King County Metro Transit
Access to Transit Report

Defining access and summarizing access to transit habits

July 1, 2015

Prepared for:
King County Council

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Introduction

About this report

This is the second report developed as part of King County Metro's two-year Access to Transit Study required by Ordinance 17641. This report addresses (1) defining access and (2) summarizing access to transit habits, in response to Motion 14319. It combines the requirements of Section B and C into one document. The full language of Motion 14319 can be found in Appendix C.

The report is divided into three sections:

1) Access to transit—what we have heard
This section summarizes what Metro has heard from regional leaders, agencies and others about how they define access to transit and the issues they have identified.

2) Actions Metro is taking and planning
The section presents actions Metro is taking and considering in response to what we have heard.

3) Supporting data and research
This section presents information about other transit agencies' policies and practices concerning access, emerging metrics for evaluating access, and data about how people in King County access transit. This information informs current and planned actions to assess and improve access.

This report reflects and builds on the work of the Puget Sound Regional Council (PSRC) Transit Access Assessment and other studies in the region such as the Sound Transit Parking Pilot, the Washington State Department of Transportation (WSDOT) Park-and-Ride Lot Efficiency Study, and the King County-Sound Transit Nonmotorized Connectivity Study.

We also coordinated with and obtained feedback from the King County staff members of the PSRC Transit Access Working Group. These staff members include designees of the Sound Cities Association as well as representatives of the cities of Bellevue and Seattle.

The Access to Transit Study

The Access to Transit Study will be completed over two years. It will consider the many factors that affect the public's access to the transit system and how access might be improved, including infrastructure that provides access, how access needs are reported and funded, and regional coordination and policies.

What has been completed

The Access to Transit Work Plan and the Phase 1 Report have been completed.

1) The Access to Transit Work Plan was transmitted on December 31, 2013. Per Ordinance 17641, the work plan includes a timeline, milestones, lead agency and scope to define:

    a. the role of park-and-rides and other community infrastructure related to access to transit;
    b. industry best practices and innovative approaches to improve access to transit capacity including but not limited to parking management, technology, nonmotorized corridors, and transportation demand management;
    c. options for regional needs reporting and funding of access to transit infrastructure;
    d. model policy language that supports access to transit through transit-oriented communities and infrastructure; and
    e. potential updates to the Strategic Plan for Public Transportation and Metro Service Guidelines to clarify the role, measurement and funding of access to transit as they relate to the King County Metro transit system.

The work plan divided the study into two phases, with a report due at the end of each phase.

➢ **Phase 1**: Information gathering (elements a and b) – due December 31, 2014
➢ **Phase 2**: Regional coordination and policy development (elements c, d and e) – due December 31, 2015

The request for this July 1, 2015 report was added when the Phase 1 report was received.

2) The Phase 1 Report was transmitted December 31, 2014. This report reviews the different modes used to access transit and the infrastructure that supports those modes, what some agencies are doing to guide and improve transit access planning, and what approaches agencies are considering or have implemented to improve access to transit.

Upcoming products

The Phase 2 Report is due December 31, 2015. Phase 2 will explore access needs reporting and funding as well as regional coordination and policies. It will lay out policy issues related to different strategies for improving transit access. It will also review regional and local plans that address transit access, report on ongoing local studies on transit access infrastructure, and consider how best practices and innovative approaches could be applied in King County. Metro will work closely with the PSRC and the Transit Access Working Group and will continue coordinating with our jurisdiction partners as we develop this report.

The specific tasks associated with Phase 2 are listed at the end of Section II.

I. Access to transit- what we have heard and how we define it

An essential aspect of a transit system is access—how people get to transit service and how they get from transit service to their final destinations.

Over the past year, King County Metro has had numerous discussions with jurisdiction and agency staff, the King County Council, the Regional Transit Committee and others in the region about access to transit in our service area. The following topics have come up consistently:

- **Access to transit depends on many factors**. These include proximity to transit, quality of walking and biking connections, ability to park at park-and-rides, and the type and amount of transit provided at the access point.

- **People access transit differently in different parts of King County**. How people get to transit varies depending on the surrounding environment, land use and the local transportation network.

- **Park-and-rides are overcrowded**. People in some areas do not have convenient access to transit as a result. Particular points we have heard:
    o Lots with high-quality service often fill early, while other lots remain underutilized.
    o When park-and-ride lots fill up early, people are not able to use transit throughout the day.
    o People may choose to drive because they can't count on finding parking.
    o For some people, creating more park-and-ride capacity is a priority.
    o Leased lots and shared parking may be cost-effective opportunities to increase parking.
    o Expanding park-and-ride facilities is most appropriate where the concentrated demand from a park-and-ride is needed to support higher quality service and high quality arterial or local transit service is not planned or anticipated.
    o Pricing and management of park-and-ride facilities may be opportunities to increase efficiency.

- **Major hubs beyond park-and-ride lots are also important points of transit access that should be considered.**

- **Walk and bike connections are inadequate or not an option in many areas**.

- **A number of strategies could improve access and address last-mile connections.** Nonmotorized improvements, improved wayfinding and passenger information, bike parking, and supportive services such as bike share and car share should be considered.

- **Transit-to-transit connections are also important**, especially as the Sound Transit Link Light Rail network grows

- **Partnerships will be essential to improve access**. Metro, other transit agencies and jurisdictions will need to work together. Many of the elements that affect transit access, such as sidewalks and streets, are the responsibility of jurisdictions.

How do we define "access to transit"?

It is clear from the discussions about transit access that as Metro works with partners to evaluate and plan improvements to access, we must define access broadly and consider all of the many factors that affect people's ability to reach transit.

Access to transit can be broken down into four aspects:

- The quality and ease of the connection, including the infrastructure, amenities and technology that the rider uses to connect to transit service
- The mode the rider uses to connect to transit service, such as walking, biking and driving
- The environment where the access point is located, including land use and the street and sidewalk network
- The type of service the rider wants to connect to

With this broad definition of access, it takes into account such variables as whether there are complete, safe sidewalks, whether riders feel secure walking to transit stops or waiting at park-and-rides, whether there is parking available at a park-and-ride, whether there is a bench available for those with limited mobility to sit while waiting for a bus, or whether there is room to safely store or transport a bicycle.

II. Actions Metro is taking and planning

Based on the issues that have been identified, as well as data and transit industry practices that we have researched (summarized in Section III), Metro has begun taking steps to better understand and improve access to transit. We have also identified potential actions that will be considered further in the Access to Transit Phase 2 Report, in Metro's Long-Range Plan, and in various regional processes. The ongoing and planned actions are summarized below. They are grouped into three main topic areas:

1. **A comprehensive approach to access to transit**

2. **Overcrowded park-and-rides**

3. **Incomplete walk and bike connections**

1. A comprehensive approach to access to transit
We have heard that Metro should consider access to transit in a comprehensive fashion that acknowledges all the factors that affect access.

