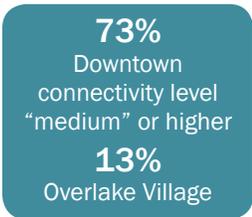
Table 3. Connectivity categories

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.

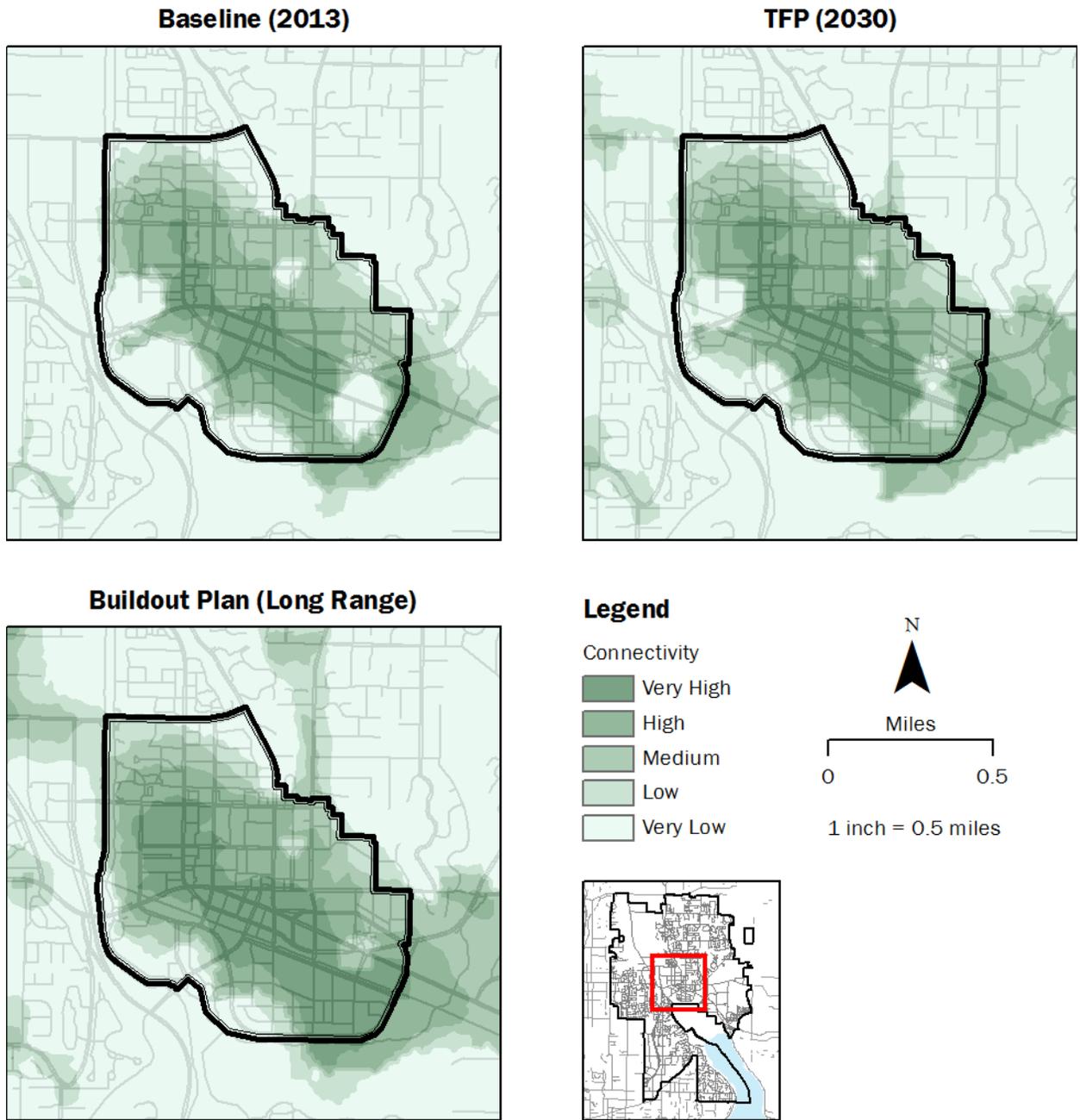


Figure 17. Connectivity levels in Downtown (Dark green indicates high connectivity)

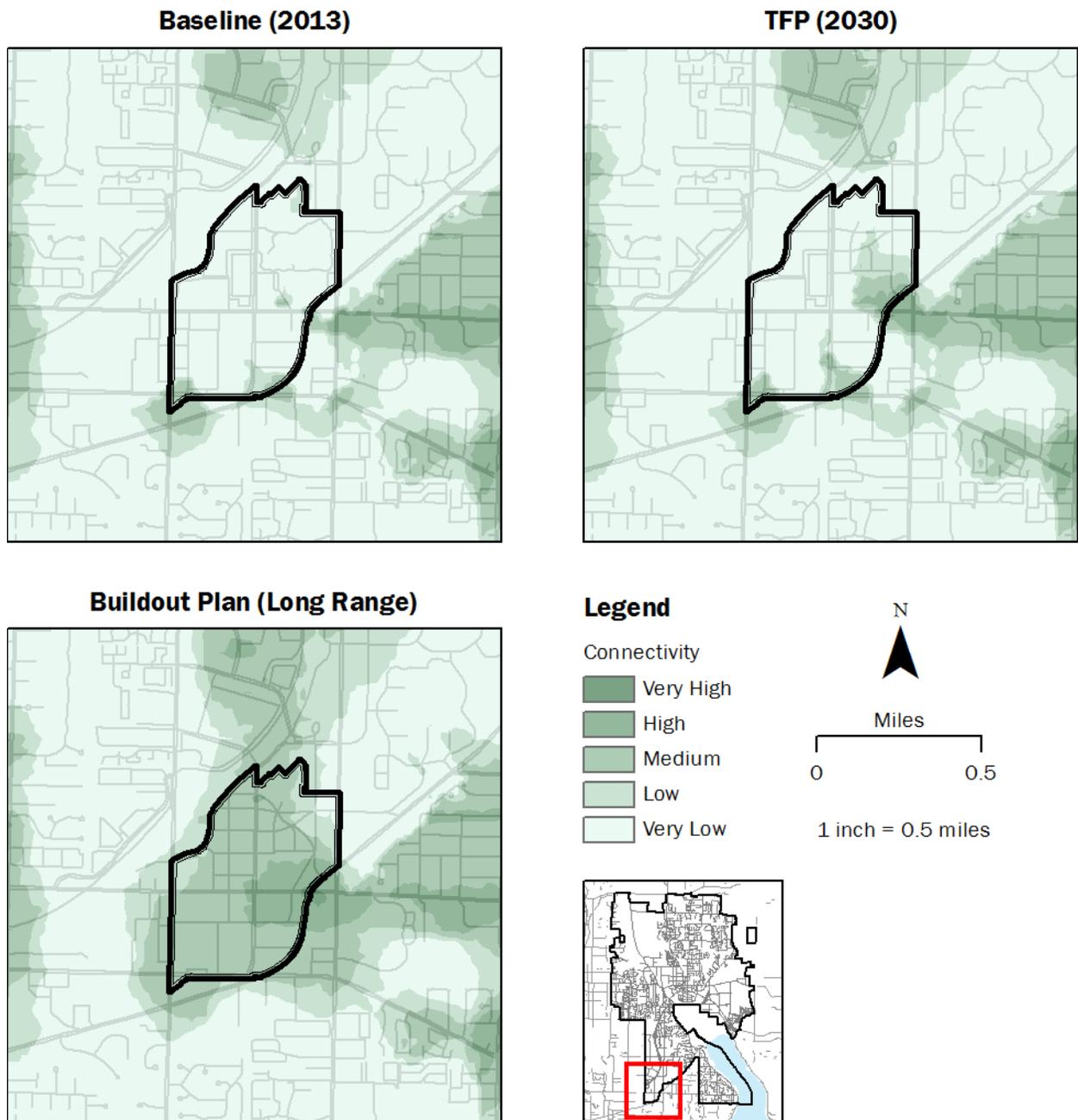


Figure 18. Connectivity levels in Overlake Village (Dark green indicates high connectivity)

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

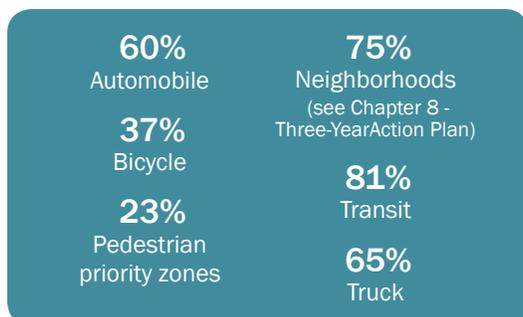
The method for calculating truck network completion is the same as the automobile network.

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

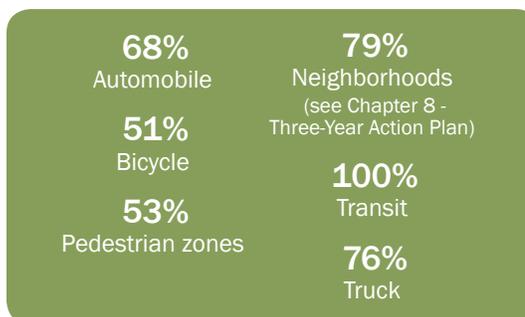
There is no easy fix for congestion, but we can limit its growth and impact.

Targets

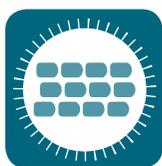
2013 Baseline



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)			

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).



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.

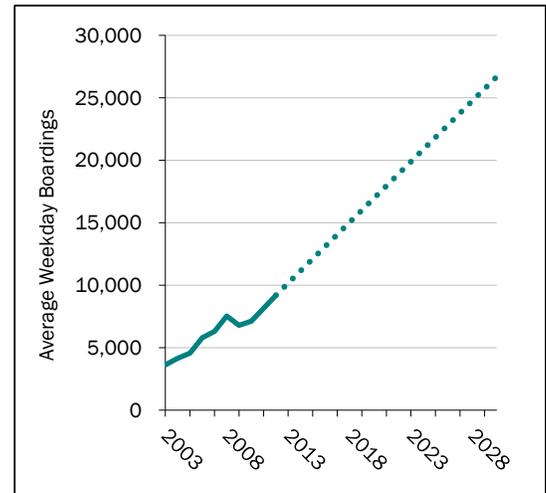


Figure 19. Transit ridership, 2005–2030 (projected)

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

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.

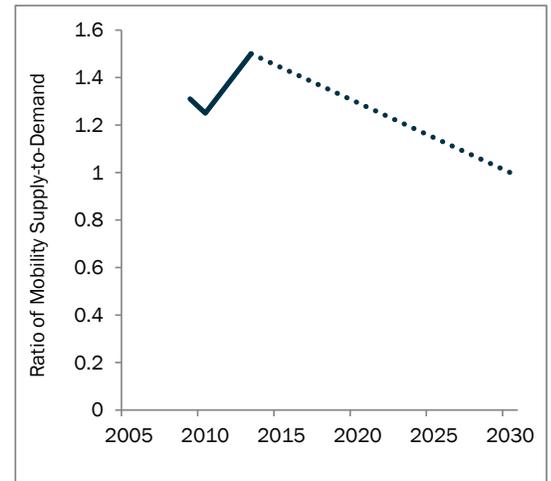


Figure 20. Ratio of mobility units of supply to mobility units of demand, 2009-2030

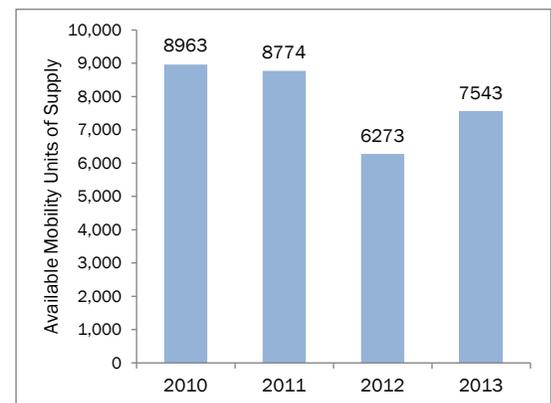


Figure 21. Available mobility units of supply as of January 1, 2013

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.

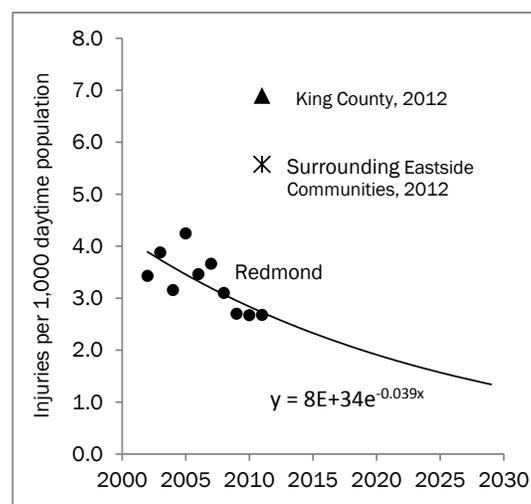


Figure 22. Traffic-related injuries per 1,000 daytime population

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.

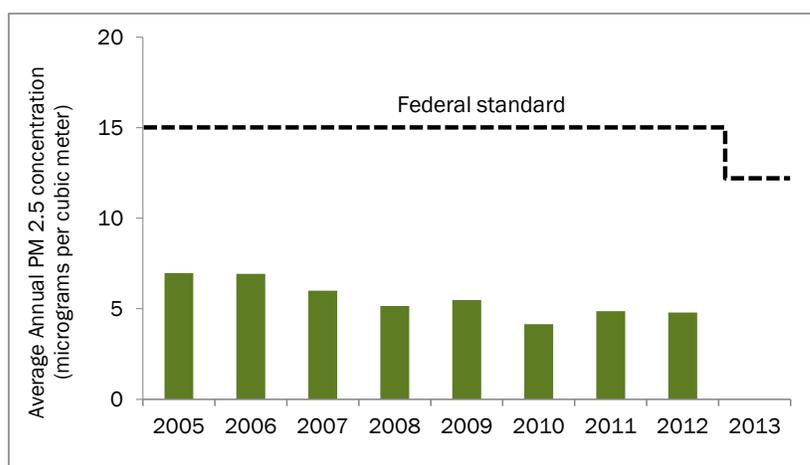


Figure 23. PM 2.5 concentrations, 2005-2012

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 $12 \mu\text{g}/\text{m}^3$ (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.

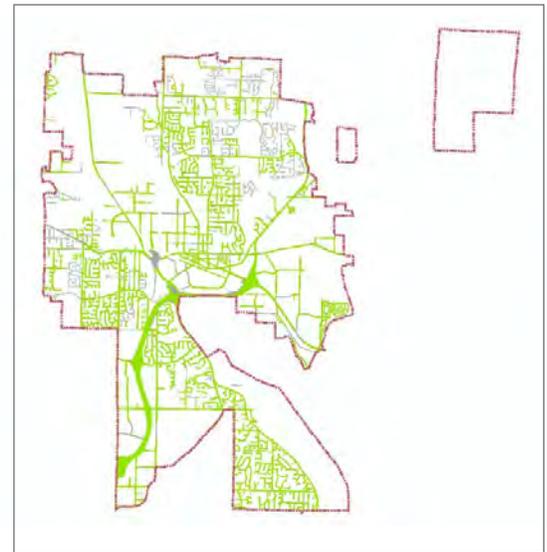


Figure 24. Road area without runoff treatment facilities, 2013

	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.

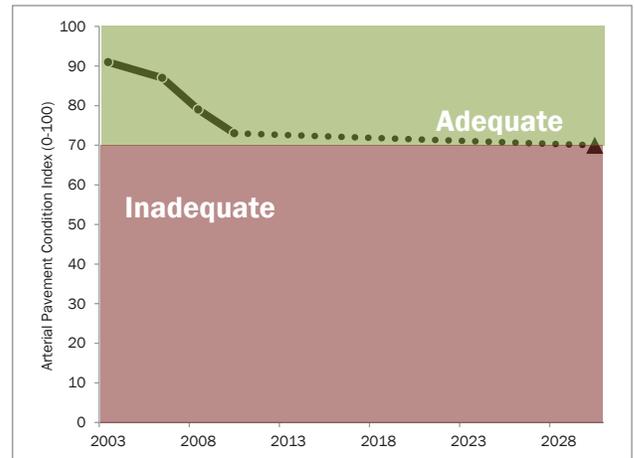


Figure 25. Average arterial pavement condition, 2003-2030 under current TFP funding proposal

2010 Baseline

73

Average arterial PCI of 73

2030 Target

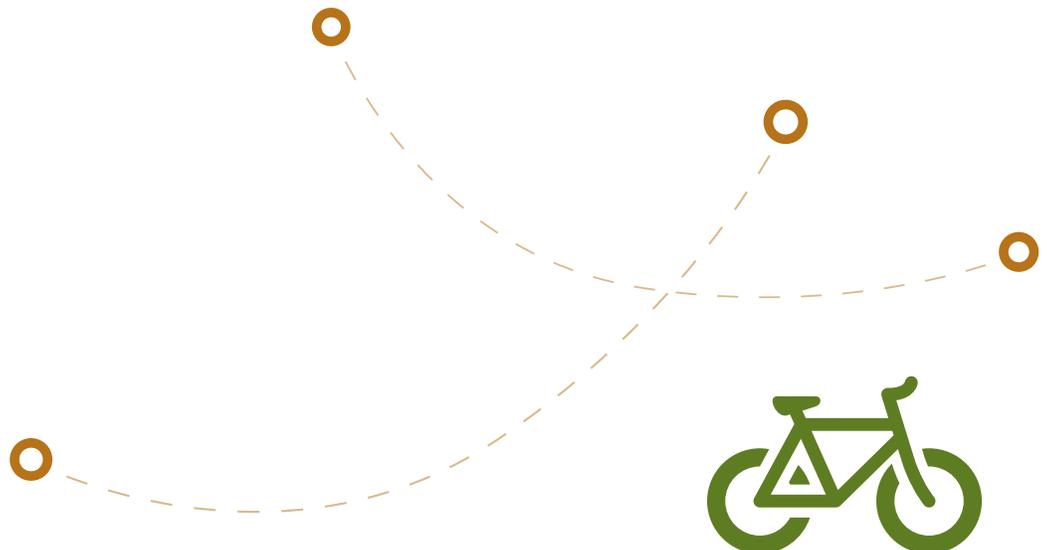
70

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.

