5 Implementation Resources

5.1 Data and Research

Decisions for transportation and land use are often data driven. Transportation departments have a long history of assessing roadway and congestion information. On the other hand, the collection of adequate bicycle and pedestrian facility and safety data is relatively new, yet important for many aspects of multimodal planning and project implementation. These data can be used to justify project need, demonstrate mode split, evaluate the before and after effects of adding bicycle and pedestrian facilities, and assess latent demand. In addition, the new federal transportation law MAP-21 emphasizes monitoring. This chapter will:

- discuss the various categories of data collection and research that support active transportation planning and program development
- provide recommendations for data collection to encourage coordination and regionally cohesive data sets when data is collected locally
- provide additional resources on each topic
- discuss challenges and potential future opportunities

The fourth goal of this plan is to provide guidance for jurisdictions to build robust multimodal measurement and monitoring systems which is the intent of this chapter.

Pedestrian and Bicycle Counts and Travel Data

One of the challenges to developing and implementing bicycle and pedestrian plans is the lack of documentation on usage and forecasting demand. Bicycles and pedestrian counts are important when assessing mode split and facility level-of-service, estimating demand, and measuring the benefits of investments. In Washington State, the primary data used to assess mode split comes from volunteer counts and surveys. This kind of data, as compared to actual 24/7 traffic counts along roadways, can be inadequate when accurately demonstrating mode share.

Counting pedestrians and bicycles can be challenging due to the variety of turn movements when traversing intersections. This diagram demonstrates the potential turn movements a bicyclist can make from one direction at an intersection. In addition, bicyclists and pedestrians often use local roadways more frequently, which poses additional challenges when choosing appropriate count locations. Pedestrians often have strollers or may be on wheels themselves. These variations pose challenges when counting pedestrians and bicyclists where traditional count mechanisms for cars don’t work.
New technologies are currently being developed to better measure bicycle and pedestrian count data. The most widely used method of counting pedestrians and bicyclists is by using volunteer counts. The National Documentation Project\textsuperscript{130} is a resource that provides a standard method, resources and templates for jurisdictions nationwide to organize volunteer counts using a similar method. Washington State\textsuperscript{131} coordinates an early October volunteer count each year with local jurisdictions across the state. Volunteers count at key locations for two hours during the peak commute hours for several days mid-week. This volunteer count is particularly valuable when comparing data across jurisdictions because it provides a consistent data collection methodology used in many locations. However, lack of volunteers to adequately count increasing locations is a challenge.

Conducting an annual volunteer count is a great way to assess growth in peak hour bicycle and pedestrian volumes and mode share, but more 24/7 counts are needed for establishing daily, weekly or monthly variations. In order to supplement volunteer counts, more \textit{automated counts} are necessary. These automated counts would support monitoring, establishing level of service on facilities, and for establishing demand. There are many different types of technologies for counting bicycles and pedestrians such as\textsuperscript{132}:

- Passive infrared (detects a change in thermal contrast)
- Active infrared (detects an obstruction in the beam)
- Ultrasonic (emits ultrasonic wave and listens for an echo)
- Doppler radar (emits radio wave and listens for a change in frequency)
- Video Imagining (either analyzes pixel changes or data are played back in high speed and analyzed by a person)
- Piezometric (senses pressure on a material either tube or underground sensor)
- In-pavement magnetic loop (senses change in magnetic field as metal passes over it)
- pneumatic tubes
- Use of Bluetooth or WiFi technologies

\textsuperscript{130} Alta Planning + Design (n.d.). \textit{National Bicycle and Pedestrian Documentation Project}. Retrieved from \url{http://bikepeddocumentation.org/}

\textsuperscript{131} Washington State Department of Transportation (n.d.). \textit{Washington State Bicycle and Pedestrian Documentation Project}. Retrieved from \url{http://www.wsdot.wa.gov/bike/count.htm}

\textsuperscript{132} Alta Planning + Design (n.d.). \textit{National Bicycle and Pedestrian Documentation Project}. Retrieved from \url{http://bikepeddocumentation.org/}
The City of Bellevue used traffic cameras and volunteers to count from a computer.

A literature review was conducted on best practices for modeling and counting bicycle commute activity as part of the Bicycle Planning, Best Practices and Count Methodology Report\textsuperscript{133} based on data in the Puget Sound region. Some of the findings from this report suggest that in order to satisfactorily account for seasonal adjustment factors, together with the ambiguous variation between days of the week, more and better data are required. Automated year round counts that are focused in areas of high use are recommended for gaining the most from any chosen count technology. Automated daily, 24-hour counts at enough locations are needed to make conclusive determinations of local seasonality and day-of-week variations. Fewer locations with more complete information would better address these questions than more locations for a smaller subset of the year. High use areas can often be found at cordon points such as bridges.

Also, the report recommends that counts should be conducted on Tuesdays, Wednesdays, and Thursdays because these are considered statistically “average” commute days, in accordance with standard automobile traffic counting practices. This literature indicates that PM-period counts are often more accurate in terms of predictions.

Another resource is the Count Adjustment Factors tool supplied by The Bicycle and Pedestrian Documentation Project\textsuperscript{134}. These factors can be applied to annual


\textsuperscript{134}Alta Planning + Design (n.d.). Forms and Documents. Retrieved from \url{http://bikepeddocumentation.org/downloads/}
counts, although the factors are based on national data; local adjustment factors would better predict pedestrian and bicycle frequency based on local weather and seasonal variations, as well as local travel patterns.

The City of Seattle’s bike counter at the Fremont Bridge provides 24/7 bike counts. The data serve the dual purpose of counting bicyclists and providing a visible message as to the growing number of bicyclists that use this bridge. Not all count locations require this kind of display, as other 24/7 counters may be more economical. In its first year of service, the Fremont Bridge bike counter recorded 900,985 trips. The City of Seattle is adding more of these types of bike counters across the city.

According to the literature review conducted as part of the Bicycle Planning, Best Practices and Count Methodology Report, variables that are most hypothesized to affect bicycling include: population density, income, age, mix of land uses, employment density, temperature, precipitation, and the type of facility being used.

In addition to count data, there are other methods for collecting information on bicycle and pedestrian travel such as:

Survey questionnaires

2006 PSRC Household Travel Survey – The primary aim of the 2006 survey was to collect behavioral data from households to determine why people make the decisions they do regarding transportation options. The survey data was intended to support development of a new regional Activity-Based Travel Model. This survey is being conducted again in 2014, and will most likely use a combined method for collecting data.

Portland State University Family Activity Study (2010 – 2013) aims to better understand how, why, and where families with children walk and bicycle and how physically active they are.


Study results will help planners create neighborhoods that make it easier for families to use active forms of transportation in Portland.