This applies to both how Metro defines access and how we measure and evaluate access to identify areas where improvement is needed. A common transit agency metric for access to transit is the number of people who live or work within ¼ mile of a bus stop or station. In addition to considering how close people and jobs are to bus stops, access metrics should reflect factors such as the quality of the pedestrian or biking environment or whether a park-and-ride has capacity for those who wish to use it. The frequency, span or destinations of the

service available at the transit stop should also be considered. People may be able to get to a bus stop, but the service may not be available at the right time, go to the right place, or be reliable and convenient.

Actions

1.1. **Measuring access to frequent service**
In our preliminary work on Metro's Long-Range Plan, we are measuring the percentages of the population and jobs that are within ½ mile to frequent transit. This information is in Section III of this report and is included the "existing conditions" study for the long-range plan. This will also be criteria as Metro considers future service networks. Metro will also add distance from frequent service as a metric to our annual Strategic Plan Progress Report.

The Access to Transit Phase 2 Report will also consider ways to improve transit access needs assessment and reporting.

1.2. **Adding a time consideration**
Distance to transit can also be described in terms of time. Metro has associated an estimated walk time with our analysis of distance to transit in the existing conditions study mentioned above.

The Long-Range Plan will also include a comprehensive analysis of the number of jobs and households that can be reached within 30 minutes by transit under different service scenarios. This will be similar to the transit mobility analysis mentioned under "emerging metrics" in Section III. This evaluation will help guide the development of an equitable service network with the most effective connections for the long-range plan. We may be able to apply this type of analysis more broadly to our service planning and measurement.

1.3. **Literature and best practice review**
By reviewing literature and best practices as part of the Access to Transit study and other efforts, Metro is developing a base of information about modes of access and what improvements support the different modes. Data helps inform us about how people typically access transit in different parts of King County. This information can help clarify the relationship between the environment and the preferred mode of transit access. This information can be applied as we lay out steps to address access concerns in different areas of the county in the Phase 2 Report.

1.4. **Long-Range Plan**
Metro's Long-Range Plan will present a shared vision for a future public transportation system that gets people where they want to go and helps our region thrive. The plan will describe an integrated network of transportation options, the facilities and technology needed to support those services, and the financial requirements for building the system.

The plan will identify what increases in park-and-rides are needed in King County to support the future service network. It will also describe the types of areas (land use,

density, type of roadway network, etc.) that best support future park-and-ride locations. It will also include a program for a prototypical park-and-ride lot that considers the quantity of spaces, whether parking is structured, the design of transfer facilities and nonmotorized elements. The plan will also address Metro's role in providing pedestrian and bicycle infrastructure and conditions under which such investments are warranted. The Long-Range Plan will be drafted by mid-2016.

1.5. **Regional transit access assessment**

Metro is participating in the PSRC Transit Access Working Group, as part of the PSRC regional transit access assessment. This assessment of regional transit access needs will support the next update to the region's long-range transportation plan, Transportation 2040. PSRC has convened a Transit Access Working Group for this effort that includes Metro staff. PSRC will be working closely with the Transit Access Working Group to conduct eight case studies of major sites of transit service (e.g. transit centers, park-and-rides, etc.) around the region that are facing a range of transit access challenges. These studies will assess various characteristics associated with access to clearly identify existing and potential transit access needs and challenges. In addition, PSRC and the Transit Access Working Group are developing a comprehensive set of programmatic and infrastructure strategies to increase transit access and to define the conditions in which they are most useful.

According to PSRC's work plan, recommendations on regional transit access needs are expected by December 2015. These will inform the update to Vision 2040 and Transportation 2040.

Our Phase 2 Report will draw on the information compiled for this effort.

1.6. **Metro's Service Guidelines Task Force**

The Task Force is analyzing how transit service is evaluated and allocated. As part of that review, it is considering how the performance of different types of transit service is measured, approaches to evaluating geographic value, and possible minimum service standards.

1.7. **Continued commitment to gathering and using data**

Metro will continue to compile data on park-and-ride use, including new types of data that may become available. Draw area studies, for example, help us understand how far people travel and from where. This information might suggest alternative strategies, such as areas where additional local connective service may be appropriate.

Through the long-range planning process, Metro will consider what the right "travel shed" is for a park-and-ride. Draw area studies suggest that people are willing to travel farther than two miles to reach a park-and-ride, which is the distance our current measure reflects.

2. Overcrowded park-and-rides

There is a growing call for action in response to overcrowding at many of the region's park-and-rides. Addressing this issue will require a multi-tiered, multi-agency response that includes both demand-side and supply-side approaches. New park-and-rides will be expensive to build and would require land in appropriate locations with easy access to travel pathways. Another challenge is that park-and-ride lots are not necessarily consistent with the land use and development goals of many jurisdictions.

To address these challenges, efforts to build new park-and-ride spaces will require partnerships among transit and transportation agencies, local jurisdictions and private developers. Strategies will be needed to help manage demand and make park-and-ride lots as efficient as possible and available to as many users as possible.

Many of the region's agencies, including Metro, Sound Transit, WSDOT and PSRC, are conducting or have recently completed studies and reports exploring strategies to address overcrowding in park-and-rides. These studies include the Sound Transit Parking Pilot[1] , Sound Transit's System Access Paper[2], and WSDOT's Park-and-Ride Lot Efficiency Study[3]. Strategies they consider include managing demand by charging users to park and offering incentives to those who carpool. Initial results suggest that people are willing to pay to park if it means they get a guaranteed parking spot. At some lots, especially those that fill early, people have also shown some willingness to form carpools in order to get a guaranteed parking spot.

Actions

2.1 Developing and implementing a Metro parking management program
Metro is in the early stages of developing a parking management program that will look at opportunities to manage our park-and-rides more efficiently. This means both participating in regional discussions (described in more detail under 2.2) to ensure a coordinated effort among the agencies, as well as more actively managing and tracking the park-and-rides Metro owns and operates.

Metro currently tracks utilization of all the park-and-rides in King County, regardless of owner or operator, and develops quarterly reports. We also manage a leased-lot program which we could expand if resources are available.

Metro's expanded parking management program would include three elements:

1) Optimize the efficiency of existing park-and-rides
Many steps could be taken to use existing park-and-rides more efficiently, ranging from those that could be implemented relatively quickly at low cost, to efforts that take more time and resources.