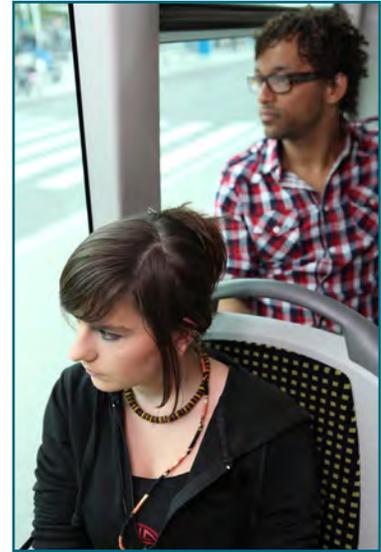
Support for Urban Centers – New street connections are planned for Downtown and Overlake to improve the “grid” and connectivity within the two urban centers. In addition, Downtown and Overlake will each have a “Main Street” (Cleveland Street and 152nd Avenue NE, respectively). The intention is to elevate 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

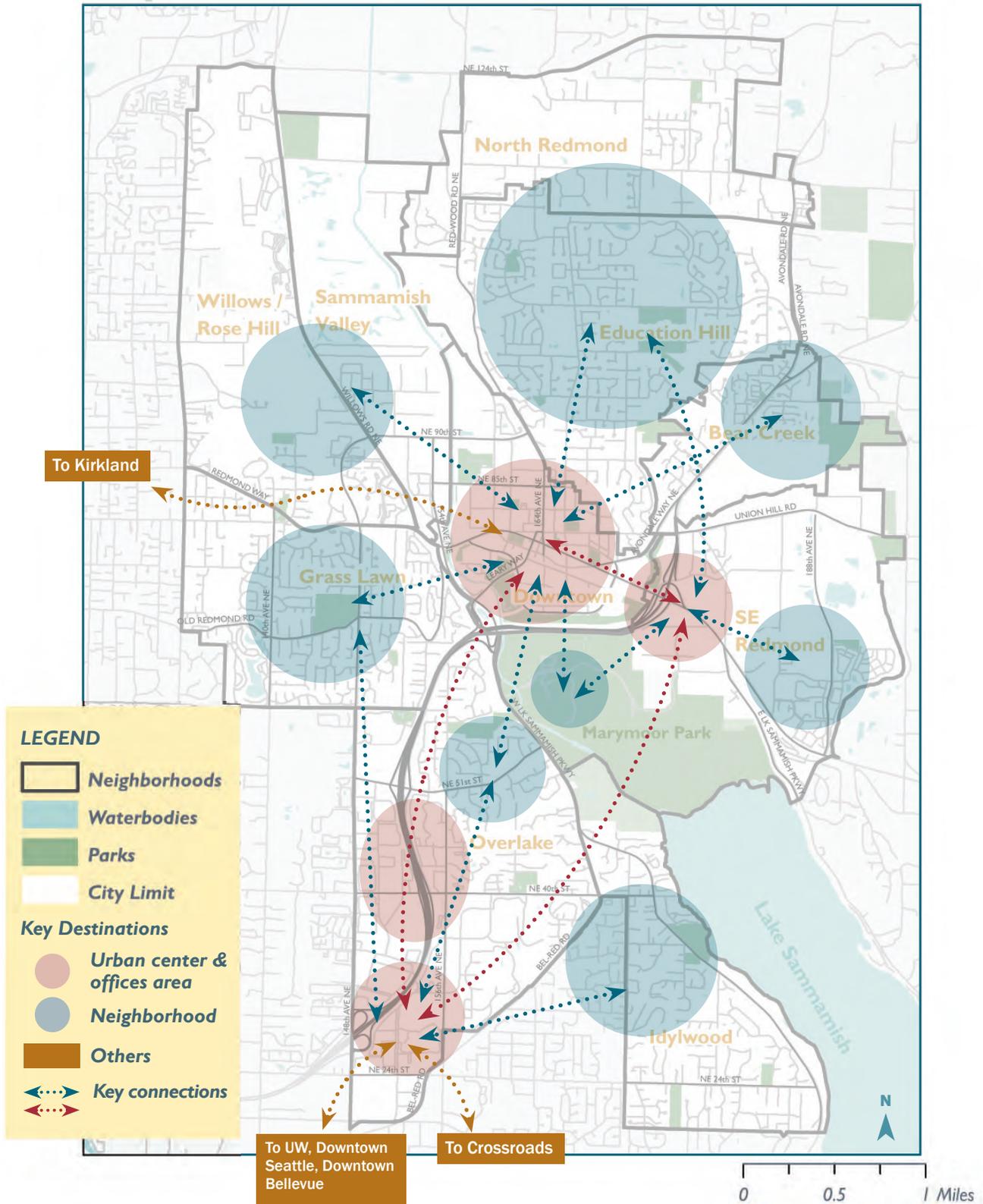


Figure 26. Key connections between major destinations

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

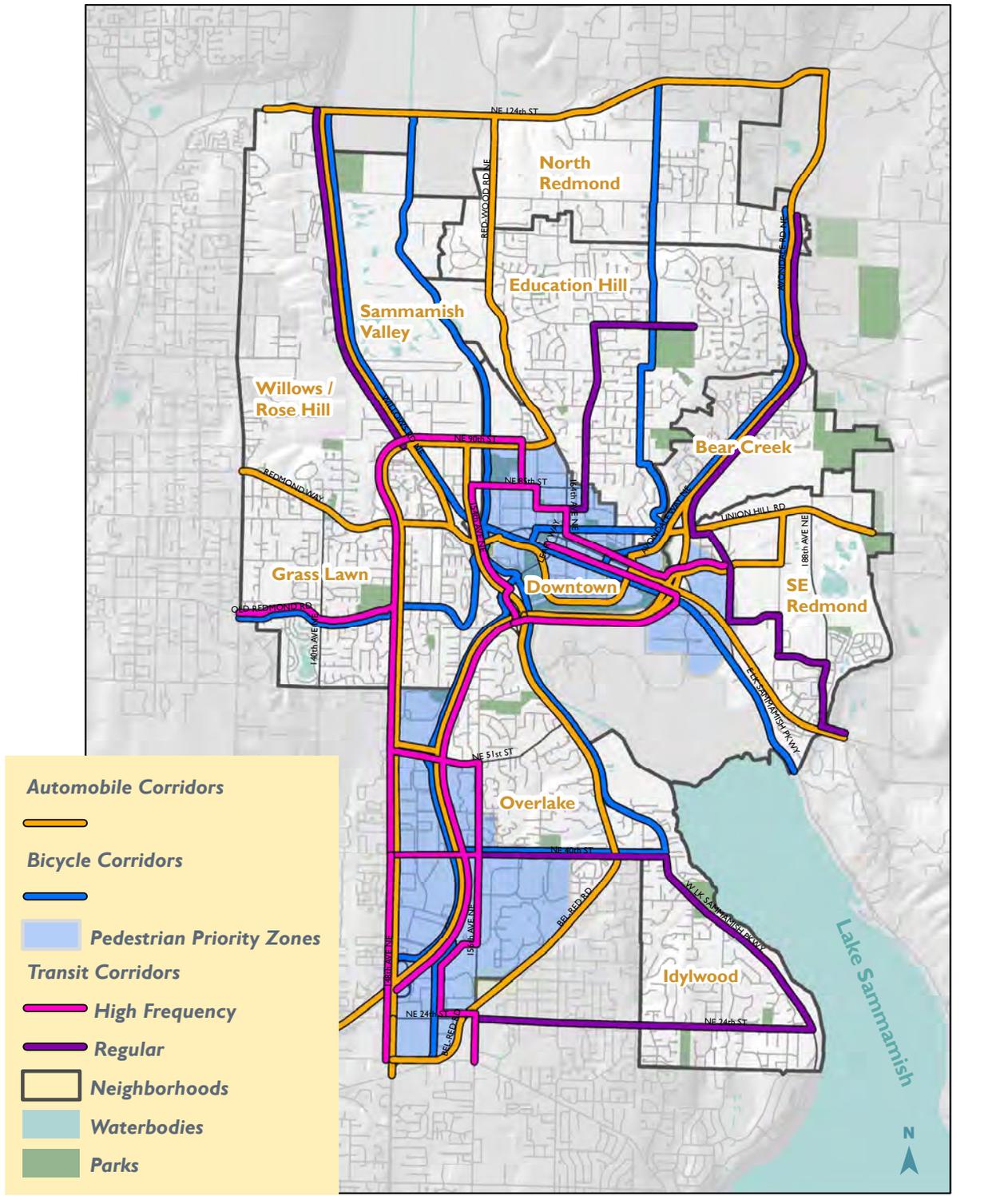


Figure 27. Modal corridors

0 0.5 1 Miles

Multimodal Corridors

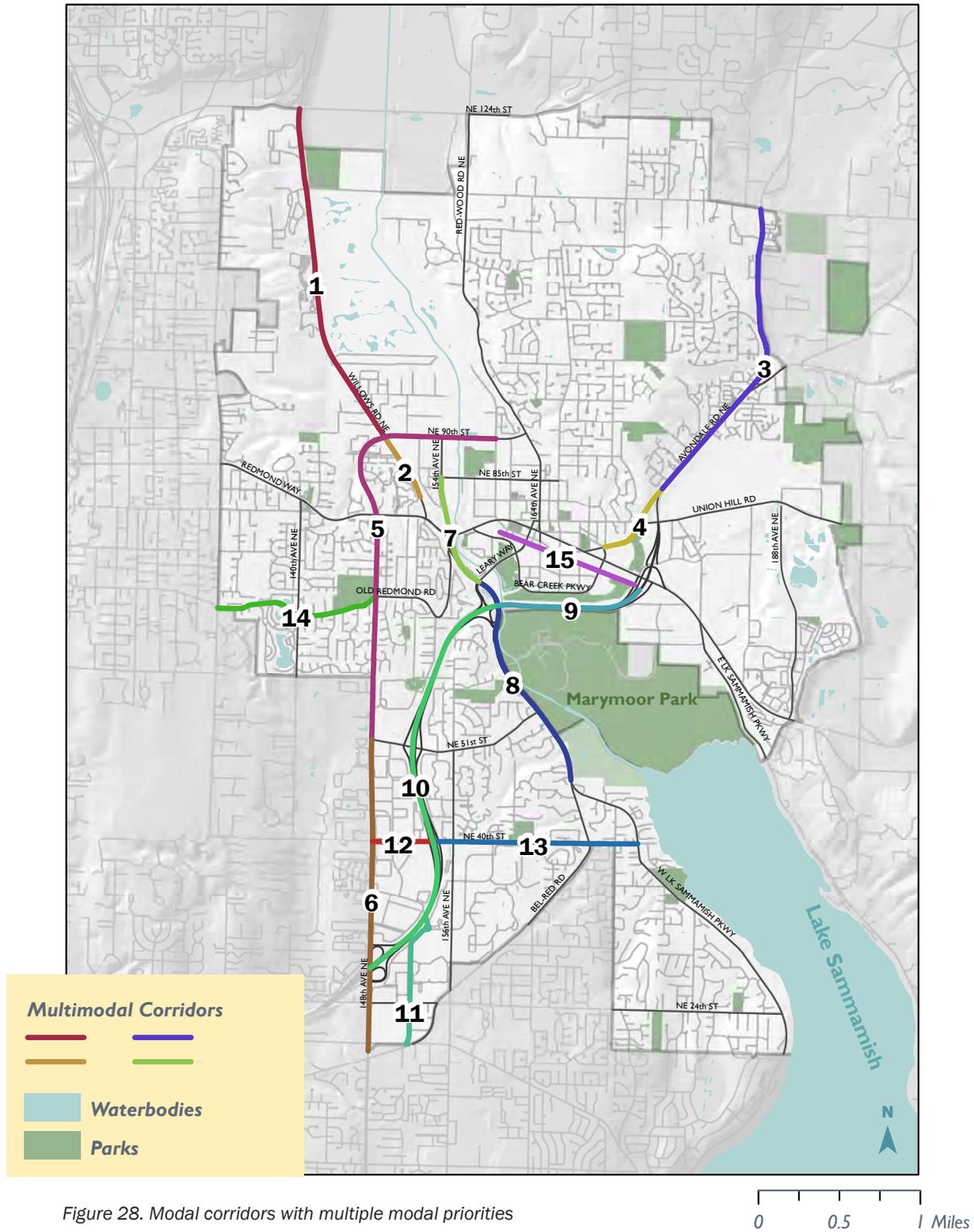


Figure 28. Modal corridors with multiple modal priorities

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



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.

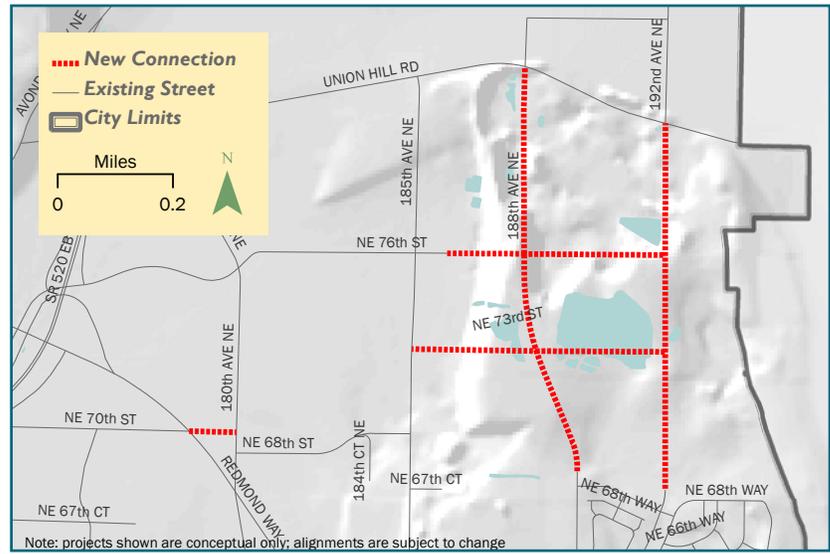


Figure 29. Southeast Redmond new street and trail connections

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

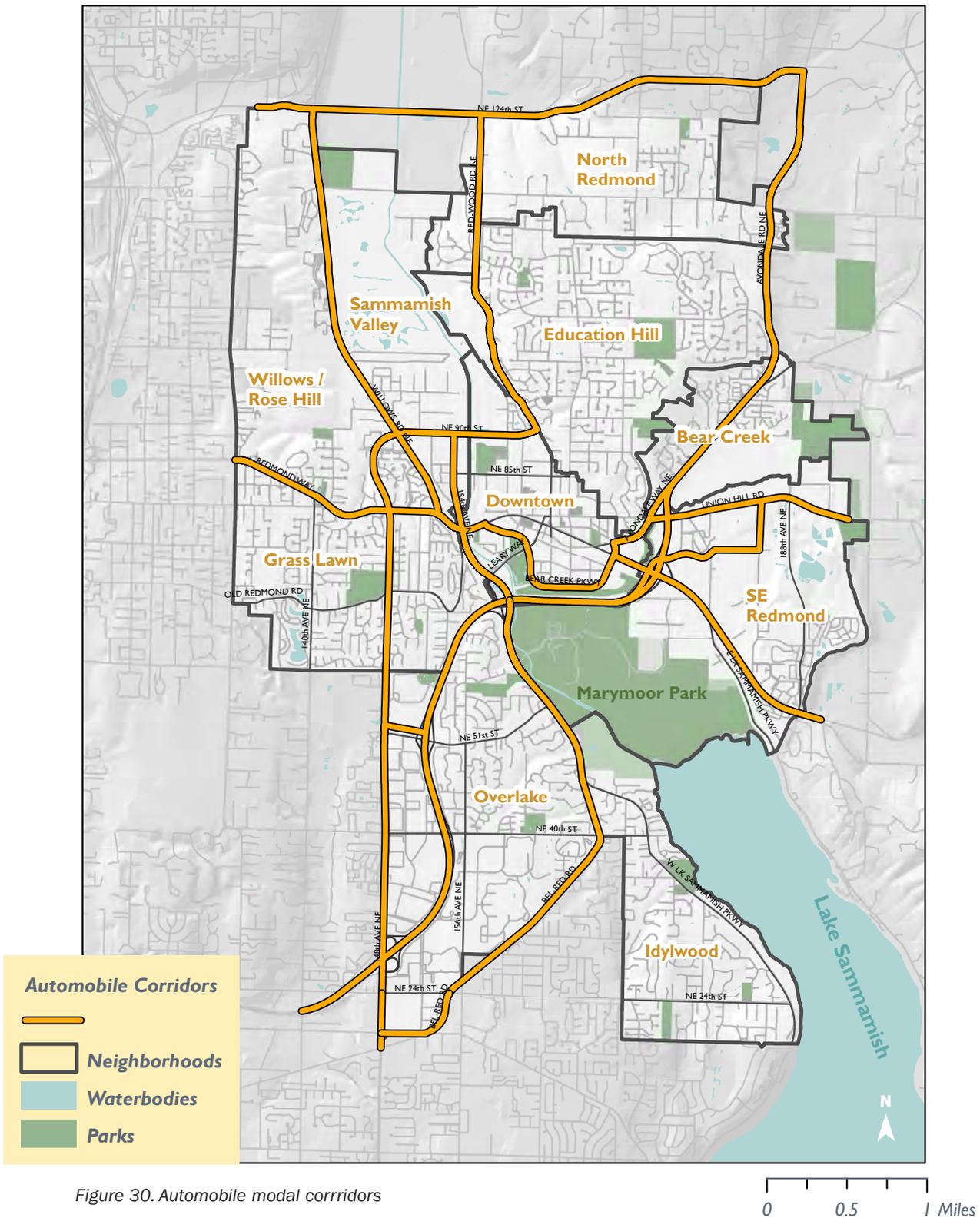


Figure 30. Automobile modal corridors

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.