The Puget Sound Regional Council, together with researchers from the University of Washington’s Department of Urban Design and Planning, are working to better understand how to plan for the needs of bicyclists. The CycleTracks Smartphone Application\(^\text{139}\) works much like a travel survey, except that it uses a smart phone’s GPS to record trip routes and times as well as confidential and voluntary trip purpose and other demographic data. This application is self-selecting and available only to people with smart phones, but often bicyclists are similar in terms of how far they will detour from a direct route to avoid steep slopes or to access a safe route. Volunteer demographic information is available on this application, so information can be derived as to the differences in age and gender.

**Combined Approaches**

Combined approaches use various methods to collect usage and count data. One example is from a study conducted by the Seattle Children’s Hospital Research Institute and the University of Washington on the effect of light rail transit on physical activity\(^\text{140}\). This study utilized a combination approach to collecting travel data which included a demographic and attitudinal survey, a travel diary, GPS and an accelerometer.

**Safe Routes to Schools (SRTS) Statewide Mobility Assessment\(^\text{141}\)** aims to identify and use existing tools to establish benchmarks for children walking and biking to school, provides recommendations for future allocation of SRTS funds and identifies methods and tools to continue to evaluate the effectiveness of SRTS investments. In order to collect this data, the assessment included program and school information, student travel tally (classroom level data collection such as a “show of hands”), weather

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data and parent surveys. The National Center for Safe Routes to School\textsuperscript{142} provides easily accessible templates for data collection\textsuperscript{143}.

Other Resources:

Portland State University’s Guide to Bicycle & Pedestrian Count Programs


\textbf{Facility Data and Conditions}

The Growth Management Act requires comprehensive plans to have a transportation element that includes an inventory of transportation facilities. In order for jurisdictions to plan for and prioritize their transportation investments to support active transportation, jurisdictions must account for both the presence and condition of pedestrian and bicycle facilities.

Bicycle and pedestrian infrastructure plays a key role in pedestrian and bicycle safety and in increasing the active transportation mode share. According to a Portland State University Study, \textit{Bicycling for Transportation and Health: The Role of Infrastructure}\textsuperscript{144}, a supportive environment appears necessary to encourage bicycling for everyday travel. According to this study, the first part of that environment is bicycle infrastructure that addresses people’s concern about safety from motor vehicles. In addition, a network of different types of infrastructure appears necessary to attract new people to bicycling.

\textbf{Facility Data}

The PSRC Bike and Pedestrian Advisory Committee (BPAC) adopted a \textit{Regional Bicycle Facility Typology} that will be used to inventory bike facilities region wide. This set of definitions is \textbf{recommended for the collection of bicycle facilities data} and will be used to create a cohesive data set for continuity of map-making across jurisdictional boundaries and for planning activities such as regional data sharing and

\begin{itemize}
  \item \textsuperscript{142} National Center for Safe Routes to School (2010). \textit{A Look at Baseline Results from Parent Surveys and Student Travel Tallies}. Retrieved from \url{http://www.saferoutesinfo.org/sites/default/files/SRTS_baseline_data_report.pdf}
  \item \textsuperscript{143} National Center for Safe Routes to School (n.d.). \textit{Data Collection Forms}. Retrieved from \url{http://www.saferoutesinfo.org/data-central/data-collection-forms}
\end{itemize}
monitoring. This data collection effort will also support VISION 2040 and Transportation 2040 monitoring. In addition, this data set is incorporated into the PSRC activity-based model, which will be used for the 2018 plan update. A solid network that reflects bicycle facilities, combined with the new, denser zonal structure, will better incorporate bicycling and walking into PSRC’s modeling suite. See the Forecasting section under section 6.1 for more detail.

<table>
<thead>
<tr>
<th>Regional Bicycle Facility Typology</th>
<th>Definitions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shared Use Path</td>
<td>Shared Use Paths are for the exclusive use of pedestrians, bicyclists and other active transportation users. They are separated from motorized vehicular traffic by an open space, barrier, curb, or exist in an independent corridor.</td>
</tr>
<tr>
<td>Cycle Track (Protected Bicycle Lane)</td>
<td>Cycle Tracks are an exclusive bicycle facility within or adjacent to the roadway but separated from motor vehicle traffic by a physical barrier or change in elevation. Cycle Tracks are also known as “protected bicycle lanes.”</td>
</tr>
<tr>
<td>Bike Lane</td>
<td>Bike Lanes are a portion of the roadway designated for preferential use by bicyclists. Bike lanes include pavement markings indicating one-way bike use. This category includes a variety of implementation strategies such as buffered bike lanes, contra-flow bike lanes, colored bike lanes and bike passing lanes</td>
</tr>
<tr>
<td>Paved and Striped Shoulder</td>
<td>Paved and Striped Shoulders are paved shoulders defined by a fog line but without bike pavement markings indicating preferential bicycle use.</td>
</tr>
<tr>
<td>Shared Lane Markings (Sharrow)</td>
<td>Shared Lane Markings are pavement markings, or “sharrows,” which are used to indicate roadways that have a shared lane environment for bicycles and automobiles. SLMs reinforce the legitimacy of bicycle traffic on the street and recommend proper bicyclist positioning.</td>
</tr>
<tr>
<td>Neighborhood Greenway</td>
<td>Neighborhood Greenways are low speed, low volume local streets that prioritize pedestrian and bicycle travel with traffic calming treatments and improving arterial crossings. These often parallel nearby arterials and typically include a combination of treatments and aesthetics. Neighborhood Greenways have been referred to as Bike Boulevards.</td>
</tr>
</tbody>
</table>

As jurisdictions create local bike route maps, use of similar coloring and facility typology across jurisdictional boundaries will provide more cohesive maps that cyclists can understand easily. More importantly, as maps and data sets are created, it is recommended to label “routes” on top of the typology list. When the term “route” is included on a legend, it should be clear to the cyclist what to expect in terms of a bike lane or a shared roadway.

Each of the definitions noted above have extensive facility design guidance in a variety of publications. According to FHWA145, designing facilities for bicyclists and pedestrians should follow the best currently available standards and design guidelines such as “AASHTO Guide for the Development of Bicycle Facilities,” AASHTO's “A Policy on Geometric Design of Highways and Streets,” and the ITE Recommended Practice "Design and Safety of Pedestrian Facilities."

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• National Association of City Transportation Officials (NACTO) Urban Bikeway Design Guide
• American Association of State Highway and Transportation Officials (AASHTO) - Guide for the Development of Bicycle Facilities
• AASHTO's A Policy on Geometric Design of Highways and Streets
• ITE Recommended Practice "Design and Safety of Pedestrian Facilities”.