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[1] http://www.soundtransit.org/Rider-Guide/Parking/Parking-pilot-project
[2] http://www.soundtransit.org/Documents/pdf/projects/LRPupdate/201410_SystemAccessIssuePaper.pdf
[3] http://www.wsdot.wa.gov/Research/Reports/800/830.1.htm

Potential steps include:
- Consider restriping park-and-rides to maximize the parking available
- Analyze lots with lower utilization and consider what steps could be taken to attract more riders
  - Identify potential opportunities to increase service options
  - Promote and provide information about less-used lots
  - Assess possible deterrents to the lots—is security an issue? Would better lighting, comfortable shelters of improved sidewalks to the bus stops help?
- Consider the feasibility and the value of selling or redeveloping underutilized lots
- Consider opportunities to continue to support vanpool and carpool customers while maximizing access to fixed transit at park-and-ride lots

2) Consider management strategies to maximize the number of customers using park-and-rides
Two potential strategies are:
- **Charge for parking.** Two primary reasons to impose a parking fee at park-and rides are to raise revenue and to manage demand. The primary focus in recent conversations has been on managing demand. Highly utilized and full lots would be likely candidates for parking fees. Imposing a fee could shift some of the demand elsewhere; for example, it could encourage people to use less-full lots or to seek other means of reaching transit such as walking to a local bus stop. Sound Transit's parking pilot and WSDOT's study did some initial testing of willingness to pay. Both of those studies suggested that people would be willing to pay if it meant they would get a guaranteed parking spot, giving them more flexibility about when they arrive at the park-and-ride. When lots fill on a first-come, first-served basis, the high-demand lots fill early and require people to adjust their commutes. With a permit program, users may be able to arrive later. This is more convenient for users and helps spread the demand, reducing impacts on surrounding streets and connecting transit service.

- **Encourage higher occupancy in vehicles parking at park-and-rides**. One strategy to maximize the number of riders who can access transit via park-and-rides is to increase the number of transit riders served per stall. Implementing programs that encourage ridesharing to park-and-rides is one way to accomplish this.

Several challenges must be considered as park-and-ride management strategies are explored. Strategies to charge a fee or encourage higher occupancy could have an impact on nearby lots that are not managed. Many lots are jointly owned, and were constructed with different sources of funding, affecting how parking charges are could be implemented and how the revenue could be used. It is also important to make payment convenient, and to consider opportunities to enable payment through ORCA or a subsequent smart card. Enforcement of payment is an issue needing further discussion and regional coordination. Social equity is another consideration as parking fees are explored. Metro and other agencies in the region should consider these topics as they discuss a regional parking program.

An additional potential strategy is to use technology to help manage park-and-rides. For example, real-time information about parking availability could help people find out if and where parking might be available. Parking technology is part of the Sound Transit Parking Pilot that is just wrapping up. Results from that pilot could inform decisions about further use of that approach.

Metro's parking management program might also be expanded to be a "transit access management program" that would consider nonmotorized access infrastructure and improvements. A program like this could look at how to make walking or biking to park-and-rides easier and more attractive, how to improve nonmotorized access to major transit hubs that do not have parking, and how to improve nonmotorized access across the system. This action would be aligned with the Goal S.1 of the County's Strategic Climate Action Plan.

3) Explore opportunities to increase park-and-ride-related parking supply through partnerships with other agencies, jurisdictions and private businesses and other strategies.

In some instances and locations, management and other strategies to maximize efficiency may not be sufficient to meet demand. In those locations, shared or leased parking could be a good option. In places where partnership opportunities exist, the best strategy may be to build additional parking.

- **Leased lots and shared parking.** The Phase 2 report will take a closer look at the leased-lot and shared-parking programs and consider possibilities to expand those programs as cost-effective ways to increase park-and-ride capacity.

- **Park-and-ride pricing in multifamily developments**. Metro has a grant-funded project to explore strategies to make available and price underutilized parking in multifamily developments near high-capacity transit corridors. This could provide another cost-effective way to provide more parking

- **New park-and-ride capacity.** Sound Transit has added park-and-ride capacity to the region in recent years, and will develop additional parking as part of the extensions of Link light rail under Sound Transit 2.

  Metro has not had funding for park-and-ride expansion in its financial plan in recent years. However, in areas where park-and-rides are primary access points to transit, it may be appropriate for Metro to partner with other agencies and jurisdictions in the region to consider opportunities to expand park-and-ride capacity. Metro's Long-Range Plan will consider this question and analyze recommended park-and-ride increases. The plan will consider how many stalls might be appropriate to support a future service network and will identify the types of areas where park-and-ride investment would be appropriate.

  Metro's Transit Access Study combined with the Puget Sound Transit Access Assessment could also lay the groundwork for conversations about where and what type of areas warrant consideration of increased park-and-ride capacity. Any expansion

of capacity would be done in partnership with other agencies, jurisdictions and private sector representatives.

Many components of a Metro parking management program will be discussed and considered over the next few months, especially in relation to the regional parking discussions taking place in tandem with Sound Transit's efforts to design and implement a parking permit program.

2.2 Regional parking program discussions
Sound Transit followed up its parking pilot with a plan to design and start a parking permit program, described further below. The program has these goals:

    (1) maximize the number of transit riders served per parking stall
    (2) increase the efficiency of Sound Transit facilities and services
    (3) discourage use by non-transit riders and increase customer satisfaction.

Sound Transit's timeline is to develop a proposed program design by fall 2015. Their goal is to have a permit program in place when the new Angle Lake Station opens.

Sound Transit's program has prompted the region to consider moving toward a regionally coordinated parking management program. PSRC has convened a regional parking committee for this purpose.

3. Incomplete walk and bike connections

About 93 percent of transit users access transit by walking or biking. However, these modes are not good options in some areas because of conditions such as incomplete sidewalks, unsafe walking and biking routes, poor protection from weather, or big hills.

Metro recognizes the value of nonmotorized infrastructure and facilities to promote good access, and is collaborating with jurisdictions and others to improve them.

Actions

3.1 Use new tools to identify and prioritize investments
Metro is gathering documentation about improvements that support nonmotorized access to transit. New tools are emerging, such as the Nonmotorized Connectivity tool[4] that can help agencies and jurisdictions prioritize projects that will improve access and increase ridership. Metro and Sound Transit have been actively promoting and training jurisdiction staff on this tool.

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[4] http://metro.kingcounty.gov/programs-projects/nmcs/

3.2 Transit Supportive Toolkit[5]

Metro also worked with the PSRC on the Transit Supportive Toolkit to guide jurisdictions in creating transit-supportive environments.

3.3 Partnerships

Partnerships are particularly important. In many cases, local jurisdictions are responsible for transit-access infrastructure, but are not able to make the major investments required on their own. Consistent with Strategic Plan strategies 3.2.2, and 3.3.2, Metro continually pursues collaboration and partnerships with local jurisdictions and agencies to improve pedestrian and bicycle networks. Collaboration can include working together to find grant and other funding opportunities.

The Access to Transit Phase 2 Report

The Phase 2 Report will be an important next step in addressing the three action areas discussed above. It will consider topics related to the development of a Metro parking management program, such as the characteristics of well-used and underutilized park-and-ride lots. It will explore the possible benefits and trade-offs of selling underutilized lots and will also further consider opportunities to expand the leased-lot and shared-parking program.