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.

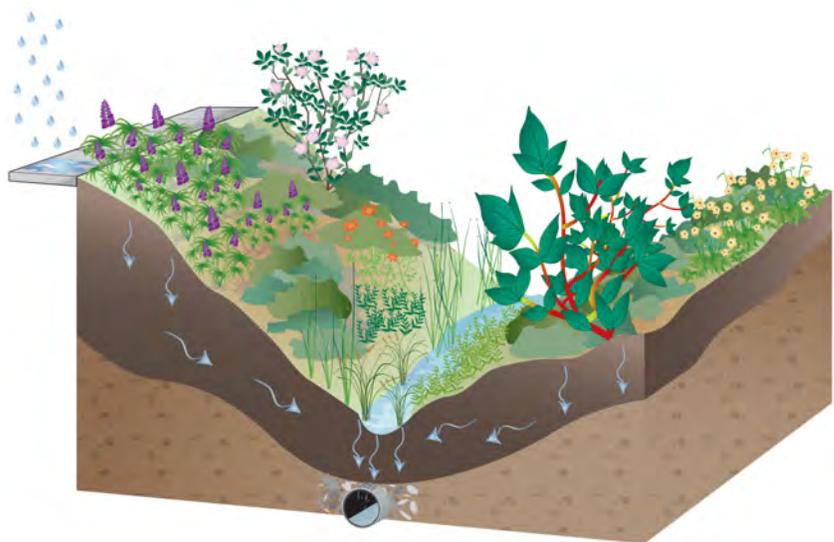
Narrow streets encourage lower travel speeds, reclaiming the street and right-of-way for all users. Redmond will ensure that all modes are adequately accommodated within city street corridors consistent with the City's "Complete Streets" policy. This includes appropriate accommodations for trucks, transit, 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

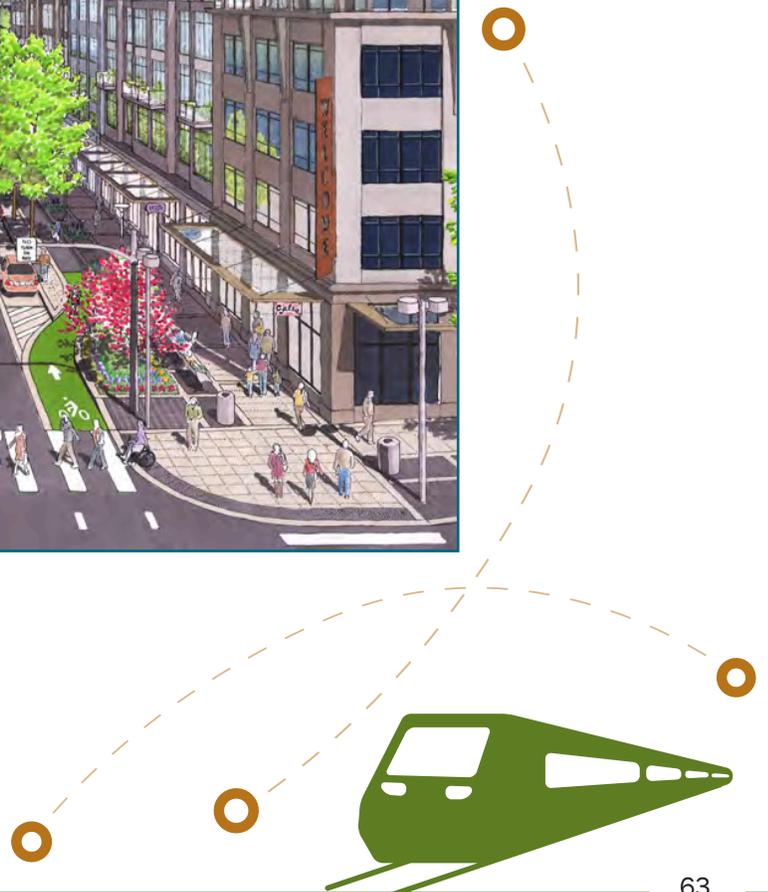
and interaction. These streets will be able to support high-density residential livability and a strong local business environment.

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 destinations.
- 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.

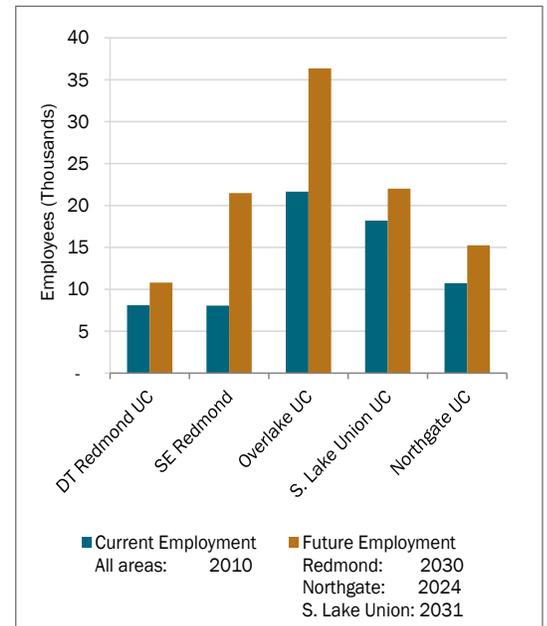
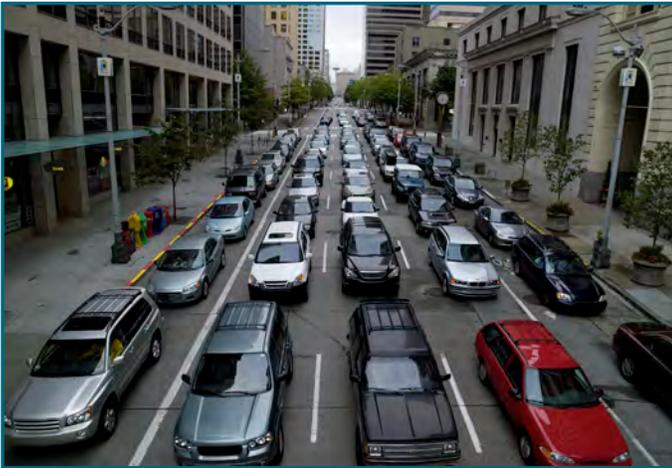


Figure 32. Employment growth



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

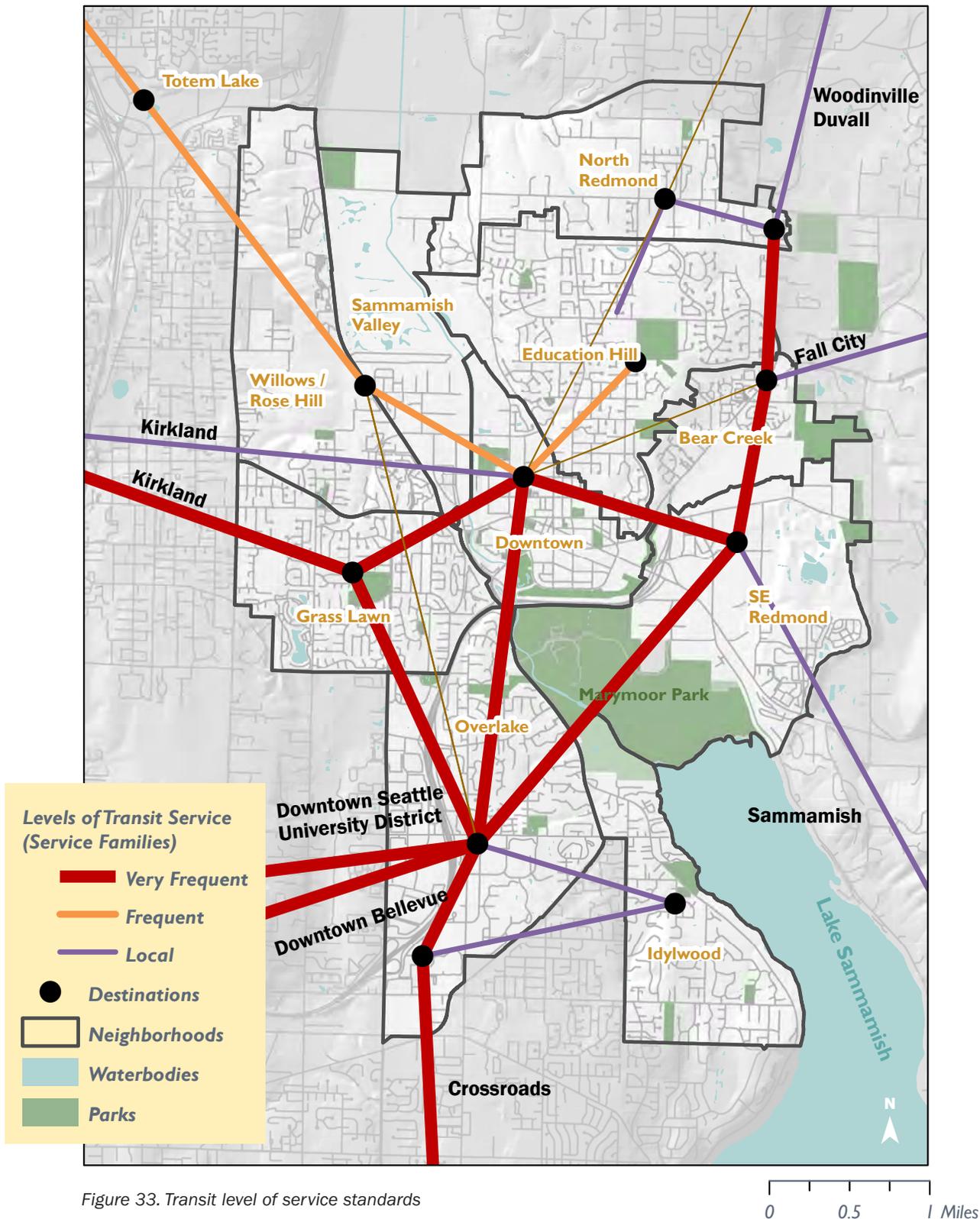


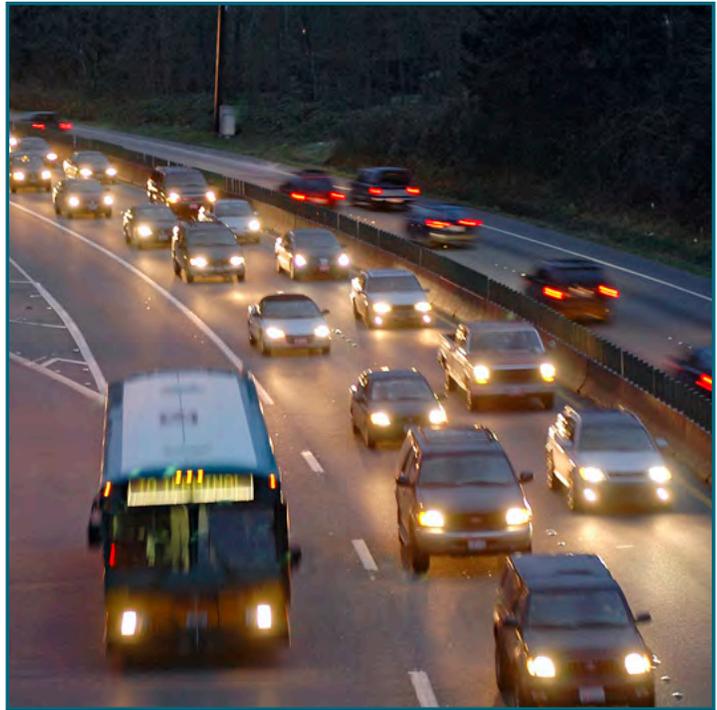
Figure 33. Transit level of service standards