According to the Bicycle Planning, Best Practices and Count Methodology Report\textsuperscript{146}, major findings and recommendations for best practices in bicycle facility design include the following:

• Design of adequate bicycling facilities will likely have to go beyond the American Association of State Highway and Transportation Officials (AASHTO) and the Washington State Department of Transportation (WSDOT) minimum design guidelines.

• Planning and design are contextually sensitive and should fit the needs of individual communities.

• Plans should include an evaluation and prioritization method for implementation.

• Shared use paths (trails) must be integrated into a larger network and clearly signed.

• Shared use paths must consider users to determine appropriate width and material.

• Neighborhood Greenways (bicycle boulevards) should be considered as a separated bicycle route parallel to busy roadways.

• Bicycle lanes, while inexpensive to implement, should include street modifications, and policy guidelines such as Complete Streets.

• Cycle tracks, or separated bicycle lanes, have been successful in Europe and should be considered.

Conditions and Maintenance
Adequate facility data is the first step toward developing maintenance plans. In order to include pedestrian and bicycle facilities in priorities for local maintenance, adequate condition data is needed for bike facilities, sidewalks and shared use paths. Often, pavement data is collected only for roadway lanes, but data should also include the bike facility, shoulder and sidewalk areas of the public right-of-way. Barriers that make safe passage difficult for users (inappropriately placed signage, utility poles in the center of sidewalks, etc.) should also be included with condition data sets.

Some jurisdictions are collecting existing condition data in creative ways. The City of Seattle is utilizing crowd-sourced data by offering a smart phone app called “Find it, Fix it” that asks mobile users to snap a photo and send the city detailed information on a set of selected issues.

Walking Audits\textsuperscript{147} provide information for pedestrian-savvy project planning. Feet First, a local non-profit organization that advocates for pedestrians, works with community members, elected officials, and city staff to assess the community and identify barriers and opportunities to walking so that the city or neighborhood can take steps toward improving walkability.

Safe Walking and Biking Environments
In addition to the inventory and condition of pedestrian and bicycle facilities, additional data is important for assessing safe pedestrian and bicycle friendly environments. Transportation networks alone do not make for safe biking and walking in all places. Lighting, street trees, benches, bicycle parking, wayfinding signage for pedestrians and bicyclists and nearby open space are all examples of indicators for safer walking and biking environments, and should be considered when assessing priorities for communities.

Jurisdictions often have this information but it is collected by various departments (parks, utilities, transportation). This is another example for how interdepartmental coordination can be beneficial. Coordinating data sets interdepartmentally is recommended in general for integration.

Collisions and Data about Safety
The Washington State Traffic Safety Commission gathers and analyzes data from traffic tickets, police crash reports, court records, emergency medical services reports and a variety of other sources. Washington relies on these data to determine which traffic safety issues are most important and which strategies are successful for addressing them.

Target Zero is Washington State’s Strategic Highway Safety plan\textsuperscript{148} which identifies priorities for funding related to safety. In the 2013 update of the Target Zero plan, pedestrians were moved up from priority three to priority two, indicating the increasing importance of pedestrian safety.

However, collisions that do not require a police report or hospitalization are most likely never recorded. In addition, some collision data is only recorded if the incident involves a motor vehicle. Bicycle to bicycle collisions, pedestrian to bicycle collisions, and other crashes caused by environmental conditions such as poor pavement quality are also rarely recorded. In order to capture the full picture of pedestrians and bicycle crashes, some data collection improvements and innovations are needed. Crowdsourcing is a great opportunity to begin to track more detailed data on pedestrian and bicycle collisions. Bikewise,\textsuperscript{149} a website created and maintained by the Cascade Bicycle Club, is another example providing the opportunity to crowd-source bike crashes, road conditions, hazards, and thefts.

Bicycle and pedestrian improvements should have additional safety criteria other than using collisions alone, because there are many locations where no facilities exist at all or conditions are not conducive for bicycle and pedestrian use, such as on routes with high vehicle speeds or that lack facility separation.

Collision data is an important resource for assessing hazardous conditions, but collision risk should be communicated clearly. Otherwise, urban centers and places with high volumes of people (and therefore more collisions) may appear on a map as potentially dangerous places when in reality, they may be the safest in terms of safety in numbers, dense environments with better lighting, smaller block sizes, etc. Likewise, a high crash location in a place with relatively few bicyclists or pedestrian cans be a concern. Being able to parse this information out of collision data sets is important for both communication and for planning purposes. Mode share, count data and/or demographic data are all useful when communicating the full picture of high crash locations.


Behavior and Attitudinal Data

When planning for active transportation, behavior and attitudinal data are used in a variety of ways. Information about current travel behavior and attitudes can help jurisdictions prioritize changes that will encourage more people to walk and bike. This can be part of a plan scoping process or the process to develop the design for a project.

Before-and-after studies of bicycle facilities can be used to assess how the installation of a facility affected the use of that facility and travel behavior. Health departments have been increasingly interested in this data due to the influence of land use and the built environment on physical activity and public health. Research on this topic is growing in both practical and scholastic areas, and should be encouraged.

Attitudinal data was collected in the 2012 Bicycle Participation phone survey conducted by the City of Seattle. These data were an important part of the scoping process for the Bicycle Master Plan update. This survey asked questions such as how far bicyclist’s ride, what facilities they use, and reasons for not riding more.

Other opportunities are available to include attitudinal data in data collection efforts. For instance, the 2014 PSRC Household Travel Survey will include additional attitudinal questions responding to the multiple purposes for this survey. Traditionally, these household travel surveys are used for calibrating the PSRC travel demand model, but this data is increasingly being used for research and broader planning purposes.

Further studies on benefits and changes in user behavior related to land use and the built environment will inform the region about the benefits of infrastructure changes, local planning and education programs.

5.1.1.1 Additional Resources

http://walksteps.org/tactics/collect-pedestrian-data/

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Multimodal Level of Service (MMLOS) and Concurrency

What is MMLOS?
The Washington State Growth Management Act (GMA) requires that local governments establish level of service (LOS) standards for roadways and transit routes within the transportation element of local comprehensive plans to ensure that adequate transportation facilities are provided concurrent with development. The Growth Management Act defines transportation concurrency as necessary improvements that are in place at the time of development, or funding that is in place to complete the necessary improvements within six years. The GMA does not mandate any particular way of measuring LOS but does state that standards should reflect mobility and mode split/capacity goals of the community. RCW 36.70A

**Level-of-service standards** are “used to measure whether existing facilities and services are adequate to serve its citizens, or whether there are deficiencies that should be corrected” to be concurrent with development. [MRSC](#)\(^{151}\)

GMA ([RCW 36.70A.108](#)\(^{152}\), [WAC 365-196-430](#)\(^{153}\)) and the region’s multicounty planning policies encourage consideration of all modes when measuring levels of service. The VISION 2040 Multicounty Planning Policies call for local jurisdictions to focus concurrency programs on movement of people and goods instead of on movement of vehicles, and to address bicycle, pedestrian and other multimodal types of transportation options in concurrency programs (MPP-DP-54-55). Historically, level of service standards have focused on the capacity for moving cars, but future comprehensive plan updates will need to address policy direction for assessing the transportation system for all modes. Under GMA, local jurisdictions can develop their own method for measuring level of service and establishing concurrency. Bicycles, pedestrians and transit often meet a significant portion of a community’s transportation needs and should be reflected in the level of service measures.