The Phase 2 report will also begin to highlight potential policy issues related to many of the potential next steps, including parking policies, and also potential updates to Metro's Strategic Plan.

The specific tasks identified as part of Phase 2 are:

Consider options for regional needs reporting and funding of access to transit infrastructure

Task C.1. Explore best practices for tracking and measuring transit access and identifying deficiencies
Task C.2. Consider opportunities to adapt and expand existing reporting efforts
Task C.3. Consider options to develop an assessment of regional transit access needs that could be used to identify potential recommendations to incorporate into the 2018 update of Transportation 2040

Develop model policy language to support and enhance access to transit through infrastructure and transit oriented development

Task D.1. Review literature and other agency plans to identify example policy approaches
Task D.2. Review best practices related to transit-supportive and transit-oriented development (TOD) policy, including approaches to measurement, tracking, reporting and policy development
Task D.3.Identify best practices for transit agencies, and cities, to help enhance access to transit. Findings could inform an access to transit toolkit for jurisdictions

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[5] www.psrc.org/transportation/transit/toolkit/

Identify potential updates to Metro's Strategic Plan and Guidelines related to access to transit infrastructure, including language to clarify role, measurement and funding

Task E.1. Review model policy language, best practices and recommended actions to improve access to transit

Task E.2. Draft potential Metro policy updates to Metro's Strategic Plan and Service Guidelines, based on model policy language, best practices, other study findings, and recommendations

Metro will continue working with our partners as we move forward with this report and the actions we've identified.

III. Supporting data and research- how other agencies address access and how people in King County get to transit

This section summarizes several other transit agencies' policies and practices concerning access, emerging metrics, and data about how people in King County access transit.

How other agencies address access

Metro has reviewed other transit agencies' policies and practices for assessing and improving access to transit as potential models. The following are summaries:

Bay Area Rapid Transit (BART), *San Francisco area*
BART has Station Access guidelines for defining and improving access. The guidelines define access as "the portion of BART riders' trips between their origin, such as home or work, and the station faregates, and between the faregates and their final destination." The guidelines map out ways BART can optimize access to its stations by all modes. BART stations were originally planned for access by cars, and had significant parking, but have since evolved to focus more on access by taxis, buses, walking, bicycling, and other transit. BART is working toward a transit-oriented development style and is encouraging others to do so as well by creating community partnerships. The agency is shifting its focus from auto oriented access to getting people to stations by modes other than single-occupant vehicles.

Washington Metropolitan Area Transit Authority (WMATA), *Washington DC*
WMATA defines access as "a way or a means of traveling to or from a Metrorail station site, or to or from the station entrance." The agency has an objective to increase mobility by improving access to and between transportation options. This includes seamless connectivity between travel modes, pedestrian and bicycle facilities. WMATA also operates 44 parking lots, which offer daily or hourly parking. All of them also have bicycle and motorcycle parking. Thirty-six of the stations also have the option of reserved parking for monthly users. They encourage mixed-use communities within walking distance to transit to make it convenient to travel by public transportation instead of by car.

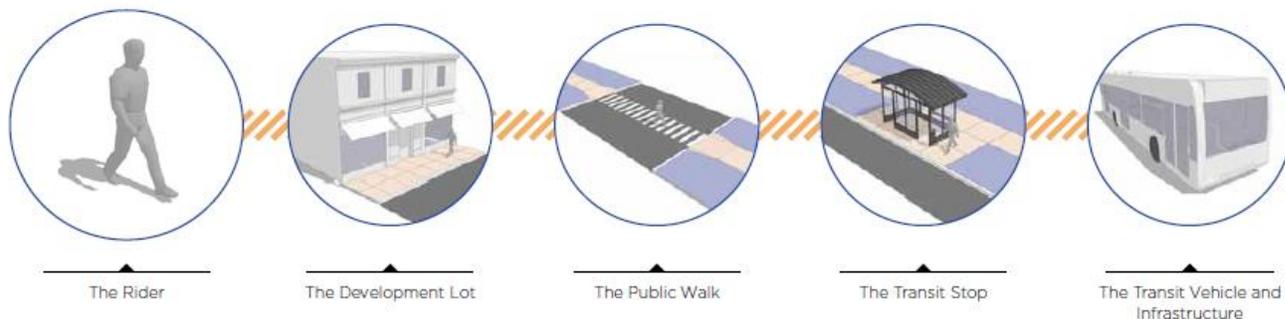**PACE Suburban Bus Service of the RTA[6],** *Chicago*
PACE, the suburban bus division of the Regional Transportation Authority (RTA) in the Chicago metropolitan area, has Transit Supportive Guidelines. These guidelines set forth principles intended to remove barriers to transit use and make bus mobility a viable and convenient alternative. The PACE philosophy is that to have access to effective public transit, every step of the user's trip must be accessible, efficient, safe, and comfortable. The transit system must eliminate barriers—real or perceived—in order to make transit a viable or preferred alternative. That system, from your front door, to the bus, and to your destination, is the subject of these guidelines.

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[6] www.pacebus.com/guidelines/Pace_Design_Guidelines.pdf

The Guidelines recognize five components of a transit trip, four of which relate to access and one being the transit trip experience, as shown in Figure 1.

FIGURE 1: COMPONENTS OF A TRANSIT TRIP

The Rider | The Development Lot | The Public Walk | The Transit Stop | The Transit Vehicle and Infrastructure

- **The rider**
  All aspects of the transit trip should be designed around the rider. When the scale and behavior of people is considered, various aspects of the built environment – from building scale to the amount of time it takes to cross a street – can be configured to remove the barriers that inhibit transit use. Functional aspects of the trip, such as the need for reliable information, must also be considered from the perspective of the rider.

- **The development lot**
  The development lot represents both the origin and destination of the transit trip. For the purposes of these design guidelines, the "development lot" may include designated parcels (i.e. housing, commercial services, libraries, etc.) or public spaces that may serve as destinations (i.e. public open spaces, street environments, campuses, etc.) How the development lot is designed is most frequently dictated by zoning and subdivision regulations.

- **The public walk**
  The public walk is the critical link between the development lot and transit stop. Elements of the public walk include sidewalks, crosswalks, components of accessibility, and landscaping and buffering. Collectively, these elements influence the composition of the "last mile" (or sometimes the "first mile") that often determines the success of transit service.

- **The transit stop**
  The transit stop is the "front door" of the transit service. Stops come in many shapes and sizes, from stand-alone stops with simple shelters to larger transfer facilities integrated into private development. Whatever the size, transit stops must meet basic rider needs in terms of safety, comfort and information.

City of Bellevue, Transit Master Plan[7]
The City of Bellevue's Transit Master Plan discusses access to transit and has a description similar to that of PACE in Chicago.