“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

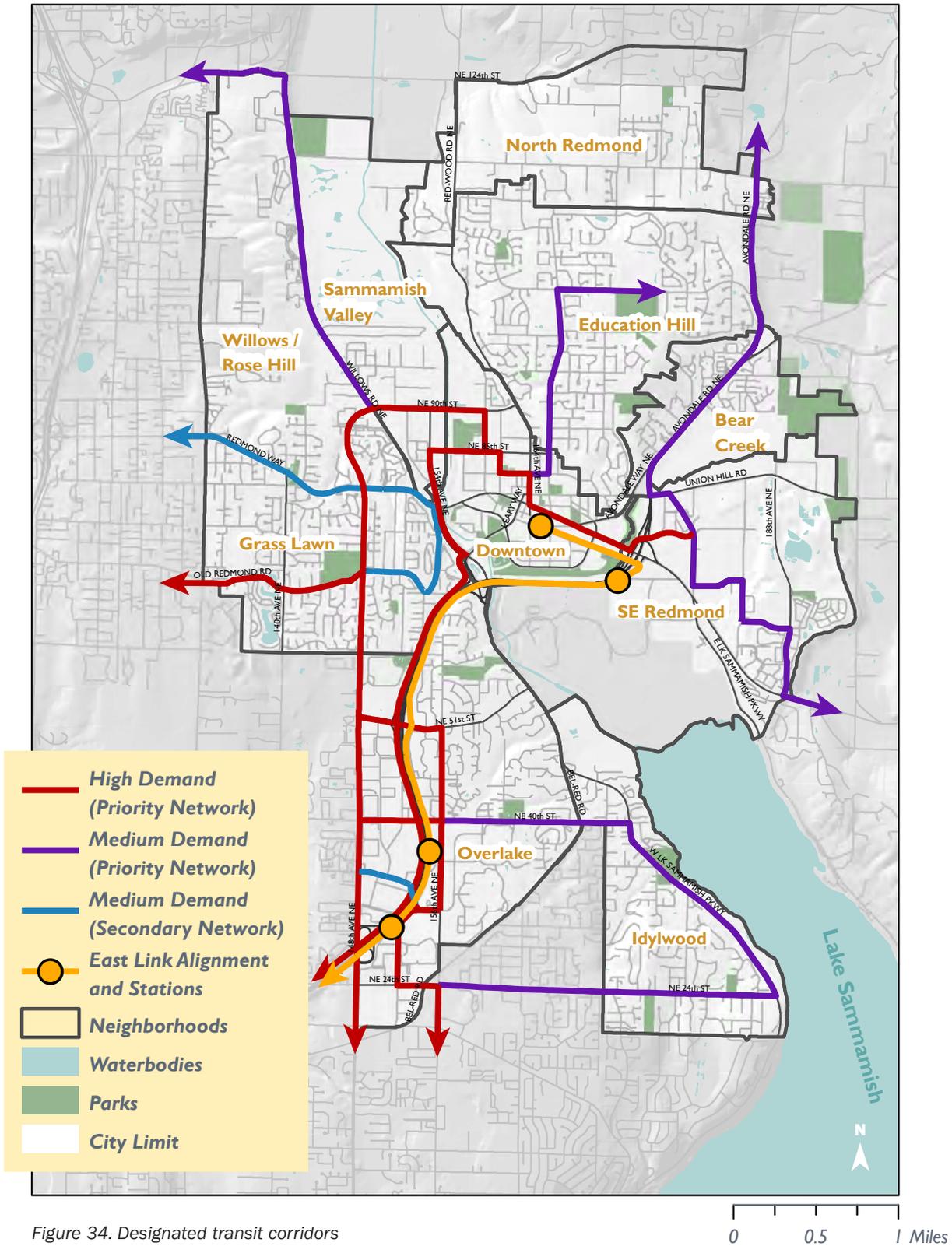


Figure 34. Designated transit corridors

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

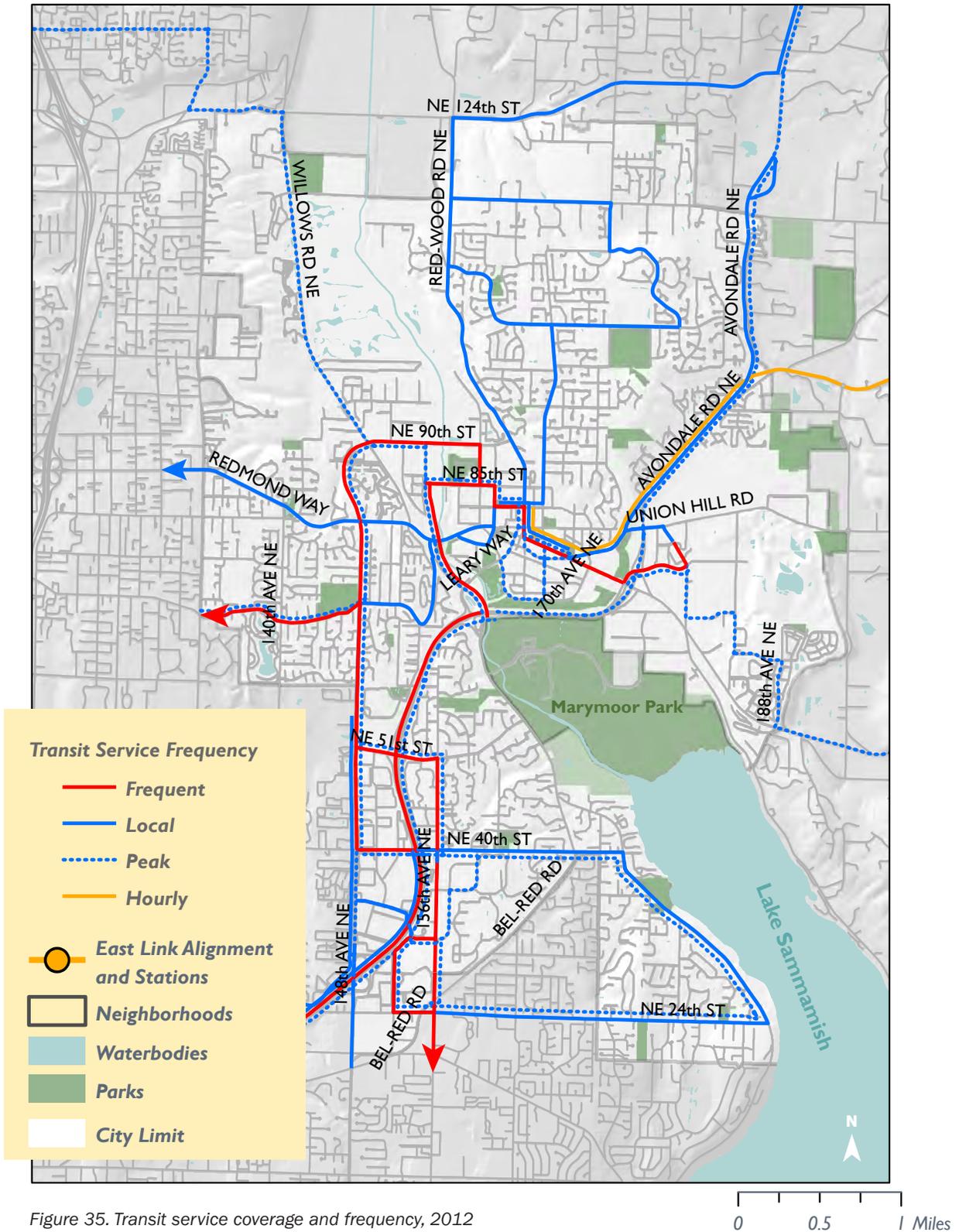


Figure 35. Transit service coverage and frequency, 2012

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-	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-	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-	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

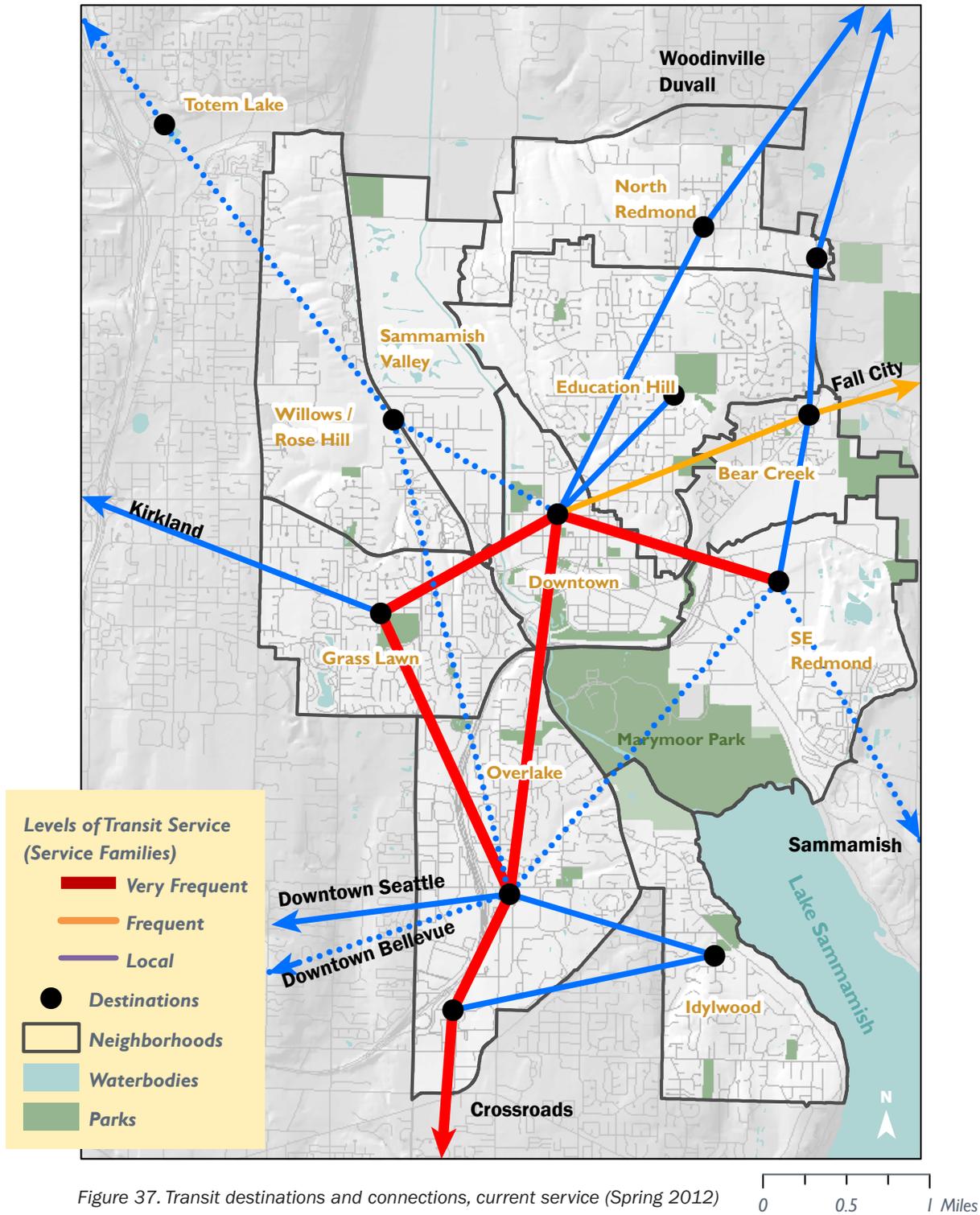


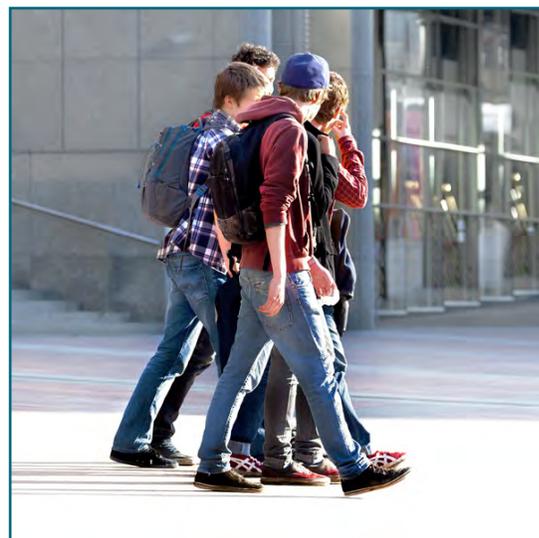
Figure 37. Transit destinations and connections, current service (Spring 2012)

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

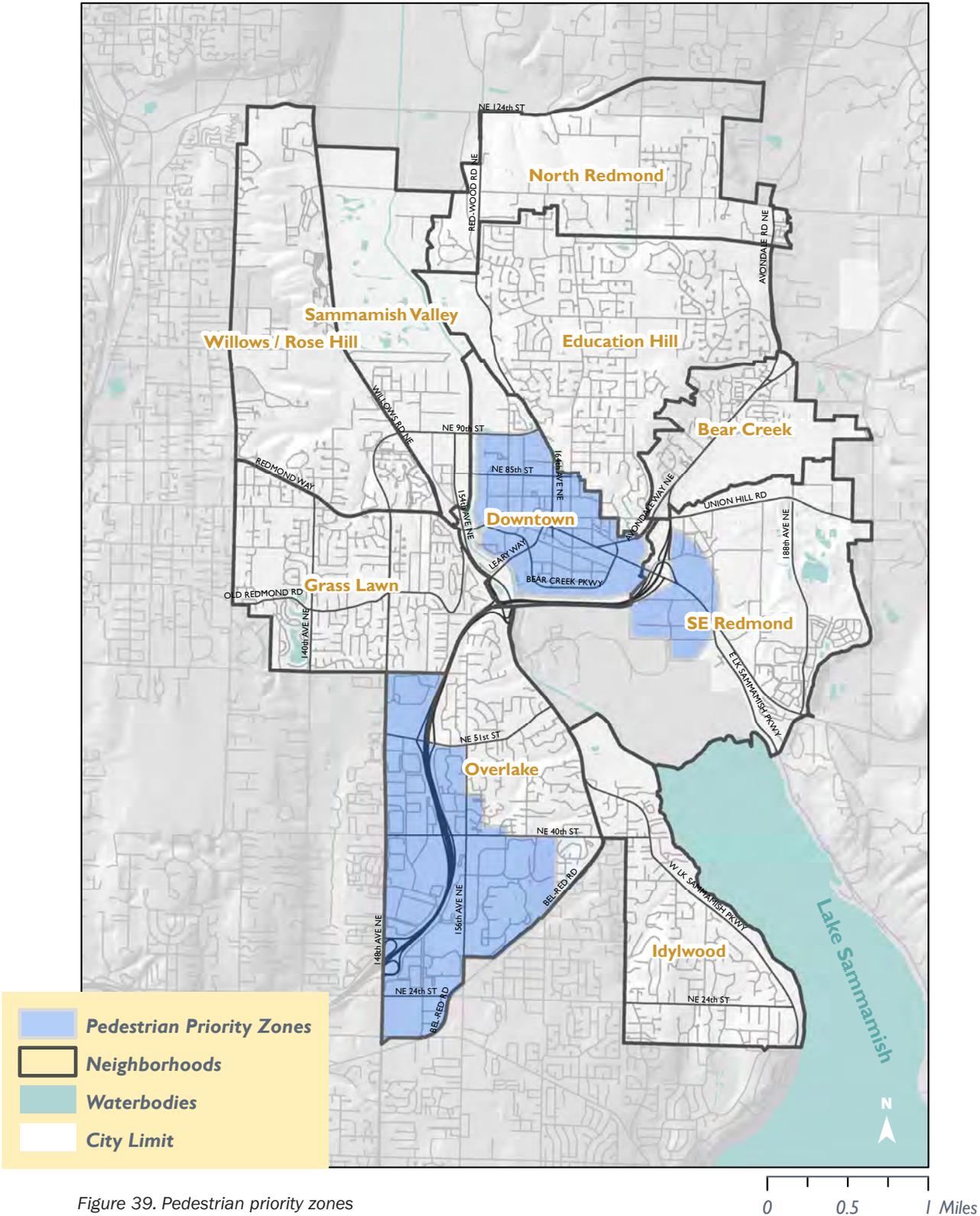


Figure 39. Pedestrian priority zones



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.

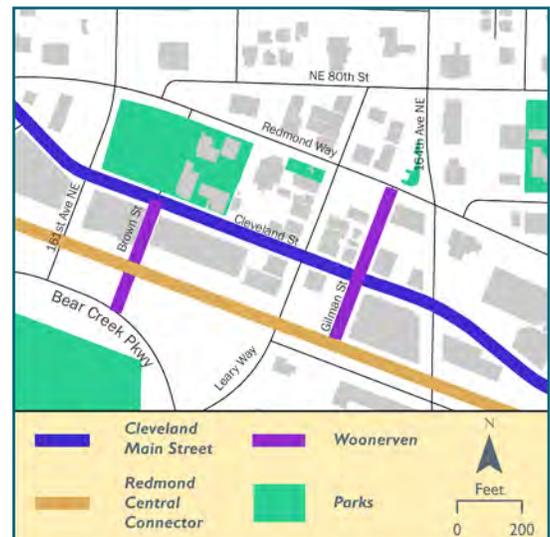
The close proximity of these facilities will create a memorable experience that draws in the Redmond community and regional visitors again and again.

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

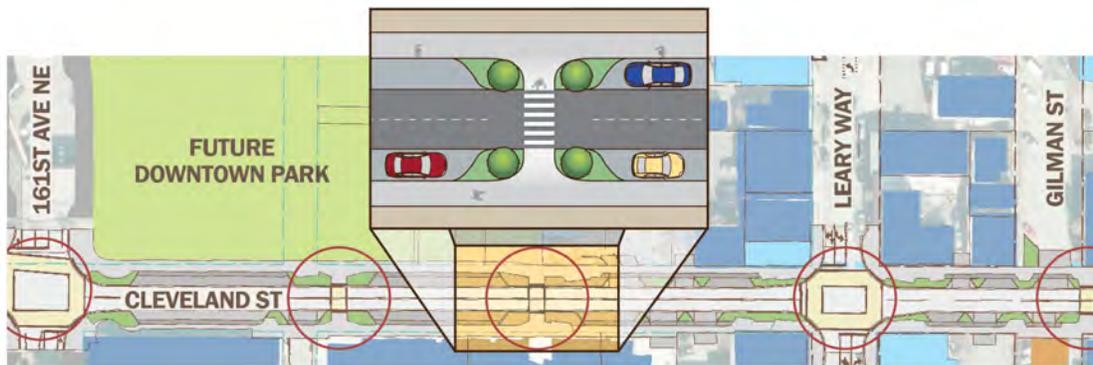


Figure 40. Pedestrian-friendly crossings in Downtown Redmond

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.