**Multimodal concurrency** refers to a concurrency program that evaluates and balances needs and priorities for all transportation modes, including motor vehicles, pedestrians, transit, and bicycles.

**Multimodal level-of-service (MMLOS)** refers to an indicator of transportation facility or service adequacy across various transportation modes, with considerations for how different modes interact. WAC 365-196-430

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Approaches and Methodologies

There are various approaches for establishing multimodal level of service. There is no “one-size-fits-all” methodology for measuring multimodal level of service. Concurrency should be tailored to local circumstances as well as different geographic scales (corridor planning vs. citywide). This section will summarize some of the various approaches to measuring multimodal level of service.

Person Capacity vs. Automobile Capacity

Plan-Based Transportation Concurrency System - City of Redmond

The City of Redmond uses this tool to manage the pace of development while providing transportation improvements for all users, including bicyclists, pedestrians, drivers, and transit riders. The concurrency concept in Redmond is simple – compare system demand to system supply by comparing Transportation Mobility Units (TMU) which estimates person demand by mode of travel to the supply (available supply of mobility units) and then uses this comparison to apply the concurrency review process when development occurs. The concurrency concept in Redmond is simple but the actual calculations are more complex. See the City of Redmond’s Concurrency page for more information.

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Person Delay

Another example of MMLOS that addresses people as opposed to vehicles is measuring person delay. This approach uses microsimulation to evaluate the delay per person for each mode of travel at an intersection. This allows for all the various transportation modes to be combined and compared equally. In addition, this microsimulation is very conducive to evaluating alternatives in project development. There are benefits to this approach. Using person delay, all modes are accounted for (including vehicle and transit occupancy). This approach also provides insight into how different types of improvements can benefit different modes. This example of person delay is from the UC Davis Campus and from the Fehrs and Peers MMLOS Toolkit.

2010 Highway Capacity Manual

The 2010 Highway Capacity Manual (HCM) provides detailed information on how to calculate LOS for bicycles and pedestrians on urban streets and at intersections.

The HCM includes methodologies that account for street cross-section of vehicle travel lanes, bike lanes, parking, landscaping, sidewalks and bus shelters. The LOS standards are based on quality of service and comfort as well as speed of traffic and vehicle volumes. LOS measures are graded A through F for each mode and then the LOS ratings can be layered so that all modes are addressed when prioritizing the needs for the transportation network.

Layered Networks

This approach designates modal emphasis by street to create a complete streets network. Layered networks recognize that while all traveler types need to be accommodated within a community, no single street can accommodate all transportation users at all times. The layered network concept envisions streets as systems, each street type designed to create a high quality experience for its intended users. A layered network approach can also use context sensitive land use and mode overlays to enhance additional transportation modes. This also allows preferred features by mode for evaluating level of service per layer. This provides a method for identifying layer-specific deficiencies and prioritizing improvements.

Bellingham’s Multimodal Transportation Concurrency Program was one of the first programs in the nation to move beyond traditional auto-oriented level of service (LOS) measurements to assess the adequacy of the citywide transportation network, and has been featured in a wide variety of state and national publications.

The City of Bellingham combines multimodal LOS standards and a “plan-based” multimodal transportation concurrency system tailored to achieving local Bellingham Comprehensive Plan goals and priorities for urban infill and multimodal transportation.

This method is GIS-based and measures pedestrian, bike and trail data on an annual basis in addition to arterial street traffic, transit ridership and transit seated capacity.

To assess MMLOS the City of Bellingham measures:

- Implementation of Comprehensive Plan
- 16 Concurrency Service Areas (CSA) are “mobility sheds” based on their land use context (urban village, moderate density, lower density suburban, etc.). Within these CSAs, the following data is measured:
  - Variable typology & weighting factors based on land use context
  - Pedestrian and Bicycle = % completeness of network in comprehensive plan
  - Multi-use Trails = % completeness relative to pedestrian and bike networks in comprehensive plan
  - Transit = WTA seated 2-way capacity and ridership counts
  - Vehicles = pm peak 2-way volume-to-capacity (v/c)

The variables noted above are converted to “Person Trips Available by Concurrency Service Area” and become the new LOS standard. Measurement points assigned within each CSA are based on importance of facility or route to move people and serve new infill development (not all arterials are equal). Bellingham’s concurrency framework is very transferable, but mode measurements and data must be registered to local land use context and comprehensive plan goals and policies. Over time, this methodology can be enhanced with better connectivity analysis, incorporation of bicycle and pedestrian counts, and other user data as noted throughout this chapter.

Additional Resources
PSRC has hosted several forums on multimodal level of service. More information as well as presentations from various sources can be found at the following locations on the PSRC website:

Regional Technical Forum Presentations
Interagency Data Group Presentations
Equity and Health in Transportation Conference Presentations
PSRC Concurrency Resources
PSRC and City of Bellevue Multimodal Concurrency Pilot Project
Adopted Level of Service Standards for Regionally Significant State Highways
Concurrency Resources

The Washington Department of Commerce Transportation Guidebook157 is a great resource for helping jurisdictions with GMA-compliant transportation elements.

Other resources:
Cascade Bicycle Club: Multimodal Level of Service in King County
MRSC: Multimodal Transportation Planning in Bellingham, WA
Redmond Multimodal Plan-Based Transportation Concurrency System
Victoria Transport Policy Institute: Potential Multimodal LOS Indicators
WA Department of Commerce: Options for Making Concurrency More Multimodal
WSDOT: Coordinating Transportation and Growth Management Planning: Implementation Guidance for HB 1487 (Level of Service Bill)

In addition, there are always new methods and improvements for assessing concurrency for all modes. A wealth of information is available but it can be difficult to determine the best methods to use. This Multimodal Level of Service (MMLOS) Toolkit158 is offered by Fehrs and Peers for public use.