> *The pedestrian and bicycle environment* serves as the primary link between transit users' point of origin and transit services. All users are pedestrians for some part of their trip, so the provision of an accessible pedestrian network is an essential component of a useful transit system. More direct connections and hospitable facilities encourage greater use of transit. If potential transit users are unable to reach a bus stop easily, quickly, and reasonably directly, they are more likely to consider alternative travel modes if any are available to them.

City of Seattle Department of Transportation[8], *Seattle*
The City of Seattle's Briefing Book for the development of the Seattle Transit Master Plan defines both pedestrian access and bicycle access.

> *Pedestrian access* to transit refers to the extent to which the pedestrian environment, amenities, and infrastructure support passengers in accessing transit services. The quality of these features is paramount in attracting new riders and maintaining existing ridership. Pedestrian infrastructure includes an array of amenities and improvements, including wide and textured sidewalks, platforms, level boarding features, curb ramps, benches, lighting, signage, building overhangs, travel information, wayfinding signage, and bus shelters.

> *Bicycle access.* The quality of bicycle amenities, facilities, and environment affect access to transit service. Improving bicycle access to transit supports existing ridership levels and attracts new transit passengers by providing additional connectivity to other modes and enhancing the overall travel experience. Such amenities and design features as lighting, shelters, wayfinding, traffic calming, and road diets support both walking and bicycling.

Dallas Area Rapid Transit (DART), *Dallas*
DART has a station access program that is designed to make it easier for people to connect to DART by many modes from their home, neighborhood businesses and from hike-and-bike trails.[9] Program elements include options to securely park bikes at rail and transit centers, bike racks on buses and bike hooks on light rail trains. They also have a station access map that identifies walking and biking trails and routes to stations and transit centers. The map defines a three-mile bike shed and a ½ mile walk shed.

DART also publishes guidelines for transit-oriented-development[10] that encourage the creation of transit facilities that are accessible to transit customers and provide community

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[7] www.ci.bellevue.wa.us/pdf/Transportation/BellevueTransitMasterPlan_20140707.pdf#page=100
[8] www.seattle.gov/transportation/docs/tmp/briefingbook/SEATTLE%20TMP%207%20BP%20-%20I%20-%20Pedestrian.pdf
[9] www.dart.org/riding/bikestationaccessprogram.asp
[10] www.dart.org/economicdevelopment/DARTTODGuidelines2008.pdf

development potential to the area. The guidelines promote mixed-use development within a 5-10 minute walk of a transit station. They encourage "park once," which means parking once at a parking locations, then using the transit system the whole day.

Emerging metrics to assess transit access

Some agencies and industry experts are working on new ways to assess and identify issues related to access. Some examples are discussed below.

A time-based travel shed

The King County-Sound Transit Nonmotorized Connectivity Study defined 15-minute walk and bike sheds around selected stations. The 15-minute walk shed was determined by looking at walkable links with an assumed walking speed of 3.5 feet per second. The bicycle shed was determined based on an energy "budget." The amount of energy required for the average person to travel 15 minutes by bicycle on a flat surface was used as the budget. Then the budget was applied to determine how far a cyclist could travel in 15 minutes, taking into account both distance and slope. This method reflects the impacts of terrain. Those travel sheds were then mapped using geographic information system (GIS) tools. Examples of a walk and bike shed in Redmond are shown in Figure 2.

FIGURE 2: TIME-BASED WALK AND BIKE SHEDS

- ● Study Stations
- ▢ 15-Minute Bike Shed
- ▢ 15-Minute Walk Shed
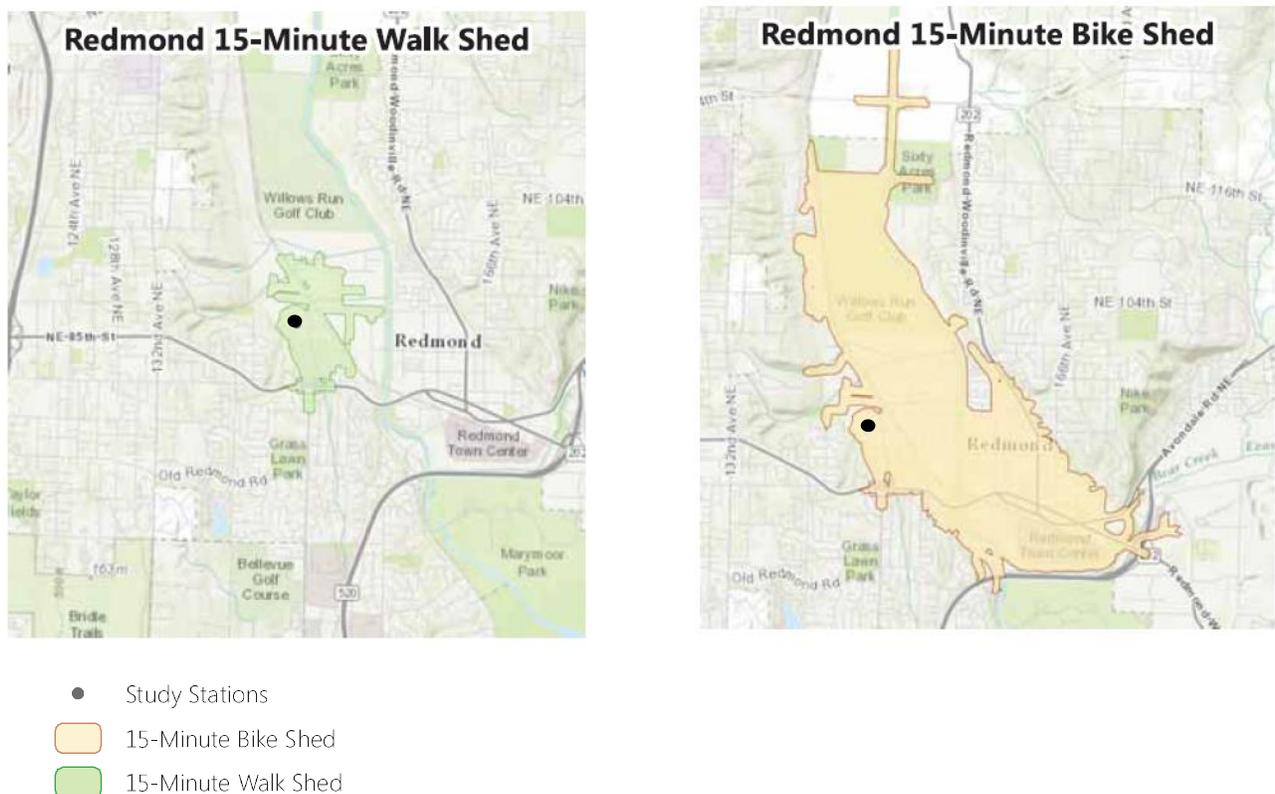
The *First Mile Strategic Plan*, by LA Metro and Southern California Association of Governments[11], also defines "access sheds" as part of their strategic approach. Access sheds are defined by the distance people travel in a set duration of time. For example, the strategy assumes that a person will walk for 15 minutes at 4 miles per hour, which equates to about ½ mile. The easy way to identify the walk shed is to draw a ½ mile buffer around the station to define the walk shed. In reality though, the walk access with the defined circle depends on the street and sidewalk network within the buffer. As shown in the image below, a straight half mile circle is drawn but the second circle shows what can really be reached in 15 minutes given to the street network.