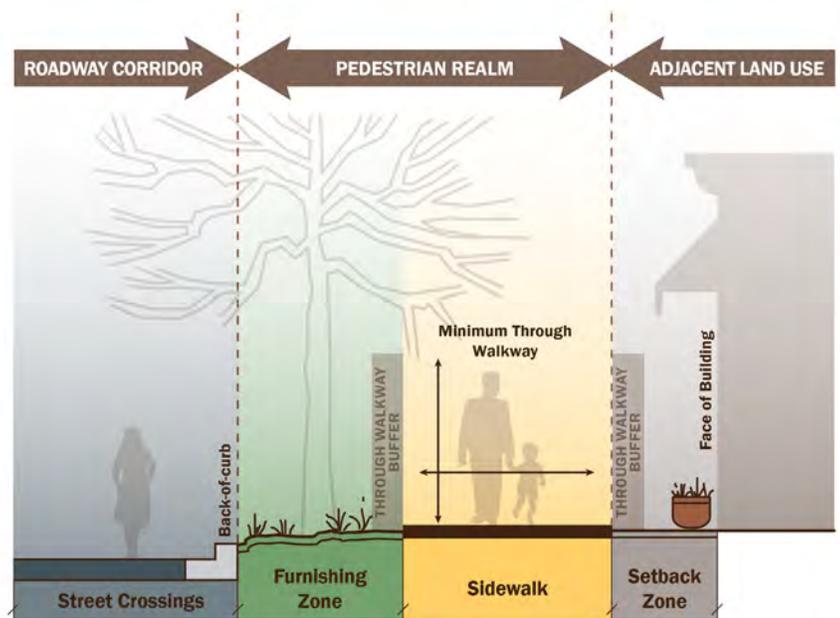


Figure 41. Cross section of the pedestrian realm

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

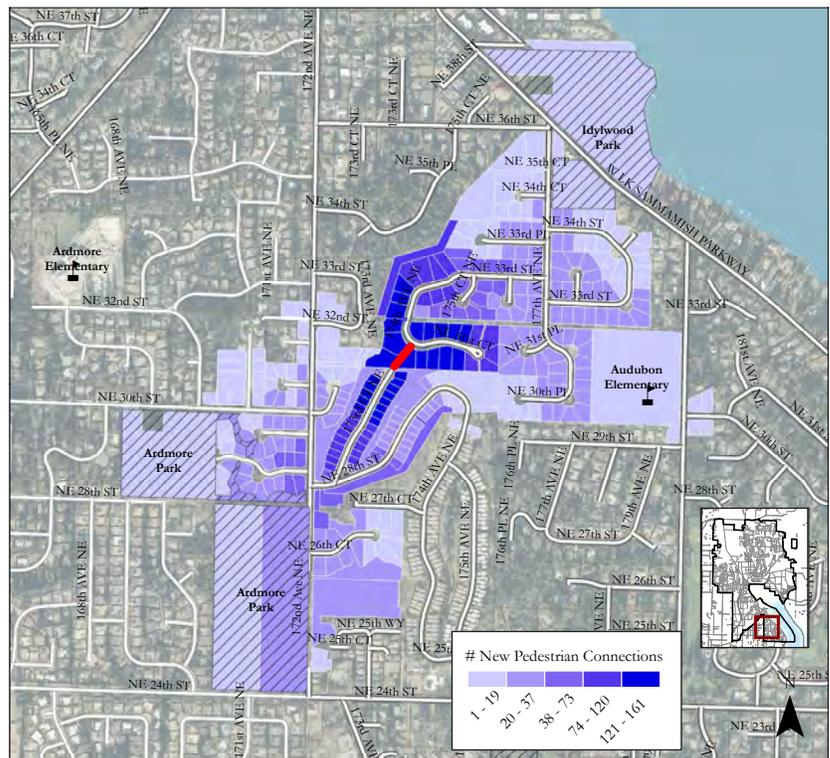


Figure 42. Walkability benefits of the NE 31st Court Trail

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.

American 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

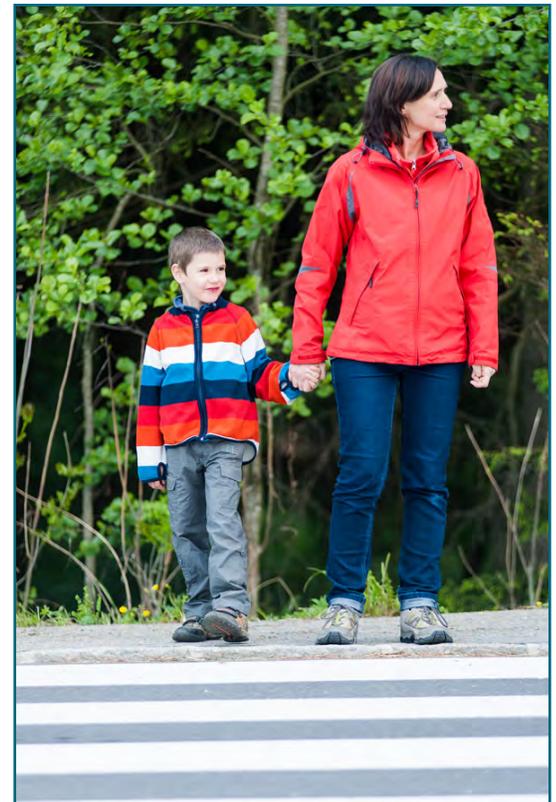
The vision for the pedestrian system will be achieved by:

- 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.”

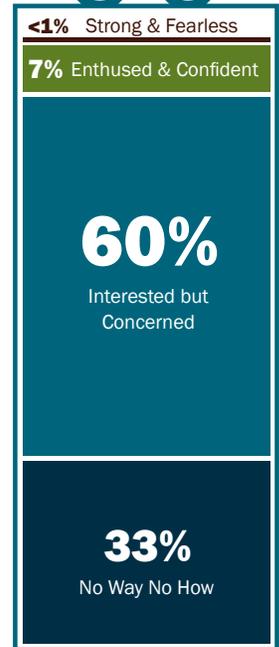
Through decades of investment, Redmond has developed many miles of bicycle lanes and paved shared-use paths. The city is at a crossroads with an incomplete, disconnected network which substantially reduces the safety, comfort, and usability of the current bicycle system and is a major barrier to increasing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

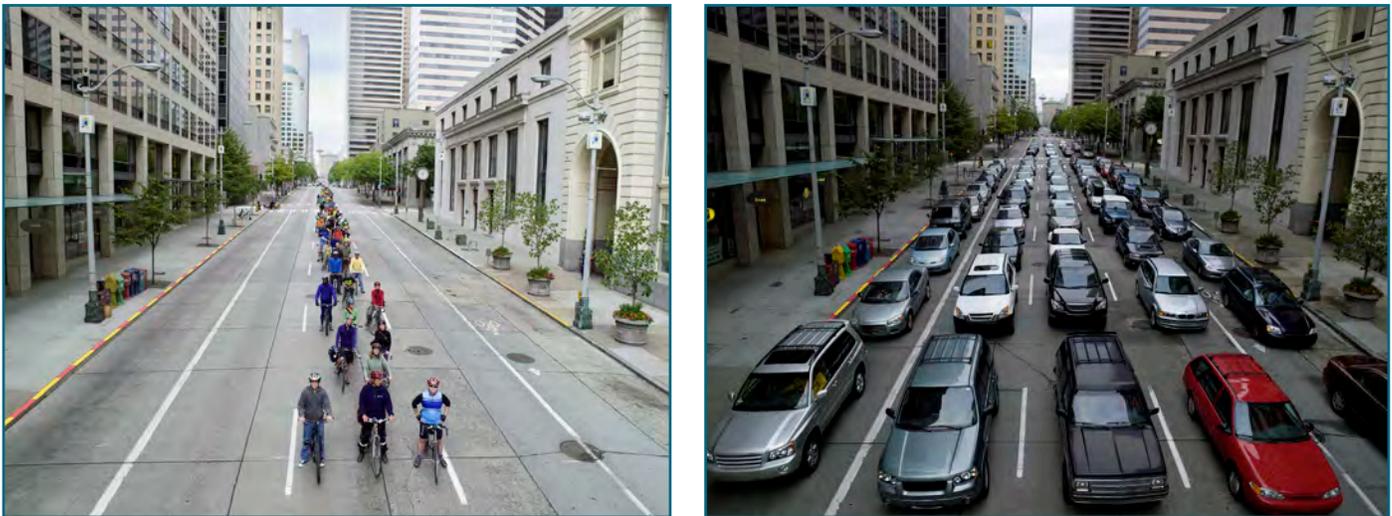


Figure 43. Spatial efficiency (image source: i-Sustain)

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

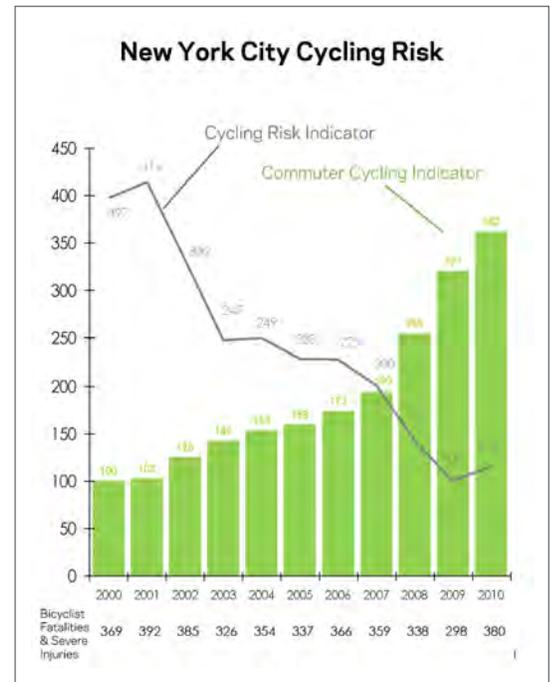
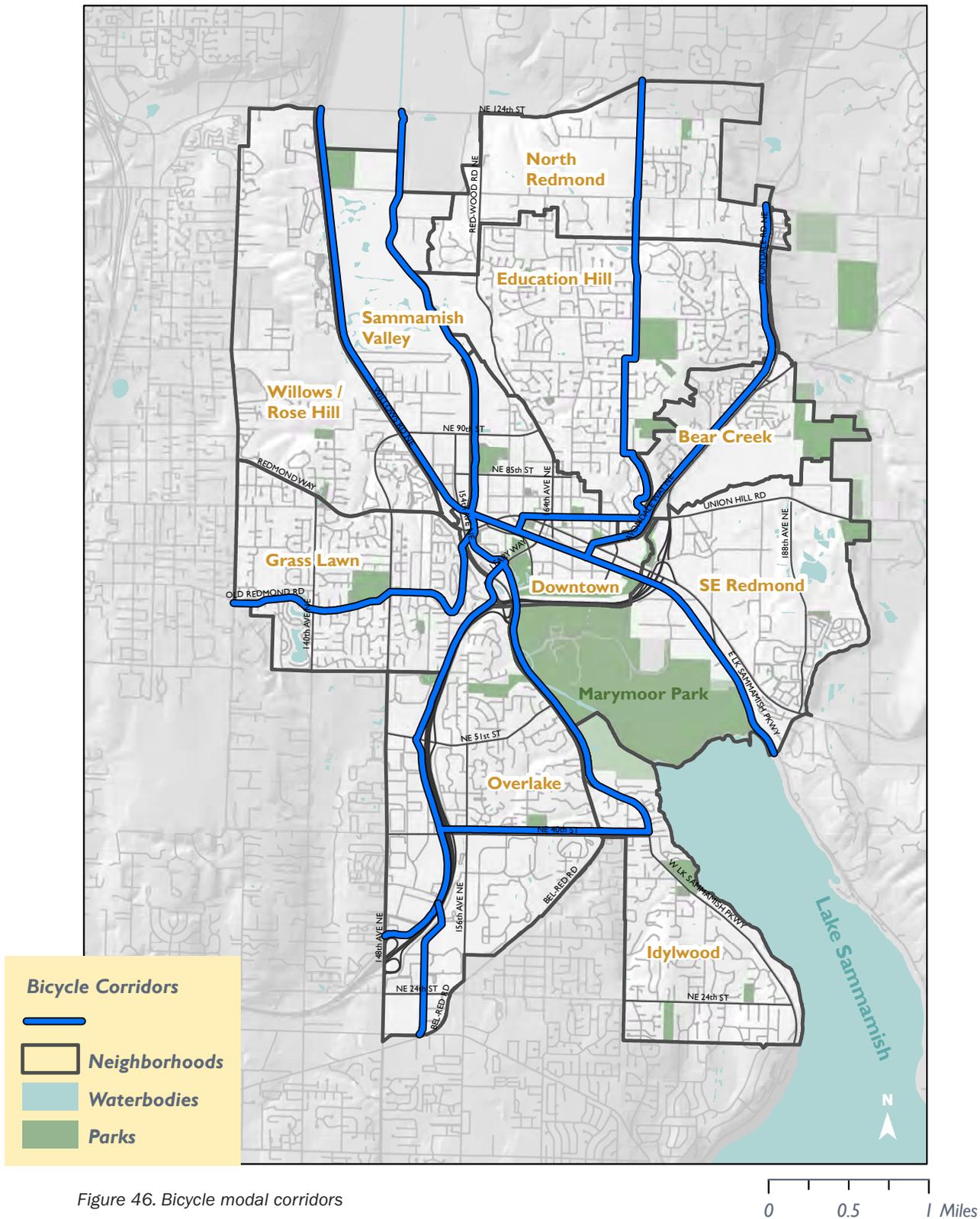


Figure 44. Collision rates have decreased by 71 percent in New York City as commuter bicycling rates tripled



Figure 45. A cycle track. Image source: NACTO

Bicycle Modal Corridors



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

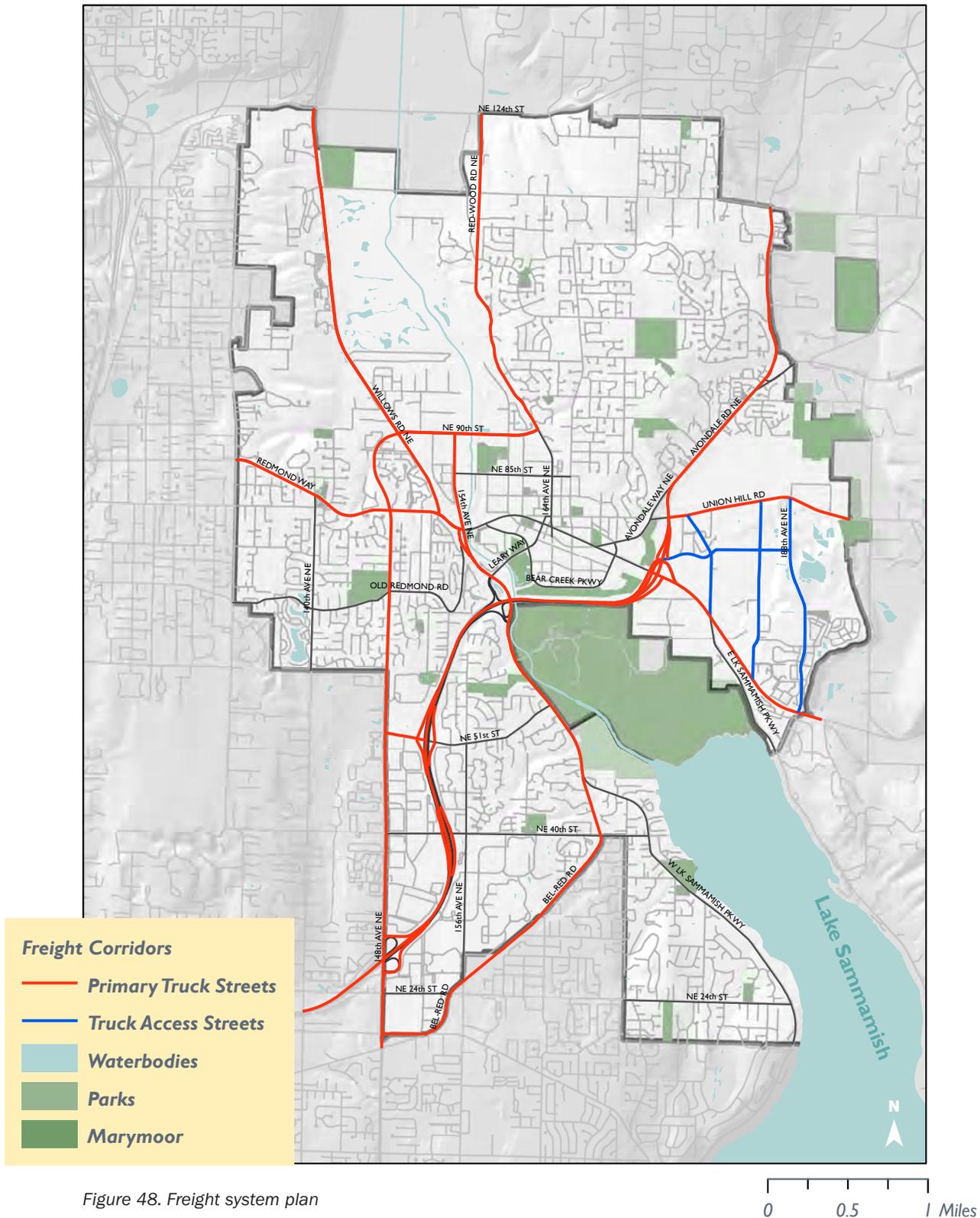


Figure 48. Freight system plan

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:

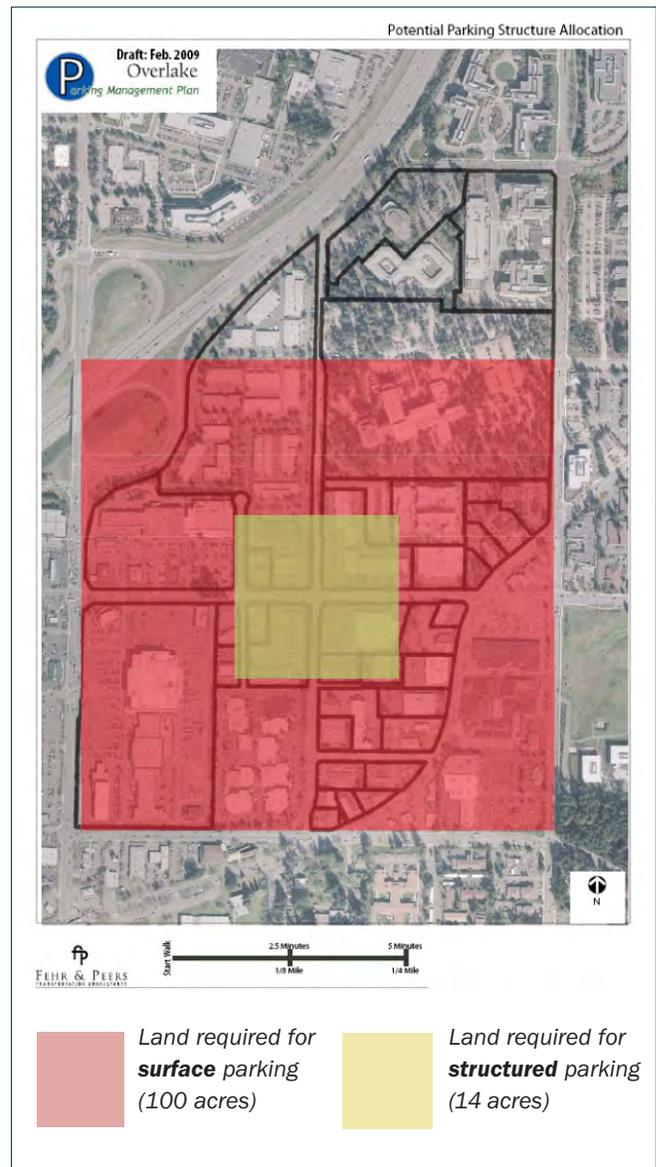
1. Reduce the total amount of parking needed to support development.
2. Seek to establish parking facilities that are designed and located to support our land use vision.
3. Manage parking to support and facilitate access to businesses, services, and residences.
4. Ensure that walking routes to and from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

⁴ Victoria 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.