Measuring Latent Demand
Measuring latent demand helps to clarify the need for bicycle and pedestrian improvements. As discussed in earlier chapters, latent demand can come from growing popularity and growing necessity. Some measures for latent demand include:

- population growth and mode shift trends


• aging population growth
• growth in economic disparities
• trips less than three miles that could be substituted for bicycle trips
• before-and-after studies to measure how infrastructure influences travel behavior

Forecasting

PSRC is developing a next-generation activity-based travel demand model that will replace its current trip-based model prior to the next update of the regional transportation plan. The basic organizing principle of an activity-based travel demand model is an individual’s daily activity pattern, including such activities as going to work or school. The activity pattern-tour-trip segment relationship provides an individual’s overall travel behavior linked together by mode, destination, time-of-day, and other activities in the daily pattern. This approach differs from traditional trip-based modeling where trip segments are largely treated as unrelated events.

An activity-based model system is a highly disaggregate environment, representing the travel behavior of each individual and household separately. Disaggregation avoids the errors and biases associated with generalization and averaging that have historically plagued trip-based modeling, and lends itself to a more realistic and accurate portrayal of travel behavior and demand.

An important improvement to the travel model is the density of Transportation Analysis Zones. Each trip is measured from one zone to another, so smaller zones are more conducive to capturing bicycle-and pedestrian-scale trips. The former model had 938 zones whereas the new model has 3,700 zones.

Other resources for forecasting pedestrian and bicycle demand:

• [Forecasting Pedestrian and Bicycle Demand using travel demand model and mode share trip/length data](bicyclinginfo.org)
• [Forecasting & GIS Analysis](Fehrs and Peers)
• [FHWA Bicycle/Pedestrian Trip Generation Workshop Information](bicyclinginfo.org)
5.2 Funding and Leveraging Opportunities

With an increased emphasis on safe environments for people of all ages and abilities to walk, bike and utilize public transit, it is important that project sponsors have the resources to support their efforts to plan for and ultimately implement active transportation projects. This chapter will outline the various funding sources that support active transportation, identify strategies for success when applying for funding, and introduce examples for leveraging opportunities.

Federal, State and Regional Transportation Funds

Federal Transportation Law

On July 6, 2012, President Obama signed new two-year transportation legislation passed by Congress known as Moving Ahead for Progress in the 21st Century, or MAP-21. This law extends federal highway and transit programs through September 30, 2014, consolidates several highway and transit programs, and introduces new federal policy such as performance-based planning and project implementation streamlining. MAP-21 replaces the former federal transportation law, Safe Accountable Flexible Efficient Transportation Equity Act (SAFETEA-LU), which had been in place since 2005.

The diagram below demonstrates some of the changes in the federal transportation programs where states and regions have a shared responsibility for distributing those funds. Active transportation projects are eligible for all the funding sources noted below to various degrees. Please see the Funding Sources table for more detailed information.

Further details on MAP-21 are available at http://www.fhwa.dot.gov/map21/
Other Federal Funds
The United States Congress, Federal Highway Administration (FHWA), Federal Transit Authority (FTA) and other federal agencies have primary responsibility for selecting transportation projects to receive funds from federally managed discretionary funding programs. Examples of these programs include the transit New Starts program, the Transportation Investment Generating Economic Recovery or TIGER grant programs, and other federal discretionary programs.

Federal Guidance on Funding Active Transportation
On August 19, 2011, the Federal Transit Administration (FTA) established a formal policy on the eligibility of pedestrian and bicycle improvements for FTA funding and defined the catchment area for pedestrians and bicyclists in relation to public transportation stops and stations. FTA supports additional funding for pedestrian and bicycle improvements. Indeed, recent research indicates a significant disparity between the percentage of pedestrian and bicycle trips in the United States and the amount of Federal transportation funding for those trips. Approximately 10 percent of all trips are by foot or by bicycle nationwide, however, these modes receive only 1 percent of the total amount of transportation funding at the Federal level. To remedy this disparity, FTA supports the expansion of funding sources, such as the Surface Transportation Program and the CMAQ Program. FTA agrees that, through an increase in Federal funding, local communities could implement livability initiatives, create jobs, and maintain pedestrian and bicycle projects in a state of good repair.

Most grant programs administered by FTA may be used to fund the design, construction, and maintenance of pedestrian and bicycle projects that enhance or are related to public transportation facilities. Improvements made expressly eligible by statute include capital projects like pedestrian and bicycle access to a public transportation facility; and transit enhancements like pedestrian access, walkways, and bicycle access, including bicycle storage facilities and equipment for transporting bicycles on public transportation vehicles. Additionally, certain funding programs administered by FHWA, including the Surface Transportation Program (STP) and the Congestion Mitigation and Air Quality (CMAQ) Program, may be used for public transportation purposes. Once transferred to FTA for a public transportation purpose, these


“flexible” funds are administered as FTA funds and take on all the eligibility and requirements of the FTA program to which they are transferred, except for the Federal share, which remains that required under the FHWA program. The following is a description of the eligibility requirements for pedestrian and bicycle improvements under Federal Transit Law.\textsuperscript{161}

State Managed Funds

WSDOT has primary responsibility for selecting projects to receive federal funds from programs such as Interstate Maintenance, the Bridge Program, the National Highway System program and others. In addition, WSDOT and other state agencies are responsible for distributing state transportation funds. Below are some examples of funds managed by Washington State. For more information on these and other sources, see the Funding Sources table.

- **Recreational Trails Program** – FHWA funds to rehabilitate and maintain recreational trails and facilities that provide a backcountry experience.

- **Safe Routes to School** – The purpose of this program is to aid public agencies in funding cost-effective projects within two miles of primary and middle schools (K-8) that provide children a safe, healthy alternative to riding the bus or being driven to school. Eligible projects include educational programs, infrastructure or other safety related features such as crossing improvements.

- **Pedestrian and Bicycle Program** – Supports pedestrian and bicycle projects that improve safety and mobility for people who chose to walk or bike. Projects can be located on state highways, city streets or county roads.

- **Washington Transportation Improvement Board (TIB), Small City Sidewalk Program** – Washington’s TIB also includes the Small City Arterial and Preservation program. These programs fund projects with the intent of reconstructing or maintaining the transportation infrastructure for transportation-related pedestrian projects (urban and small city projects compete separately).

- **Washington State Traffic Safety Commission** – Flashing Lights for Schools Program

- **Washington Wildlife and Recreation Program** - Funding for a broad range of land protection and outdoor recreation, including park acquisition and development, habitat conservation, farmland preservation, and construction of outdoor recreation facilities.

It is essential to develop safe, secure, and appropriate pedestrian and bicycle infrastructure if the users of public transportation are to have safe, convenient, and practical access routes to, as well as appropriate amenities to enhance the utility of, public transportation systems across the country.