FIGURE 3: BUFFER VERSUS NETWORK ANALYSIS (LA METRO/SCAG)
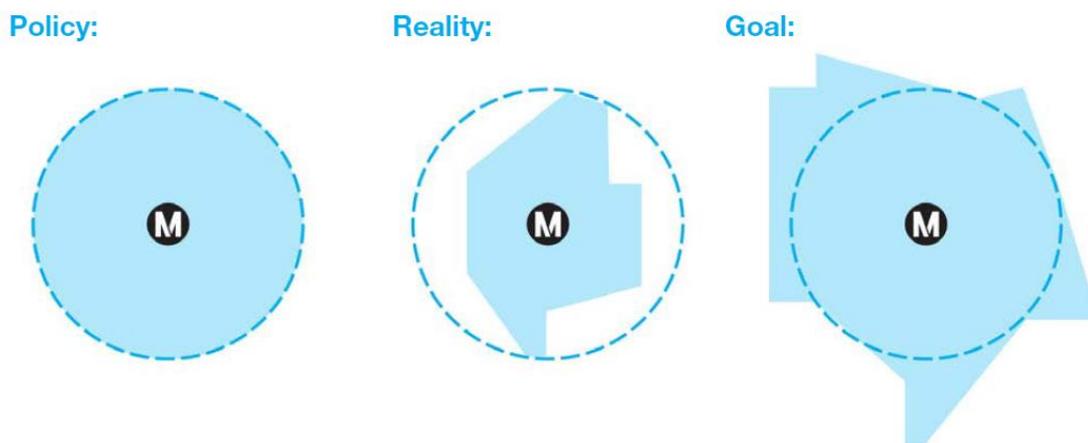
The strategic plan's approach seeks to increase access by
1) increasing the average speed of active transportation users
2) decreasing point to point distance
3) supporting multimodal transfer activity

Additional metrics
The King County – Sound Transit Nonmotorized Connectivity Study also includes a number of metrics related to nonmotorized access. The study used these metrics together to assess potential nonmotorized improvements to increase transit ridership.

Route directness
Route directness is a metric that describes the relationship between the distance traveled along a network and the distance "as a crow flies." The closer the two distances are, the higher the route directness score. Generally, people prefer the most direct path possible.

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[11] http://libraryarchives.metro.net/DB_Attachments/131108_DRAFT_First_Last_Mile_Strategic_Plan.pdf
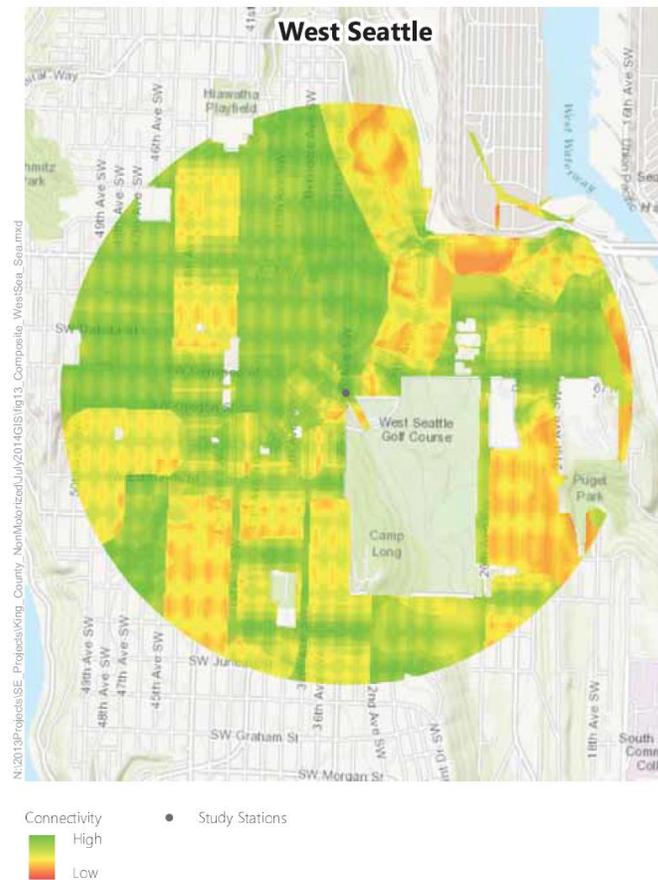
Bike stress

Bike stress is a measure of how safe, secure and comfortable cyclists feel when traveling along a given route or between different locations. The level of bike stress is based on factors such as speed limit and presence of bike facilities.

## Composite connectivity analysis

The Nonmotorized Connectivity Study also developed a method to identify and map a composite connectivity score, which is based on a number of the nonmotorized connectivity factors mentioned above including route directness, intersection density, sidewalk/walkway density and bike stress.

Areas with good street grids tend to score higher on overall connectivity; West Seattle and downtown Seattle (Figure 4) are examples of areas with good connectivity. Major highways and freeways tend to be barriers that reduce an area's connectivity score, as shown in the Northgate and Overlake study area composite score (Figure 5).