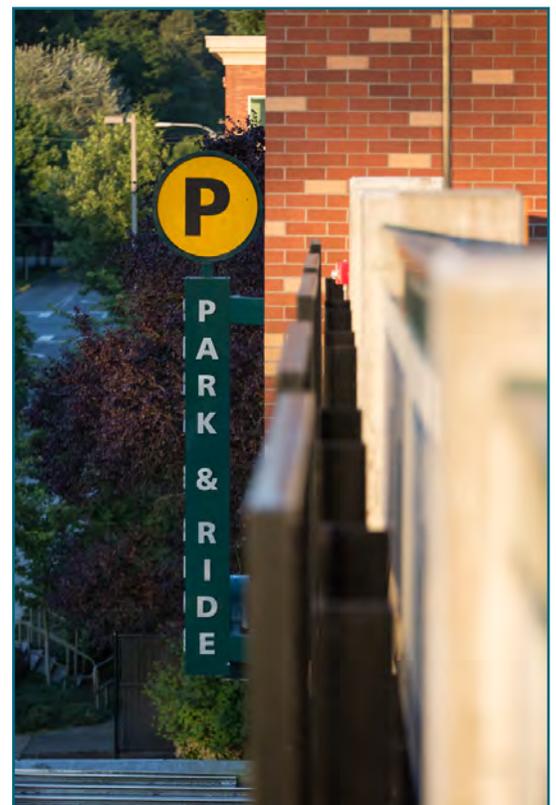
Establish Additional Shared Use Parking through Public-Private Partnerships

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

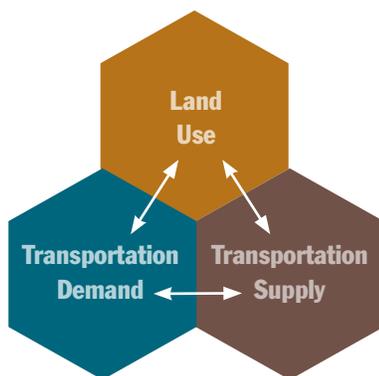
Realizing the City's vision will require an integrated, strategic approach to transportation that manages current and future transportation assets to maximize mobility, increase access, and support growth and development. The City, Redmond businesses, and the community have a strong track record of collaboratively 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

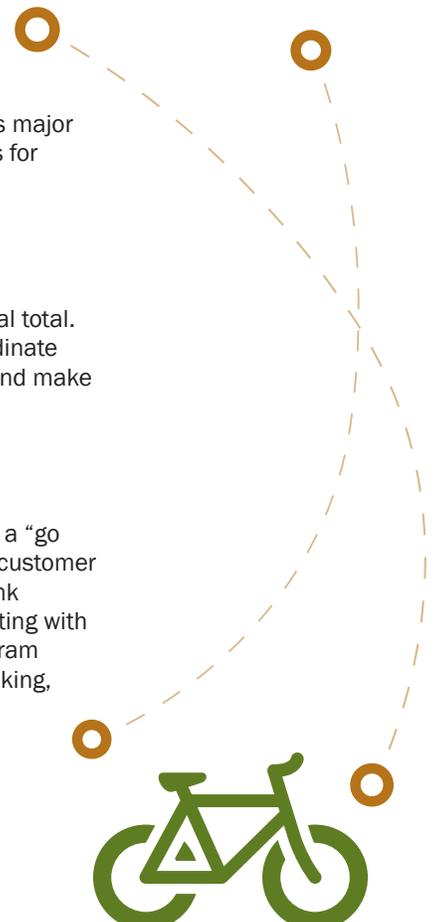
When significant transportation construction affects travel to, from, or within Redmond, such as major road closures, or construction on major highways or freeways, information about and incentives for alternative travel choices should be made available.

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:

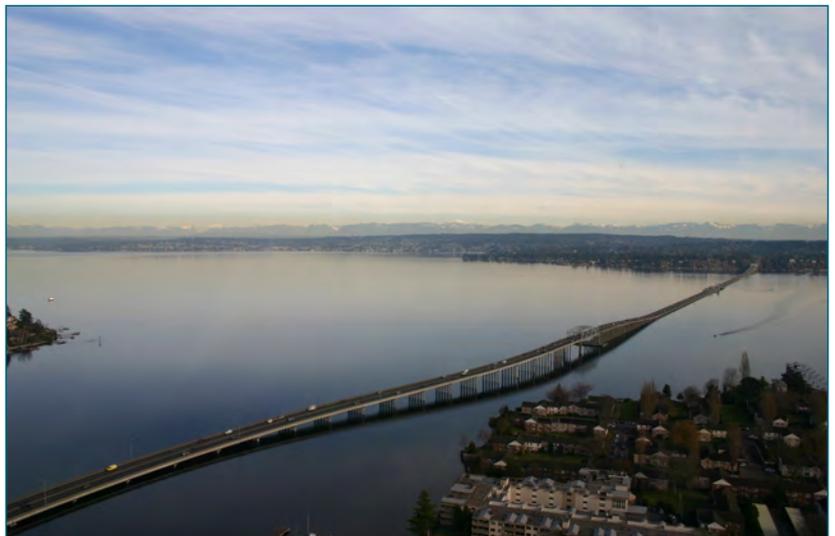
Regional Transportation

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

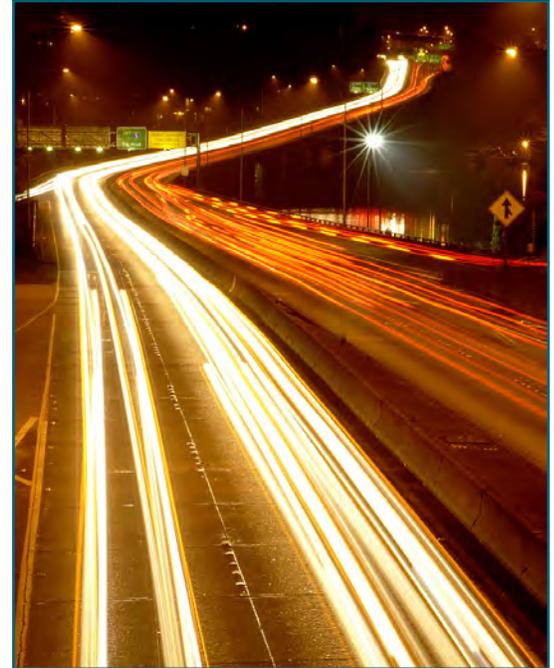
State Route 520 is Redmond’s primary regional transportation connection.

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

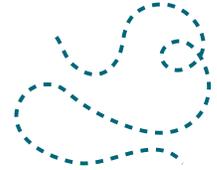
Support concurrent tolling of I-90 and SR 520 to fund capital improvements, manage traffic operations to reduce congestion, and minimize diversion of traffic to other highways and arterials.

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



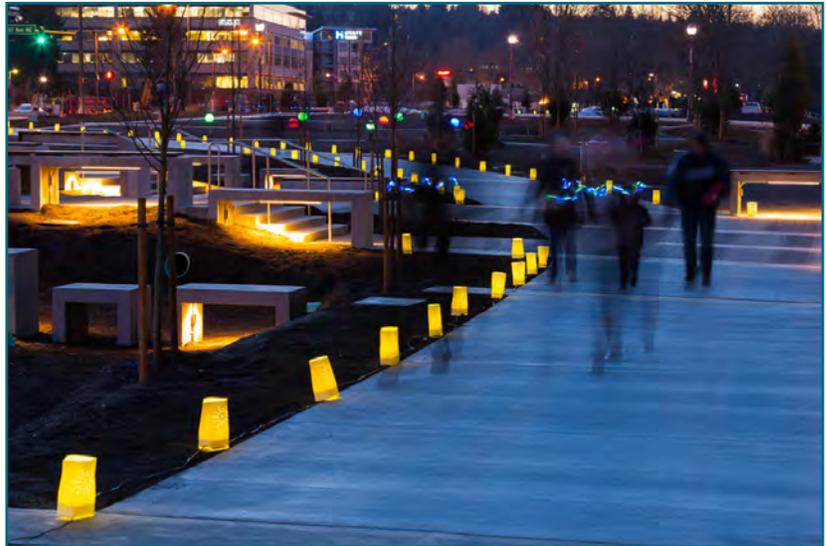
connections both as part of the street network and as separate trails that connect local and regional destinations. Existing regional trails in and around Redmond include the Sammamish River Regional, East Lake Sammamish, Tolt Pipeline, Redmond/Puget Sound Energy, Bridle Crest, SR 520, Evans Creek, and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

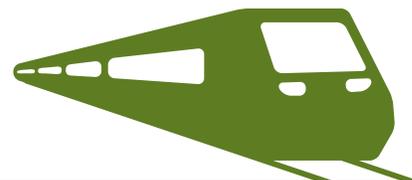
- Integrate traffic signals, transit preemption, alerts on electric signs, and navigation systems on local and regional arterials.
- Study the extension of automated traffic management (ATM) systems for the region, beyond use on freeways, but also for transit and arterial operations.

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 improvement 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.

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

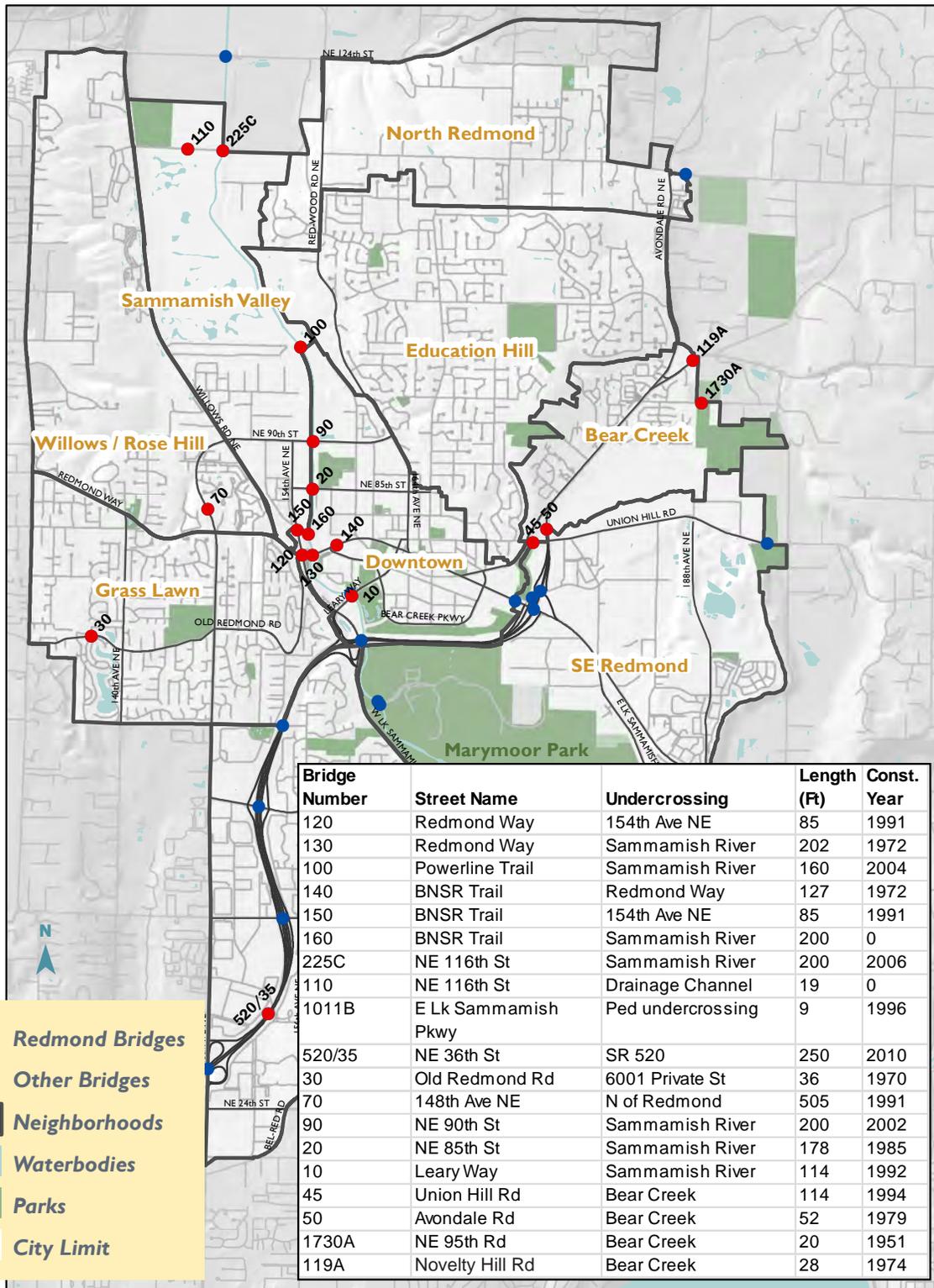


Figure 49. Redmond bridges

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.
- 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.

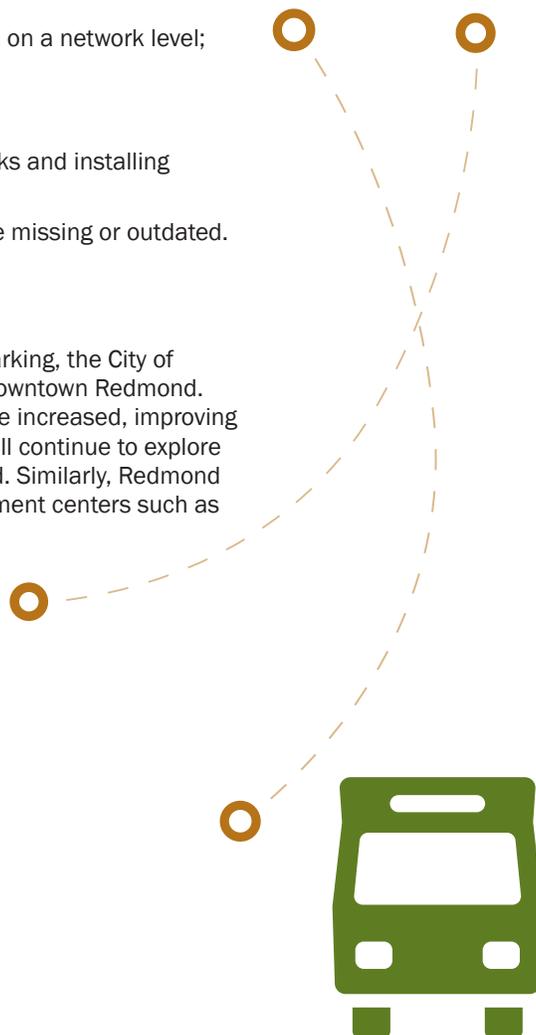
To improve its ITS as a tool in managing traffic and providing travelers with up-to-date traffic information, Redmond will explore the following:

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)

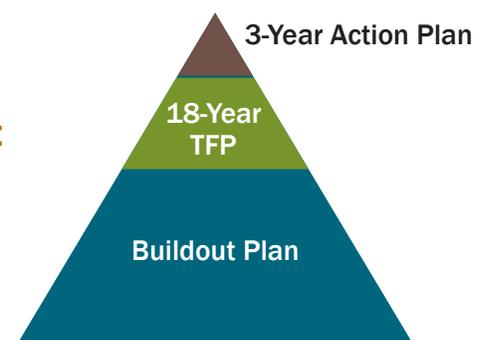


Figure 50. Relationship among the Buildout Plan, TFP, and Three-Year Action Plan

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	11%	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	9%	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	34%	Transportation impact fee cash payments by developers; or construction value by developers
Developer Contributions	54.3	14%	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	5%	Funds brought forward; net of debt payments, non-tfp projects and overhead
	389.0	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.