Federal Transit Administration
PSRC’s Competitive Project Selection Process

Each funding source has its own eligibility requirements and is distributed approximately every two years through a highly competitive project selection process.

PSRC conducts a shared regional and countywide process to recommend and select projects to receive PSRC’s STP and CMAQ funds. The total estimated amount of both STP and CMAQ funds is split between the regional and countywide forums based on a regionally adopted funding split. Competitive processes are used by all forums to recommend projects to receive the funds. The TAP Funds are awarded less frequently than the STP and CMAQ funds. This is a regionally competitive process and the only process facilitated by a Citizens Advisory Committee. The next round of TAP is estimated to be in three years contingent upon federal transportation legislative updates, changes or continuing resolutions.

**PSRC’s Nonmotorized set-aside:** Since 1993, 10% of the combined estimated total of STP and CMAQ funding has been set aside for nonmotorized priorities and is assigned to the countywide processes for distribution.

**Percent of PSRC Funding to Projects Also Containing Bicycle and Pedestrian Elements**

1992-Present (Note: Does not reflect stand-alone Bicycle and Pedestrian projects)
Use of Federal Funds

Meeting federal funding requirements can be onerous and time consuming. Project sponsors should plan accordingly in terms of both schedule and budget. The scale and cost of projects should play a factor when choosing to apply for federal monies. Some of these federal requirements* include:

- Match requirement (depending on specific program)
- Delivery requirements (federal rules are making these more stringent)
- Projects must comply with the National Environmental Policy Act (NEPA)
- Buy America program requirement
- Davis-Bacon prevailing wage requirement
- The Disadvantaged Business Enterprise (DBE) program requirement

* These requirements may have waivers or apply to specific funding sources while not applying to others. It is important to research and understand the rules and requirements depending on the specific funding source or program and project type prior to accepting and eventually obligating any federal funding.

Local Funds

Federal and state transportation dollars are not the only source of funds that support active transportation and related projects. Local jurisdictions often have many available tools to assist in finding and leveraging local dollars.

Cities, counties, ports, transit agencies and other entities have primary responsibility for selecting projects to receive each agency’s local funds. See the Funding Sources table (Attachment B) for examples of local funding opportunities.

**General Funds** – Emphasize multimodal transportation when prioritizing transportation projects as part of the local Capital Improvement Program (CIP) process

**Targeted Funds** – There are many examples of opportunities to leverage local funds targeted at active transportation:

**Levies** - Local communities in the Puget Sound region have a strong history of supporting packages that benefit increased infrastructure for bicycling and walking. Some examples are listed below:

- The City of Kirkland voters approved the City Street Maintenance and Pedestrian Safety and City Parks Maintenance, Restoration, and Enhancement Levy as permanent property tax levies – passed November 2012
- King County Parks, Trails, and Open Space Replacement Levy – passed August 2013
- Seattle Parks and Green Spaces levy – six-year levy passed in 2008
- Mukilteo City Park Purchase Levy Proposition - November 2012
- Seattle’s “Bridging the Gap” Levy – nine-year levy passed in 2006 which funds programs to address the maintenance backlog. Funding also supports projects that implement the
Bicycle and Pedestrian Master Plan, creates a Safe Routes to School Program, improves transit connections, etc.

Community Block Grants and Matching Funds examples

- Seattle Neighborhood Matching Fund grants – Includes Small Sparks Fund (year-round awards up to $1,000), Small and Simple Projects Fund (awards up to $25,000) and the Large Projects Fund (awards up to $100,000)
- City of Redmond local grants – Grant awards to fund projects that stimulate cultural vibrancy in Downtown Redmond through the cultural arts while challenging residents to become an active participant in civic life and cultural advocacy. This example does not explicitly fund infrastructure, but art and cultural advocacy are important elements in encouraging people to bike and walk as well as creating safe communities.

Transportation Benefit Districts – Councils can pass vehicle license fees up to a certain amount without a vote of the public and a higher amount with a vote of the public.

- Mountlake Terrace passed a Transportation Benefit District in order to help fund their main street project that includes substantial sidewalk improvements.

Local Improvement Districts – Property owners affected by a project vote on whether or not to help pay for an improvement (City of Kent is a good local example).

Excise taxes – The Regional Transit Authority (RTA) tax that funds Sound Transit

Economic Development funding can also be leveraged to enhance safer walking and bicycling communities. Increasing evidence continues to demonstrate that there are many economic development benefits from increased bicycling and walking such as increased foot traffic into local businesses, bicycling-related businesses, and tourism within walkable communities.

Leveraging Opportunities

Policy Support

Strong comprehensive plans and policies are the first step in implementing active transportation. Having strong policy statements in local plans that support multimodal activities and increased emphasis on safety will help map out the direction for project planning. In addition, some funding sources give emphasis based on whether a project is supportive of or specifically listed in local plans.
Including **Complete Streets policies** within local comprehensive plans can also reinforce the implementation of multimodal alternatives. [Smart Growth America](http://www.smartgrowthamerica.org)\(^{162}\) has definitions and model language that can assist jurisdictions with defining and implementing Complete Streets policies.

Having strong language that supports safe walking and bicycling environments within **Ordinances and Code Citations** facilitates adequate provisions as development occurs.

- **Example:** City of Redmond zoning code: Condition upon developers for Land Use Permit Review:
  
  *Such conditions may include, but are not limited to the following: the requirement of easements, covenants, and dedications; “fees-in-lieu-of”; the installation, maintenance and bonding of improvements, such as streets, landscaping, sewer, water, storm drainage, underground wiring, sidewalks, and trails; and the recording of any conditions to achieve the objectives of the Redmond Zoning Code with the King County Department of Records and Elections.*

Opportunities with development mitigation: development agreements are opportunities to encourage developers, as part of the mitigation process, to contribute to the transportation systems surrounding development.

**Interdepartmental Coordination**

Another way to maximize resources and demonstrate a strong project is to **coordinate interdepartmentally**.

The City of Tacoma coordinates interdepartmentally with a **Design Integration Review Team** and in doing so, Tacoma is able to plan ahead, maximize resources, and demonstrate interdepartmental coordination which can be helpful when applying for funding. Their review team includes staff from the following departments:

- Urban Forester
- Environmental Services Division (e.g., ecology, stormwater runoff)
- Public Works
- Transportation
- Arts (and related coordination with arts plans)
- Mobility
- Historic Preservation
- Utilities
- Health
- Transit

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**Parks Departments** and Transportation Departments should also coordinate when planning for safe walking and bicycling environments. Parks and open spaces are important amenities as well as destinations for people out bicycling and walking.