FIGURE 4: EXAMPLE COMPOSITE CONNECTIVITY ANALYSIS
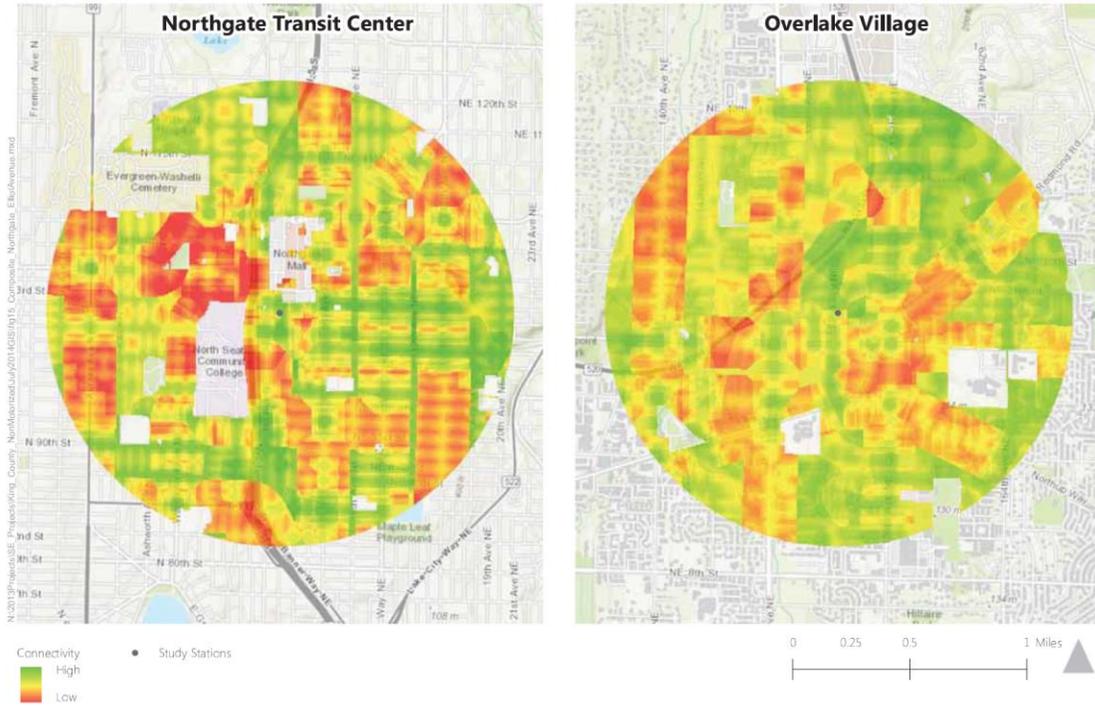
In more suburban environments, connectivity is typically impacted by long gaps in signalized crossings, higher bike stress, and lower route directness. Freeways and wide, busy arterials are additional barriers. It is important to recognize that this data is informative but requires a substantial amount of work to develop and compile.

Transit mobility

An emerging performance measure is "transit mobility," which evaluates the number of destinations people can reach by transit. Transit mobility can evaluate a variety of destinations including jobs, healthcare facilities, parks, schools, and social services. It explores an overall trip, incorporating access to transit as well as the service component in describing a total trip.

Figure 6 is an example of a map that depicts the accessibility of jobs within a 30-minute transit trip during the morning commute period. The map uses shading to indicate the number of jobs accessible within 30 minutes, with the darker shading representing areas from which more jobs can be reached by transit.

FIGURE 6: TRANSIT EMPLOYMENT MOBILITY AM

How people get to transit in King County

This section looks at what we know about how riders access transit in King County. The information is drawn from a number of sources:

- Metro Long-Range Plan Briefing Book
- Puget Sound Regional Council Household Travel Survey
- Metro Rider/Nonrider Surveys
- Park-and-Ride Utilization Reports
- Park-and-ride license plate surveys
- WSDOT Park and Ride Efficiency Study

A list of references is in Appendix A.

How people use Metro

More people are using Metro and other transit services in the region, as shown in Figure 7. During the first quarter of 2015, there were on average more than 400,000 boardings each day on Metro services. Ridership on all services in King County, including buses, rail, vans and passenger ferries, set a record in 2014 with 152 million annual boardings.

FIGURE 7: AVERAGE WEEKDAY DAILY BOARDINGS (METRO)

By time of day

Ridership is highest during the peak periods (5 to 9 a.m. and 3 to 7 p.m.), with almost 50 percent of all boardings occurring during this time. About 39 percent of all boardings occur during the off-peak period and about 12 percent are at night.

By type of service

Rider demand is highest for very frequent service, with half of all boardings occurring on routes where buses come every 15 minutes or better. This includes Metro's RapidRide lines, which account for 14 percent of systemwide boardings on just six lines. Local routes (service every 30 to 60 minutes) attract the next highest ridership, with approximately 25 percent of all boardings in 2014. Hourly routes had the smallest share of boardings. Figure 8 shows annual boardings by route frequency.
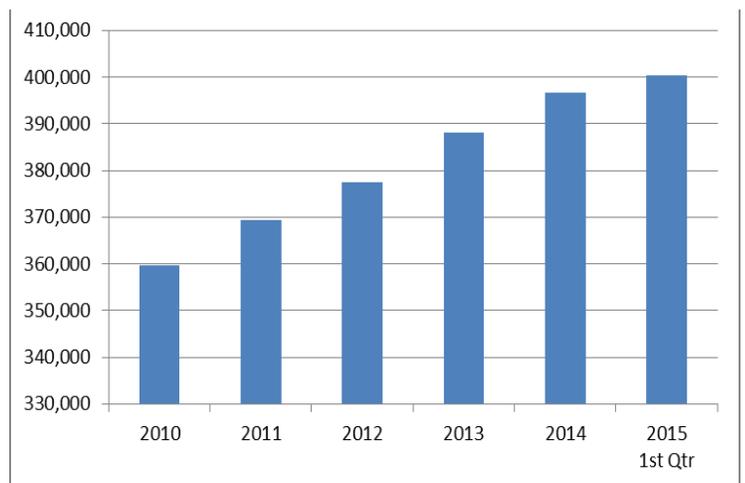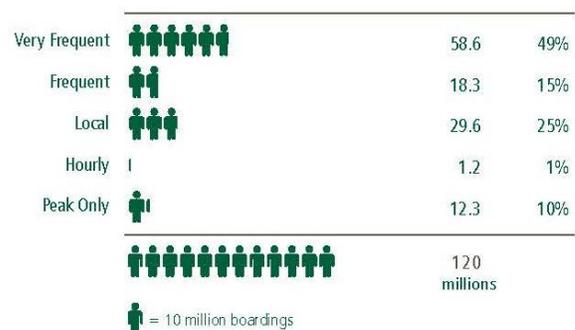
FIGURE 8: ANNUAL BOARDINGS BY SERVICE FREQUENCY

Summary of Transit Access Habits (2014)

- 93% of transit riders in King County walk or bike to reach transit.

- The proportion of people who drive to transit is higher in East and South King County, where between 10% and 13% of riders drive to transit.