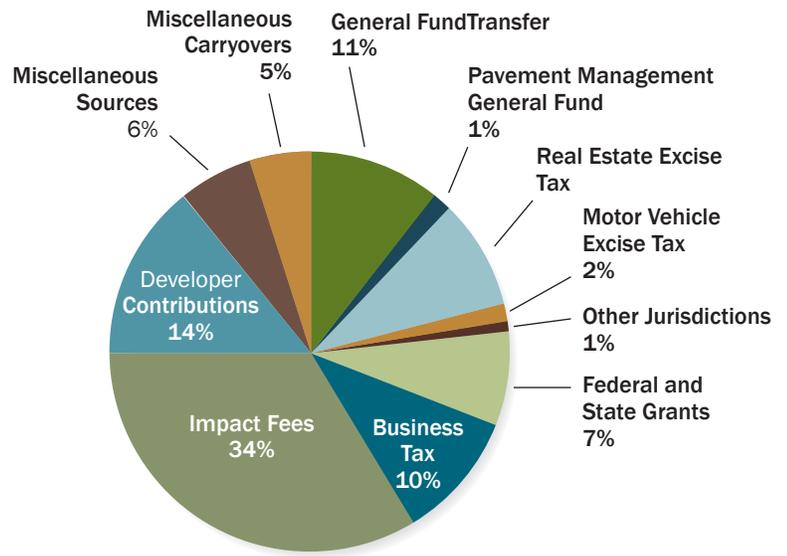


Figure 51. TFP Revenue Forecast, 2013-2030

- **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).

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 stand-alone 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 12, page 148) but are not mapped. See Appendix H for expanded definitions of TFP projects.

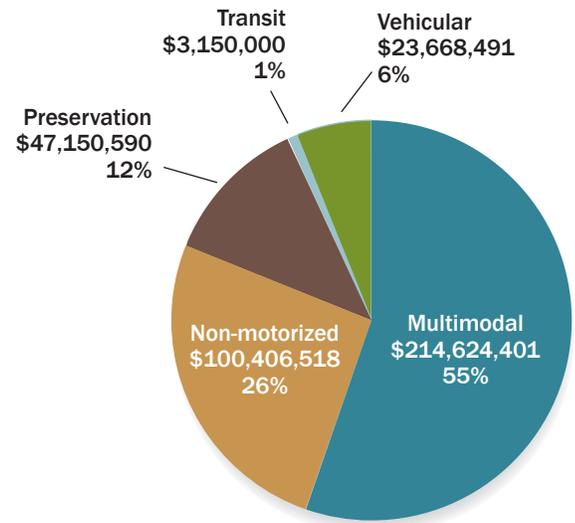


Figure 52. TFP Investment by category

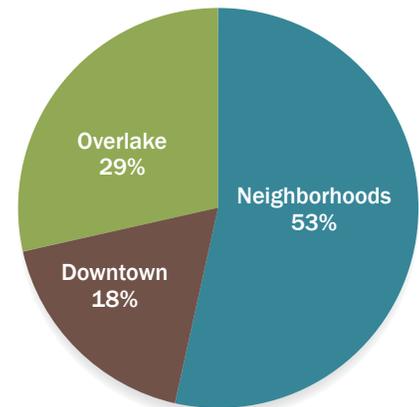


Figure 53. TFP project distribution by area

Downtown Transportation Facilities Plan Projects

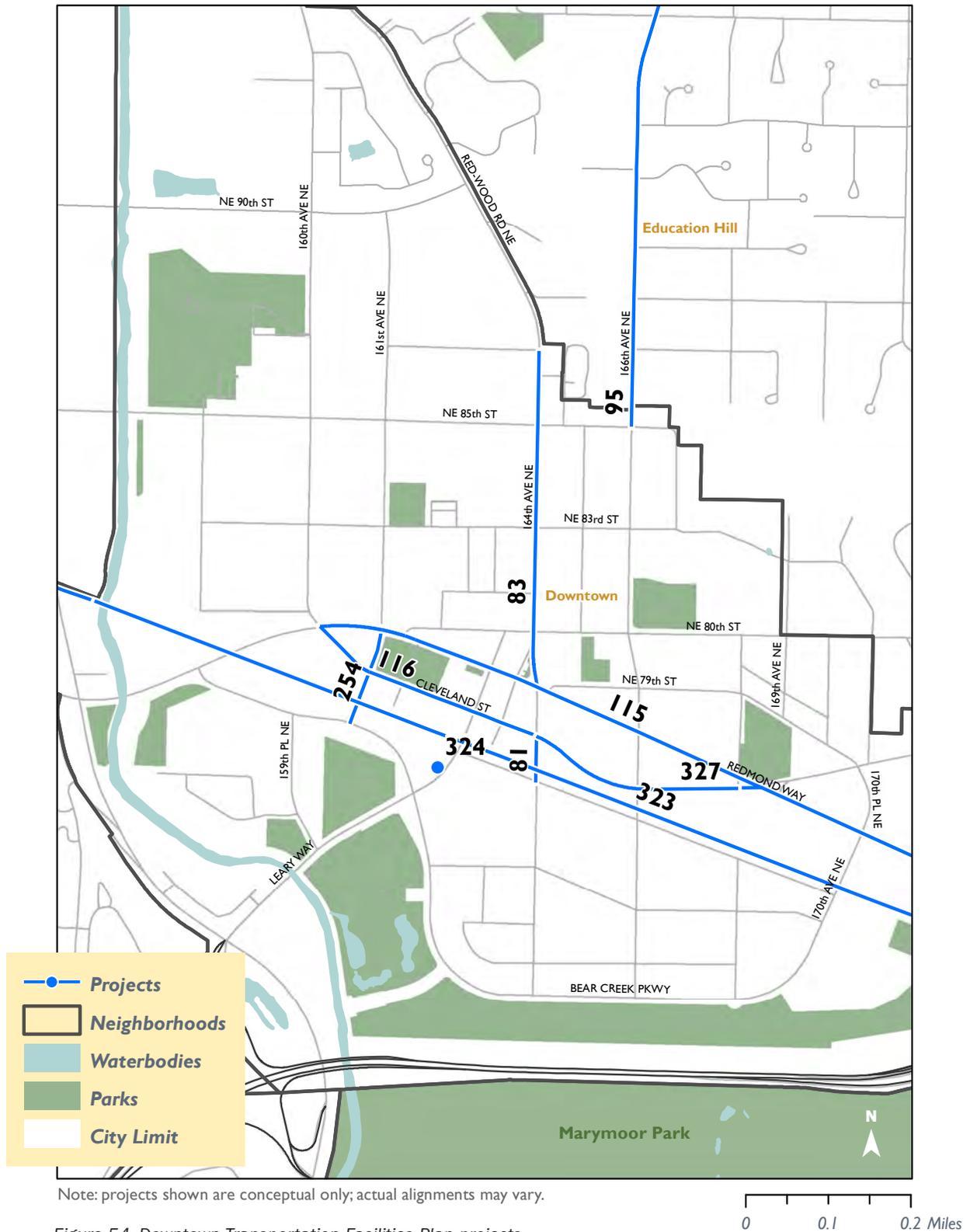


Figure 54. Downtown Transportation Facilities Plan projects

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
Downtown TFP Project Cost					\$41,121,764	

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
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

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 (continued)						
ID	Name	Description	Expected	Significant Support For These Strategies	Cost Estimate	Source
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
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 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

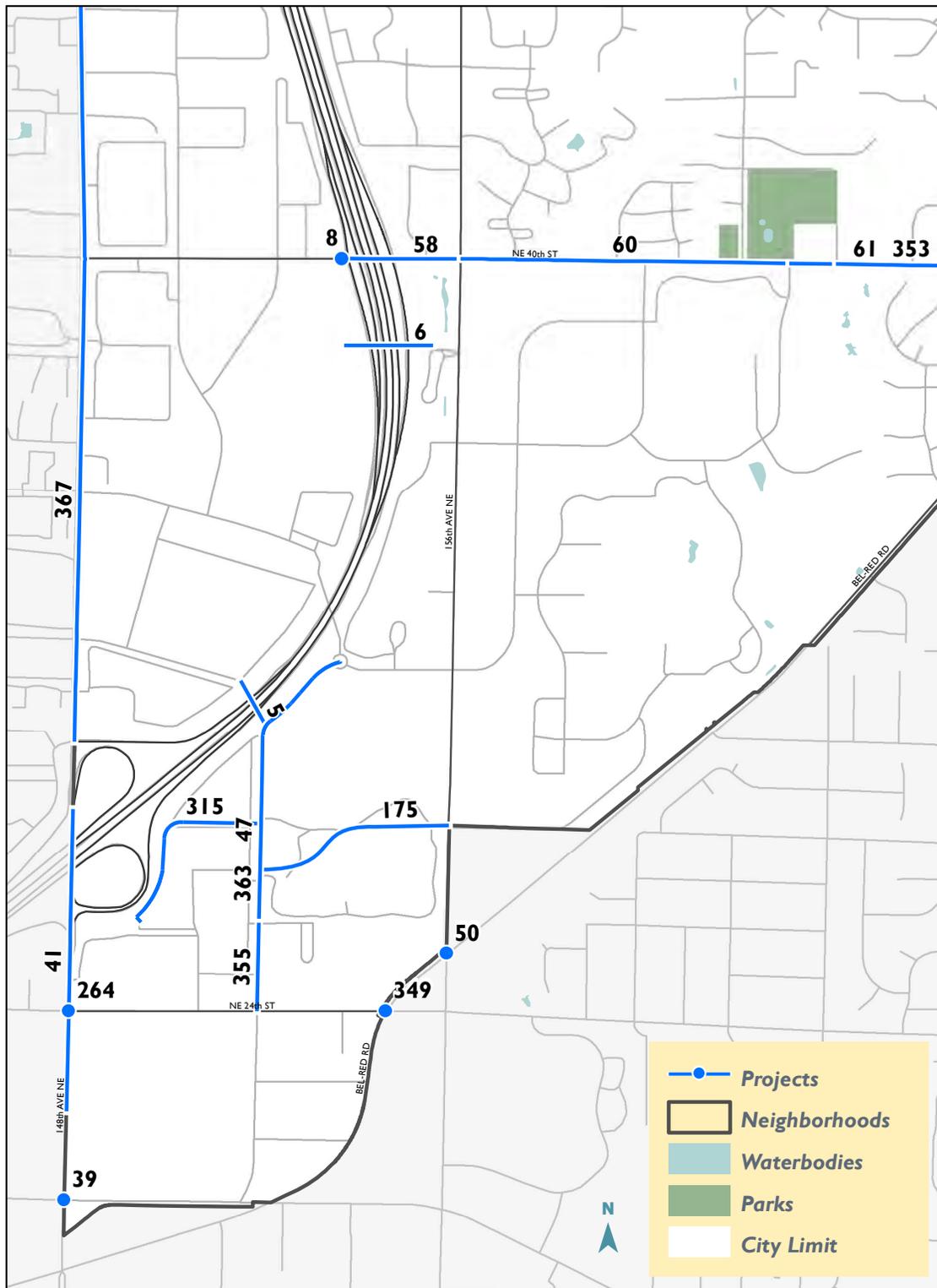
LEGEND: 1 Support for Urban Centers 2 Neighborhood Access 3 Travel Choices & Mobility 4 Prepare for Light Rail 5 Support Freight Mobility

Table 10. Overlake TFP Projects (continued)

OVERLAKE						
ID	Name	Description	Expected	Significant Support For These Strategies	Cost Estimate	Source
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
Overlake TFP Project Cost					\$116,870,000	

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

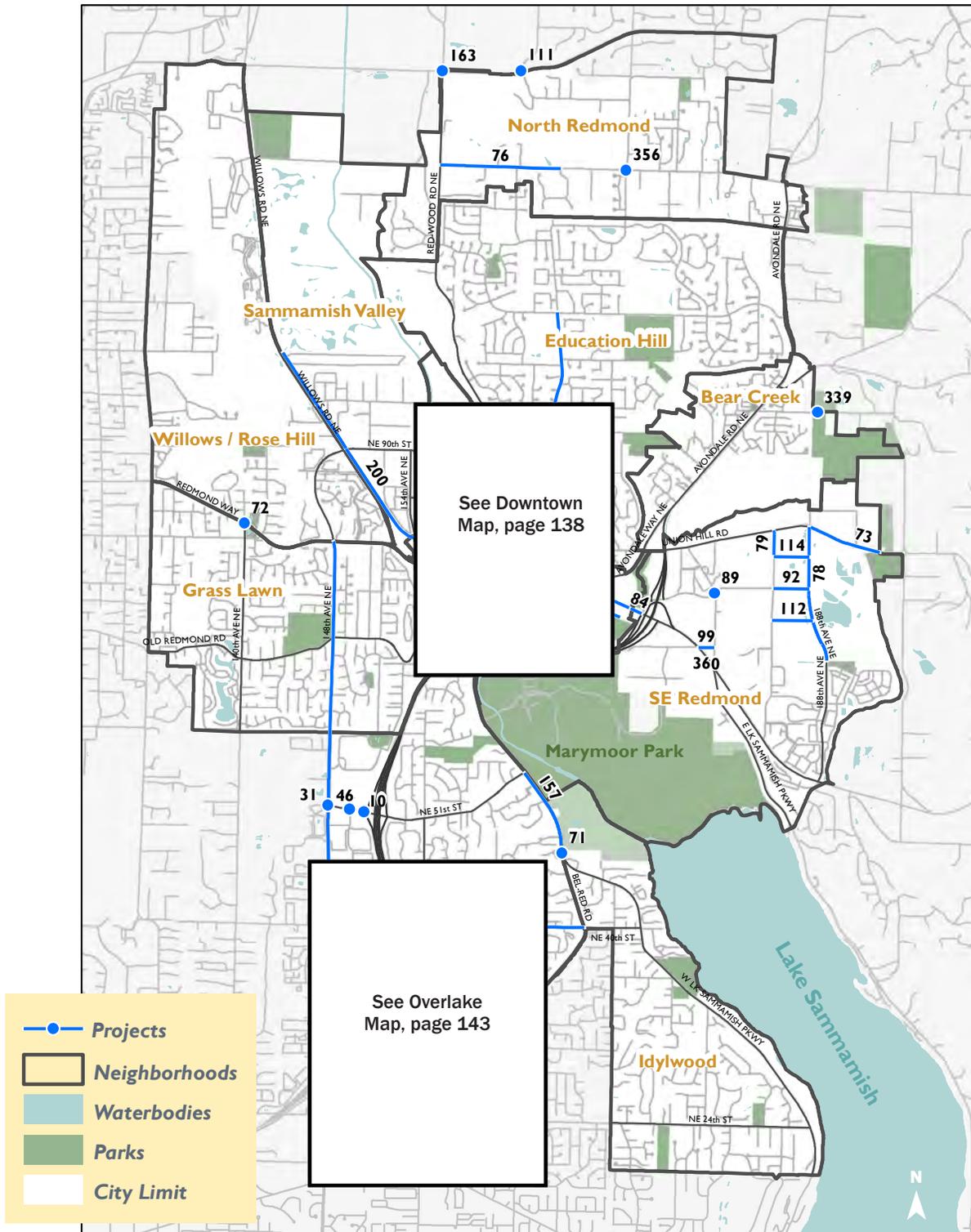


Note: projects shown are conceptual only; actual alignments may vary.

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 Widening 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.	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 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 Programs (continued)

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: \$267,686,900						
Total TFP Cost Including Projects and Programs: \$389,000,000						

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.

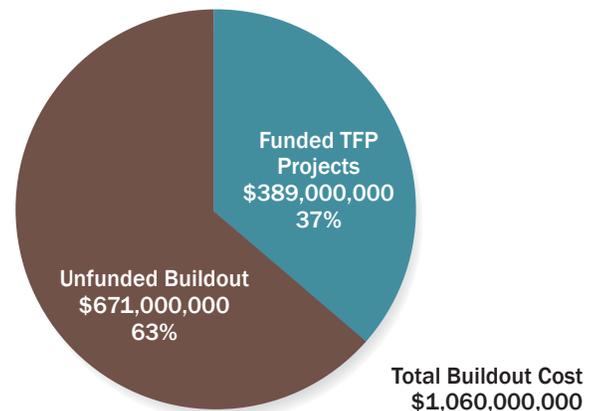
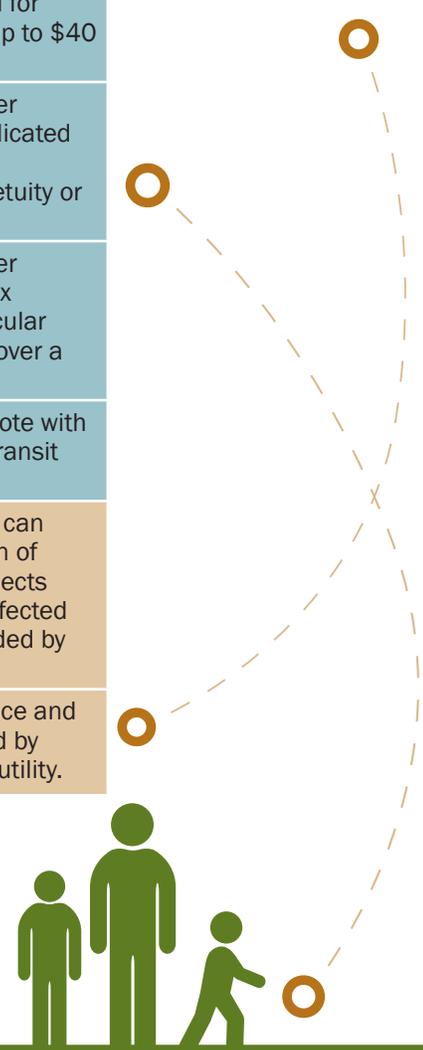


Figure 57. Funded portion of Buildout Plan

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.