**Schools** also play an important role when educating young people and parents about safe transportation alternatives. **Safe Routes to Schools** programs should include enhanced infrastructure as well as education and encouragement programs.

Coordination with **utility departments** can often save time and money and even be mutually beneficial. Timing transportation projects with utility maintenance can save effort when reconstructing roadways. There are also opportunities for shared use of space. For example, power line corridors can provide available connected parcels for trail alignments, particularly in dense urban environments where little available right-of-way remains for shared use pathways. Trails can sometimes be placed on top of levees for public use when planning for flood management. Off-road trail corridors are often great places to lay fiber-optic cable because the pavement is not disturbed as often as it is along paved roadways.

With an increased emphasis on the health benefits of bicycling and walking, **health departments** are a great resource when promoting increased bicycling and walking within communities, particularly when planning for safety, education and encouragement activities.

**Within transportation departments**, it is important to consider all modes of travel when planning for projects for completing safe and fully integrated walking and bicycling networks. Roadway and transit projects should consider walking and bicycling access when planning for improvements. This applies to new facility construction as well as when maintaining existing facilities.

Interdepartmentally is not the only way to maximize resources. **Working with local residents, community groups and the private sector** are great ways to leverage opportunities:

- Steward groups or “friends of” groups are often willing to participate in maintenance partnerships
- Property easements can be accessed by working with land owners
- Mile markers or name plates can be sold to help fund trails or other amenities such as benches
- Partnerships with private sector can be a great resource when maximizing resources. In the Puget Sound region, there are several examples of this:
  - Microsoft contributed in kind right-of-way to help build the 36th Street Bridge in Redmond.
  - Amazon.com provides public benefits package that includes the purchase of a new streetcar for the South Lake Union line, along with designing new a new bicycle track and other pedestrian amenities near their campus in downtown Seattle.
Working with other Agencies

Coordination with other agencies can help maximize projects to include added features or make a project even more robust than originally planned.

- The Department of Ecology has programs that can contribute to aspects of projects that also help control storm water such as permeable sidewalks and rain-gardens.
- The National Parks Service provides technical assistance around trails, and supports community-led natural resource conservation and outdoor recreation projects across the nation.
- The Environmental Protection Agency also provides technical assistance to communities planning for smart growth, including planning for changing auto-oriented roadways to multimodal community streets. The EPA also has grant opportunities related to water management and projects near wetlands, streams, rivers or along watersheds.
- Coordination with Neighboring Jurisdictions can maximize resources. As an example, the cities of Edgewood, Pacific, Milton and Sumner worked together to create a plan for the gaps in the Interurban Trail that is planned to go through each of their respective communities.

Interlocal agreements are an important tool for coordinating with partner agencies. These agreements can help facilitate partnerships and establish roles for each entity. Some examples are partnerships between a land-owner, a local jurisdiction, and an entity responsible for maintenance of a facility, or even regarding reciprocal use of recreational facilities.

Keeping Competitive and Staying Visionary

Plan Ahead! Ensure local comprehensive plans have strong policy statements. Projects applying for funding are increasingly more competitive when clearly demonstrating their support for local planning visions, such as:

- Prioritize bike routes and pedestrian needs
- Subarea plans
- Transit access plans
- Plan ahead and include a strong transportation element of local comprehensive plans

Increasing Opportunities for Success in a Competitive Processes

- Being visionary/innovative/thinking “out of the box”
- Have projects shovel-ready or “waiting in the wings” if and when unexpected or unplanned funding does become available
- Advanced data collection to justify project need
- Using multiple sources of funds to complete projects (i.e., leveraging)
- Early coordination with internal partners and stakeholders is important for demonstrating strong projects when applying for funds

Additional Resources

National Center for Safe Routes to School (webpage has additional resources for funding)
5.3 Monitoring

It is important to evaluate the progress and results of regional planning and project implementation. Only by monitoring the effects of building bicycle and pedestrian facilities and measuring the results of public information programs can government agencies, citizens and public officials know and understand the benefits of such investments. Armed with solid objective data about the impacts and results of such investments, the public may be more supportive of future bicycle and pedestrian improvements and programs.

MAP-21 has a focus on monitoring and has established national goals in the area of safety, system reliability, infrastructure condition and congestion reduction. Additionally, VISION 2040 and Transportation 2040 monitoring programs are in the process of being developed as part of MAP-21 requirements. Together with collaboration and data collection, the region has the opportunity to better monitor active transportation. A primary goal of this plan is to work with the BPAC to develop targets related to the Transportation 2040 monitoring program which is currently under development.

For information to develop local monitoring programs, the Environmental Protection Agency (EPA) produced a guidebook\textsuperscript{163} that describes opportunities to incorporate environmental, economic, and social sustainability into transportation decision-making through the use of performance measures. For each measure, the guidebook presents possible metrics, summarizes the relevant analytical methods and data sources, and illustrates the use of each measure by one or more transportation agencies. The 12 profiled measures are:

\begin{itemize}
  \item \textbf{Bicycle and Pedestrian Implementation Strategy}
  \item \textbf{OBJECTIVE #15:}
  \item \textit{MONITOR THE PROGRESS OF THE IMPLEMENTATION of Destination 2030’s regional bicycle and pedestrian system plan, and assess the effects of investments made.}
\end{itemize}

• Transit accessibility
• Bicycle and pedestrian mode share
• Vehicle miles traveled per capita
• Carbon intensity

• Distribution of benefits by income group
• Land consumption
• Bicycle and pedestrian activity and safety
• Bicycle and pedestrian level of service

Common Measures and Uses

In a PSRC document titled *What’s Health Got to Do with Growth Management, Economic Development and Transportation?*\(^{164}\), guidance and a series of measurable objectives are given that can be used to monitor health considerations related to land use and transportation. These can be used to track progress in achieving the goals of health-related policies and provisions.

• Monitoring Health and Active Living

Work with health agencies and the academic community in the four-county region and with local jurisdictions to identify measures for assessing environmental and public health related to:

  o Land use, including soil contamination, noxious uses, etc.
  o Water quality
  o Air quality
  o Walkability and bikeability

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• Work with partner agencies, including the Washington State Department of Transportation/Urban Planning Office and the University of Washington, to develop measures for assessing the walkability and bikeability of urban environments. Collect “use” data for bicycle and pedestrian trip-making, similar to the information collected for vehicle traffic and transit ridership. Routinely assess sidewalks and pathways in designated regional growth centers.

The table below is a list of commonly used measures from WSDOT’s Bicycle Facilities and Pedestrian Walkways Plan that can be used for ongoing regional monitoring.