Chapter 8:

Three-Year Action Plan

Introduction

The Three-Year Action Plan identifies and schedules the most important action items to implement from the Transportation Master Plan (TMP) and covers the period between 2013 and 2015. This short-term action-oriented approach is critical to delivering the TMP or any other long-term plan. Action items beginning within the first three years of the plan will set the course for successful implementation of the entire plan.

This Three-Year Action Plan has identified 50 specific action items critical to advancing the transportation vision and creates the framework for the City's transportation work plan from 2013-2015. This work plan will be updated in 2015 to maintain the useful life of this TMP update of six years.

The Action Plan has five categories:

- **Ordinances and Council Actions** – updates and revisions to ordinances and other Council actions related to the plan.
- **Studies and Plans** – transportation studies, corridor plans, subarea plans, major analytical work, and regional planning.
- **Advance Project Development** – conceptual planning and preliminary design to strategically position specific projects for grant competitions, help secure other funding sources, and coordinate with other City projects.
- **Major CIP Construction Projects** – most strategically important City Capital Improvement Program (CIP) projects to begin construction in the next three years.
- **Projects by Developers and Other Agencies** – most important developer projects and other agency projects to advance in the next three years.



Proposed Three-Year Action Plan Items

Ordinances and Council Actions (complete by noted timeline)

1. **Update Impact Fee Schedule for 2013-2030 Transportation Facilities Plan (TFP) (2013).** After adoption of the TMP, the transportation impact fee schedule in the Redmond Municipal Code will be modified by ordinance to be consistent with the plan recommendations.
2. **Update Concurrency Ordinance (2013).** After adoption of TMP, the concurrency ordinance in the Redmond Zoning Code will be updated to reflect the 2013-2030 TFP and 2030 Land Use Targets.
3. **Update Designated Freight Routes (2013).** The Washington State Freight and Goods Transportation System (FGTS) is a database of the State's freight corridors, including highways, county roads, and city streets. The FGTS is used to establish funding eligibility for various regional and federal grants. The City of Redmond will work with WSDOT to update the designation of eligible Redmond streets in the FGTS.

- 4. Reconcile Zoning Code with TMP Update (2014).** After adoption of the TMP, the Redmond Zoning Code will be updated to be consistent with relevant content of the TMP. For example, one element is to examine the Downtown pedestrian system to be consistent with TMP strategies.

Studies and Plans (begin)

- 5. Recommend Funding Levels for TFP Programs (2013).** Separate from the TMP update, a needs and level-of-service analysis for 2030 will be conducted for each of the 15 TFP programs to determine what will be accomplished with current levels of funding and to recommend appropriate funding levels consistent with the framework strategies, community priorities, and dashboard measures.
- 6. Create an e-TMP (2013).** Create a web-based version of the TMP with interactive maps and links throughout the document. With regular updates, the e-TMP will be the “go-to document” for important information related to transportation in Redmond.
- 7. Citywide Wayfinding Standards for Cyclists and Pedestrians (2013).** Provide wayfinding signage on major bicycle corridors that connect cyclists to their destinations to improve usability of a complex bicycle network and encourage bicycle use. Add pedestrian wayfinding to the Downtown interior pathways.
- 8. Develop a Transit Strategic Plan (2013).** Develop a Transit Strategic Plan that establishes long-term priorities and strategies, as well as identifies specific short- and medium-term actions and an implementation timeline. Focus areas include actions to support neighborhood connections to Redmond’s two urban centers, provide increased mobility to support growth and economic vitality, and develop transition strategies for the arrival of light rail in Overlake.
- 9. Local Circulator Proof of Concept (2013).** Identify options to diversify local transit circulation and evaluate the dimensions (partnerships, funding sources, operational options) for a local circulator. Identify operational needs, opportunity areas, and necessary conditions for success.
- 10. Urban Centers TDM Implementation Strategy for Growth Transportation Efficiency Centers (2013).** Develop a framework and implementation plan 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 an urban environment. Elements include a performance-oriented commute options program and a consultant-assisted survey of travel option use and opportunities in urban centers.
- 11. Evaluate Transportation Funding Needs and Options (2013).** Identify funding options for several key transportation needs, including ongoing preservation, maintenance, and operations; specific projects in the Overlake Village area including the Overlake Access Ramp, 152nd Avenue NE Corridor, and the Overlake Village Station Pedestrian/Bicycle improvements; and near-term SR 520 improvements.
- 12. Recommend Appropriate Actions for an Arts Policy for Transportation Improvements (2014).** The existing City of Redmond “One Percent for Art” policy does not include a requirement for transportation projects. King County and other cities such as Seattle and Bellevue do require transportation projects to be included in an arts policy. The City of Redmond has included art on some of its bridge projects (examples are NE 90th Street Bridge, York Bridge, NE 36th Street Bridge) and several other transportation facilities (examples are Redmond Central Connector and the retaining walls for the SR 520 and SR 202 westbound on-ramp). Without clear policy direction, budgeting for art and integration of art into the design of transportation projects has been inconsistent. The expected outcome for this analysis is to establish a clear policy for directing budget dedicated to art into transportation capital improvements.
- 13. Avondale Road Bicycle Facilities (2014).** Determine the future bicycle facilities on Avondale Road, considering facilities that provide greater comfort and safety from the high-speed, high-volume vehicle traffic, including the interaction between future cycle tracks and potential trail. This corridor has the highest number of bicycle collisions of any corridor in the city.



14. **Education Hill Bicycle Modal Corridor Route Study (2014).** Determine the route for the bicycle modal corridor between Education Hill and Downtown. Routes to be studied include Red-Wood Road and 171st Avenue NE/172nd Avenue NE.
15. **Bicycle Facilities Design Manual Update (2014).** Update the original Bicycle Facility Design Manual to include nationally used, innovative bicycle facilities such as colored bike lanes, bike boxes, and cycle tracks.
16. **Speed Limit Revision Study (2014).** Review speed limits on select corridors to consider the interests of all street users, including drivers, pedestrians, cyclists, and people with special needs. Emphasis will be on the urban centers and other key corridors to improve overall safety while maintaining mobility. An example candidate is 164th Avenue NE in Downtown, and the speed limit changes within the Downtown urban center. Consider a consistent speed limit that meets the vision of the Downtown urban center.
17. **Reconfigured Streets Guidelines (2014).** Develop guidelines that help resolve modal conflicts and balance overlapping needs within the street network, including vehicle, bicycle, transit, and pedestrian travel; parking, traffic calming, and greater separation for pedestrians; and needs for natural stormwater infiltration treatments. Potential cost impacts to the City and to developers should be evaluated. Incorporate results from the Lane Width Study, updated Downtown Parking Study, and Speed Limit Revision Study. Assess the role and function for city streets, with a focus on Downtown, determine appropriate cross-sections, and identify candidate streets for reconfiguration.
18. **Parking Study for Downtown, Overlake, and Southeast Redmond (2014).** Identify actions, implementation timeline, and transition strategies for parking to support the development of Redmond's two urban centers and the major employment center in Southeast Redmond. Elements include identification of parking management actions, evaluation and update of "right sized" parking standards, freight loading/unloading, and necessary parking facilities to ensure adequate vehicular access with a parking environment that is not overbuilt. The Downtown element should include an evaluation on the role and amount of on-street parking needed to provide access, as well as to provide traffic separation for pedestrians. Results from this study should be incorporated into the Reconfigured Street Design Guidelines.
19. **Southeast Redmond Station Area Plan (2015).** To support access to the Southeast Redmond light rail station and successful land use development around the light rail station area, develop a multimodal transportation system and establish detailed standards for implementing this multimodal transportation system.
20. **Complete the South Overlake Village Street Plan (2015).** To support successful land use development in this area of the Overlake urban center, continue with the planning work completed to date, develop a multimodal transportation system, and establish detailed standards for implementing this multimodal transportation system.
21. **Update Cost Estimates (2015).** Complete a mid-course review and update to TFP cost estimates. Updates include ongoing needs for maintenance and operations.
22. **Update the Three-Year Action Plan (2015).** Update the Three-Year Action Plan during its final year to include a priority work plan for years 2016-2018.



Advance Project Development (begin)

23. **166th Avenue NE Corridor Plan from NE 100th Street to NE 85th Street (2013).** Complete study of the corridor and preliminary design for the preferred alternative.
24. **Overlake Access Ramp City Street Portion Preliminary Design (2013).** In coordination with the WSDOT portion of the access ramp, the City will complete preliminary design, environmental, and right-of-way plans to position the local street portion for future funding.
25. **NE 26th Street East of 152nd Avenue NE (2014).** Work with Metro and representatives for the former Group Health property to position the City to acquire the right-of-way to complete this street required in the development agreement for the former Group Health site.
26. **Redmond Central Connector Phase III (2014).** Complete project development for Willows Road and the final phase of the Redmond Central Connector from NE 100th Street to NE 124th Street to position the project for future funding.

Major CIP Construction Projects (begin construction)

27. **Cleveland Streetscape Project (2013).** Cleveland Street will be the signature street for the Downtown urban center. It is part of the Downtown East-West Corridor Study Master Plan and Implementation Strategy and a necessary improvement prior to the conversion of the Redmond Way/Cleveland Street Couplet from one-way to two-way. It includes widening the sidewalks and improving intersections to be more pedestrian oriented. Currently, there is a federal grant to fund improvements between 164th Avenue NE and 160th Avenue NE.
28. **164th Avenue NE 4-3 Lane Conversion (2013).** The project implements an important element of the one-way to two-way conversion, improving connectivity and circulation in the Downtown urban center. It will also protect and enhance community character by more efficiently using existing street width, thereby achieving a high value for the dollars invested. In addition, the channelization improves transit operations in the corridor by allowing easier turning access for buses to the Downtown Redmond Transit Center.
29. **166th Avenue NE 4-3 Lane Conversion (2014).** Convert remaining four-lane section of 166th Avenue NE to three lanes with bike lanes and a center turn lane from NE 100th Street to NE 85th Street.
30. **Redmond Central Connector Phase II (2013).** Complete the next phase of the Redmond Central Connector Trail facility from the Sammamish River Bridge to the Puget Sound Energy Trail crossing signal on Willows Road at the 9900 block. The project includes two bridge crossings, trail installation, and related improvements.
31. **Union Hill Road from 188th Avenue NE to East City Limits (2014).** Widen Union Hill Road from 188th Avenue NE to east city limits. Improvements include the through lanes in each direction, left turn lanes, bike lanes, curb, gutter, sidewalks, streetlights, storm drainage, water detention and treatment facilities, retaining wall, underground power and utility pole relocation, right-of-way, and easement acquisition.
32. **NE 116th Street Improvements and 172nd Avenue NE Roundabout (2014).** In addition to a roundabout at 172nd Avenue NE, this project constructs sidewalks, bicycle lanes, and turn lanes (from 167th Avenue NE to 174th Ave NE) to connect the existing facilities into a safe and complete street for this growing north Redmond residential area.
33. **Redmond Way/Cleveland Street Couplet Conversion (2015).** Conversion of Redmond Way/Cleveland Street couplet from one-way streets to two-way streets. Includes reconstruction of all intersections and traffic signals to provide for an enhanced pedestrian environment. The project



also includes a westbound business access and transit (BAT) lane from Avondale Way about 1,000 feet to the east.

Projects by Developers and Other Agencies (begin)

- 34. NE 27th Street/NE 28th Street between 152nd Avenue NE and 156th Avenue NE (2013).** New three-lane collector arterial street with sidewalks and bike lanes required as part of the development agreement for the former Group Health site.
- 35. 152nd Avenue NE Improvements (2014).** Half-street improvements on the east side of 152nd Avenue NE from NE 26th Street to NE 28th Street as part of the development agreement for the former Group Health site.
- 36. WSDOT Overlake Access Ramp Preliminary Design (2013).** Coordinate with WSDOT on the design of the limited access portion of the Overlake Access Ramp (from freeway to the roundabout ramp terminal).
- 37. WSDOT SR 520 Multimodal Corridor Study Implementation (2013).** In addition to the Overlake Access Ramp, coordinate with WSDOT for funding and implementing the other near-term improvements on the Redmond portion of the SR 520 corridor including: design of the 148th Avenue NE Regional Trail grade separation, completion of the NE 40th Street and NE 51st Street Regional Trail grade separations, and completion of the SR 520 and SR 202 interchange improvements at the NE 76th Street intersection (includes a second eastbound left-turn lane and a separated pedestrian/bicycle bridge aligned with the Redmond Central Connector trail).
- 38. Sound Transit East Link Final Design (2013).** Coordinate with Sound Transit on the final design and permitting for the Overlake Village Station and Overlake Transit Center Station, pedestrian bridges, and related work to deliver light rail to Overlake.

Other Relevant Activities

- 1. Update the City's Capital Investment Strategy (CIS) (2013).** After adoption of the TMP, the transportation section of the CIS will be modified to include both the updated Buildout Plan and 2013-2030 TFP.
- 2. Update Policies of Undergrounding Overhead Utilities (2013).** Redmond policies and code require that all overhead utilities are undergrounded when private development or capital improvement occurs. Policy and regulations will be reviewed and updated as needed to provide reliable utility services and maintain Redmond's community character, while ensuring effective use of public and private resources.
- 3. Adequate Maintenance and Street Asset Inventory (2014).** To effectively keep track of street assets and manage the maintenance of existing transportation infrastructure, build a comprehensive street asset inventory database.
- 4. Funding Allocation Structure for Maintenance and Operations for Capital Improvements (2014).** Establish a budget structure for capital improvements that explicitly accounts for ongoing maintenance and operations needs in addition to design and construction.
- 5. Regional Trail Access Study for Adjacent Properties (2014).** Improve the function and use of regional trails and determine locations with willing property owners to make new connections to regional trails. Coordinate with the Parks Department Trail Development Plan, which will identify property rights and propose trail locations at a parcel level basis.
- 6. Strategic Transportation Stormwater Treatment Plan (2015).** To achieve the most cost-effective way to treat stormwater impacts from transportation infrastructure and develop a strategic plan to integrate the planning and project development of transportation and stormwater facilities



Action Plan Summary and Timetable

	2013	2014	2015
Ordinances and Council Actions (Year of Project Completion)			
1	Update Impact Fee Schedule		
2	Concurrency Ordinance Update		
3	Designated Freight Routes Update		
4		Reconcile Zoning Code with TMP Update	
Studies and Plans (Year of Project Initiation)			
5	Recommend Funding for TMP Programs		
6	Create e-TMP		
7	Wayfinding Standards for Cyclists and Pedestrians		
8	Develop Transit Strategic Plan		
9	Local Circulator Proof of Concept		
10	Urban Centers TDM Implementation Strategy		
11	Evaluate Transportation Funding Options		
12		Recommend Actions for an Arts Policy for Transportation	
13		Avondale Road Bicycle Facilities Study	
14		Education Hill Bicycle Modal Corridor Route Study	
15		Bicycle Facilities Design Manual Update	
16		Speed Limit Revision Study	
17		Reconfigured Streets Guidelines	
18		Parking Study	
19			Southeast Redmond Station Area Plan
20			South Overlake Village Street Plan
21			Cost Estimate Updates

Action Plan Summary and Timetable (continued)

	2013	2014	2015
Studies and Plans (Year of Project Initiation) continued			
22			Update Three-Year Action Plan
23	166th Avenue NE Corridor Plan		
24	Overlake Access Ramp City Street Prelim Design		
25		NE 26th Street Design	
26		Redmond Central Connector Phase III Design	
Major CIP Construction (Begin Construction)			
27	Cleveland Streetscape Project		
28	164th Avenue NE Rechannelization		
29		166th Avenue NE Rechannelization	
30		Redmond Central Connector Phase II	
31		Union Hill Road – 188th Avenue NE to East City Limits	
32		NE 116th Street Improvements and 172nd Avenue NE Roundabout	
33			Redmond Way/Cleveland Street Couplet Conversion
Projects by Developers and Other Agencies (Year of Project Initiation)			
34	NE 27th/NE 28th Streets between 152nd Avenue NE and 156th Avenue NE		
35	152nd Avenue NE Improvements		
36	WSDOT Overlake Access Ramp Prelim Design		
37	WSDOT SR 520 Multimodal Corridor Study		
38	Sound Transit East Link Final Design		

Action Plan Summary and Timetable (continued)

	2013	2014	2015
Other Activities			
1	CIS Update (Citywide)		
2	Update Policies of Undergrounding Overhead Facilities (Citywide)		
3		Maintenance and Street Asset Inventory	
4		Funding Allocation Structure for Maintenance and Operations	
5		Regional Trail Access Study	
6			Strategic Transportation Stormwater Treatment Plan