5.4 Infrastructure and Facility Design Guidance

Infrastructure and facility design, namely engineering, is one of the important E’s often referred to when planning for active transportation. Safe, well-maintained walkways and bikeways can be created with operational and physical improvements that reduce speeds and potential conflicts with motor vehicles. This section will show examples of engineering solutions that can be implemented to create safe walking and bicycling environments and provide additional resources from commonly referenced design guidance documents.

Universal Design

Universal design is the concept of designing everything to be usable to the greatest extent possible by everyone, regardless of their age, ability, or circumstance. It ensures accessibility through seven guiding design principles\(^{165}\): equitability, flexibility, intuitive simplicity, perceptivity, tolerance, minimal physical exertion, and size and space appropriateness.

According to the FHWA\(^{166}\), every transportation agency “has the responsibility to improve conditions and opportunities for walking and bicycling and to integrate walking and bicycling into their transportation systems.” This policy statement encourages transportation agencies “to go beyond minimum standards” for safe and convenient facilities. In addition, “the design and construction of new


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facilities should anticipate likely future demand and not preclude the provision of future improvements such as bridge improvements that anticipate future bicycle and pedestrian usage for many years to come.

In December 2013, Washington State became the first state to officially back the National Association of City Transportation Officials (NACTO) Urban Street Design Guide, which provides best practice guidelines for designing complete streets that consider the needs and benefits of all road users.

“We not only endorse this guide, we’re also working toward adopting it into our policies and processes,” said state Transportation Secretary Lynn Peterson. “This guidance supports our strategic planning and practical design emphasis. It also builds on local partnerships and encourages early collaboration to ensure we are considering a community’s unique transportation needs.”

Other Resources:

- Guidelines for Analysis of Investment in Bicycle Facilities - National Cooperative Highway Research Program
- Urban Street Design Guide, National Association of City Transportation Officials
- National Association of City Transportation Officials (NACTO) Urban Bikeway Design Guide
- ITE Recommended Practice "Design and Safety of Pedestrian Facilities"
- Bicycle Boulevard Guidebook – Alta Planning, Portland State, Institute for Bicycle and Pedestrian Innovation
- Fundamentals of Bicycle Boulevard Planning and Design – AARP
- Manual on Uniform Traffic Control Devices, Federal Highway Administration
- Bicycle Facilities and the Manual on Uniform Traffic Control Devices, Federal Highway Administration
- Designing Walkable Urban Thoroughfares: A Context Sensitive Approach: An ITE Recommended Practice, Institute of Transportation Engineers
- Public Rights of Way Accessibility Guidelines, U.S. Access Board


5.5 Active Transportation in Rural Areas

Rural areas and small towns can help local main streets thrive by encouraging more people to walk and bike within the core of rural towns. Making improvements for pedestrians and bicyclists can become an opportunity to reinvigorate town identity and community character. Signage, lighting and other amenities that restore local history or highlight features of small towns are symbiotic improvements with creating safer walkable and bikeable environments.

Rural areas often have considerable challenges when accommodating all users due to narrow roadways, high speeds and few parallel local roadways that can act as a safe alternative to walking or bicycling on rural highways. In these places, there are strategies that are more contextually appropriate for these types of challenges. Roadways that connect rural towns can accommodate active transportation users by keeping wide shoulders clear of debris and by having adequate space free of rumble strips. Assessing network connectivity, locations of transit stops and destinations can help rural communities and counties with vast unincorporated areas better prioritize where treatments are needed. These strategies can ensure the safety of all users of the roadway when choosing active transportation to connect between rural towns and when enjoying the community character of local main streets.

Federal Guidance for Rural Town Centers and Corridors

In rural areas, the Federal Highway Administration\(^{170}\) calls for paved shoulders to be included in all new construction and reconstruction projects on roadways used by more than 1,000 vehicles per day. Paved shoulders have safety and operational advantages for all road users in addition to providing a place for bicyclists and pedestrians to operate.

Rumble strips are not recommended where shoulders are used by bicyclists unless there is a minimum clear path of four feet in which a bicycle may safely operate.

Additional Resources:

* Putting Smart Growth to Work in Rural Communities - ICMA
* Smart Growth in Small Towns and Rural Communities – EPA
* Examples of Complete Streets Policies in Rural Communities and Small Towns - National Complete Streets Coalition

5.6 Preservation and Stewardship

Maintaining condition data for sidewalks, bicycle facilities and for shared-use paths is the first step toward preserving and maintaining the active transportation networks. As roadways are maintained, preserving the bicycle and pedestrian facilities will ensure that existing assets continue to function properly and that safety is maintained.

As part of the USDOT Policy Statement on Bicycle and Pedestrian Accommodation\(^{171}\), a recommended action includes improving pedestrian and bicycle facilities during maintenance projects. “Many transportation agencies spend most of their transportation funding on maintenance rather than on constructing new facilities. Transportation agencies should find ways to make facility improvements for pedestrians and bicyclists during resurfacing and other maintenance projects.”

Data Collection Supports Stewardship

A good example of a local jurisdiction within the central Puget Sound region that has committed to stewardship is the City of Lakewood\(^{172}\). The first step toward preserving and maintaining active transportation networks is to ensure data collection includes active transportation facilities. As part of Lakewood’s pedestrian and bicycle plan, the city has committed to these data collection efforts. They city acquired the hardware and software to quickly develop and deploy a detailed data collection routine that addresses critical system components, recording field data with very high geo-positioning accuracy so the city can quickly learn and adapt the data collection capabilities for a variety of needs.


Incorporating the sidewalks, curb ramps and other features has helped the city prioritize investments.

Communities need to consider the entire right-of-way when collecting data for asset management systems in order to preserve and maintain active transportation networks. Asset management systems should include the shoulder, sidewalks, ramps, and shared use paths.
As stated throughout this report, the benefits of Active Transportation are numerous. Encouraging more people to walk and bike and to take transit implements many of the region’s VISION 2040 goals in a cost effective and sustainable way. A key component of this plan is to encourage planning for pedestrian and bicycle networks that help to prioritize investments, overcome barriers and that allow people of all ages and abilities to access local and regional destinations safely. In addition, this plan emphasizes that networks are not the only factor when encouraging more people to walk and bike. Other considerations such as lighting, way-finding and safe crossings along with education and encouragement are all additional factors that make a difference for people as they make the choice to walk or bike.

To this end, the Active Transportation Plan provides resources for local communities when planning for pedestrians and bicyclists such as information for developing bicycle and pedestrian plans, what to consider when collecting data, information on funding and leveraging opportunities and how to incorporate health and equity when planning for active transportation. In addition, this plan outlines how the region is working toward these goals. This includes the VISION 2040 and Transportation 2040 policies that support active transportation and the steps the Bicycle and Pedestrian Committee will take to continue to work towards increasing active transportation throughout the central Puget Sound region.