- The proportion of people who drive to transit is higher for commute trips. The percentage of transit users who drive to transit for commute trips is:
  o 12% for the county overall
  o 23% for East King County
  o 35% for South King County
  o 3% for North King/Seashore

- About 37% of park-and-ride users travel more than 5 miles to the lot (based on 12 Sound Transit lots around the county)

- Of the county's total population:
  o 65% live within 1/4 mile of a Metro bus stop, with distance based on actual street connections
  o 16% live within 1/2 mile of very frequent service (RapidRide or Link)
  o 68% live within walking distance of either a Metro stop or very frequent service
  o 39% live within walking distance of frequent or very frequent service (1/4 or 1/2 mile, respectively)

- When the number of residences within 2 miles of a park-and-ride is combined with those within walking distances of transit, total transit coverage increases to 87% of all county residents—1.6 million people. *This metric does not reflect whether a park-and-ride has available parking, or whether bus trips are full.*

- Of the county's minority population:
  o 71% live within 1/4 mile of a Metro bus stop
  o 41% live within 1/2 mile of very frequent service (RapidRide or Link)

- Of the county's low-income population:
  o 81% live within 1/4 mile of a Metro bus stop
  o 50% live within 1/2 mile of very frequent service (RapidRide or Link)

- Of all jobs in the county:
  o 77% are within 1/4 mile of a Metro bus stop
  o 38% are within 1/2 mile of very frequent service (RapidRide or Link)
  o 81% are within walking distance of either a Metro stop or very frequent service
  o 61% are within walking distance of frequent or very frequent service (1/4 or 1/2 mile, respectively)

How people get to transit

Riders in King County reach transit service by walking, bicycling, or driving, including getting dropped off. Overall, the vast majority of transit riders in the county walk or bike to reach transit, as shown in Figure 9. The proportion of people who drive varies by location and by time of day. For example, in East and South King County, between 10 and 13 percent of riders drive to transit as compared to two percent in North King County. The proportion of people who drive to transit is also higher for commute trips in general. Across the county, about 12 percent of transit users drive and park to take transit for commute trips as compared to 5 percent of all trips. Twenty-three percent of people in East King County and 35 percent of people in South King County drive to transit for commute trips while in North King/Seashore, roughly 3 percent of transit users drive to transit for commute trips.

FIGURE 9: TRANSIT ACCESS BY TRIP TYPE

Transit Access – All Trips				
	King County	East	Sea-Shore	South
Walked or jogged	92%	85%	96%	79%
Rode a bike	1%	2%	1%	1%
Drove and parked a car	5%	10%	2%	13%
Drove and parked a carshare vehicle	0%	0%	0%	1%
Got dropped off	2%	3%	1%	6%

Transit Access – Commute Trips				
	King County	East	Sea-Shore	South
Walked or jogged	85%	74%	95%	64%
Rode a bike	1%	1%	1%	2%
Drove and parked a car	12%	23%	3%	32%
Got dropped off	1%	2%	0%	3%
Took a taxi (e.g. Yellow Cab, Lyft)	0%	0%	0%	0%

Source: 2014 PSRC Household Travel Survey

Figure 10 shows what mode of access to transit is most commonly used in which parts of the county. In areas shaded light green, most use nonmotorized modes to reach transit (e.g., walk or bike); in areas shaded dark green, most people use a motorized mode (drive). The gradients of green show the relative share of motorized and nonmotorized access.

As the map shows, nonmotorized transit access is primarily concentrated in denser urban areas, including much of Seattle and downtown Bellevue. In the more suburban and rural parts of the county, the primary mode of access is driving.
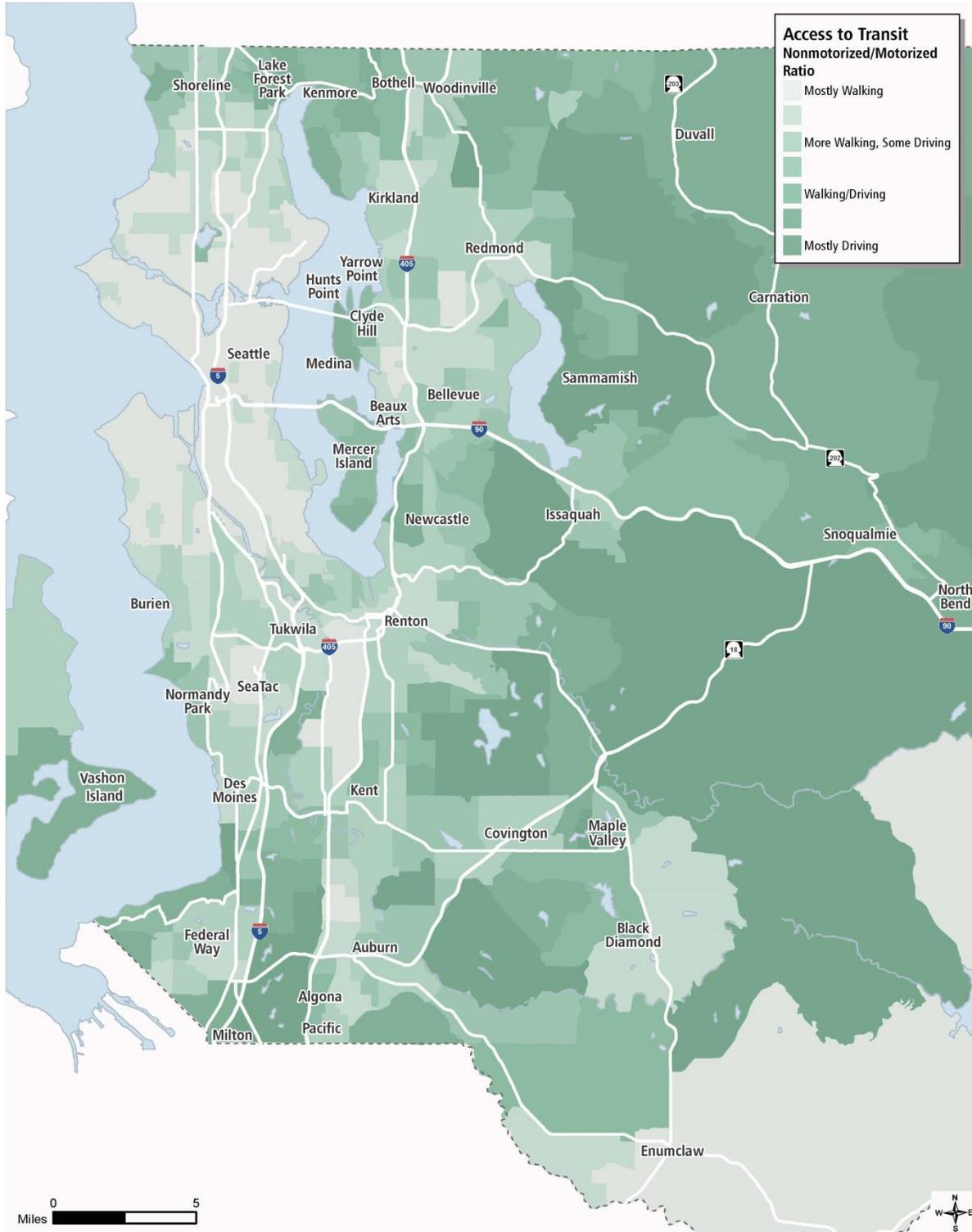
Park-and-ride lots

Park-and-ride lots provide access to transit especially for commute trips in East and South King County. There are 130 park-and-ride lots in King County with more than 25,000 spaces—64 of those lots are permanent and 66 are leased. The permanent lots comprise the majority of the space—22,895 spaces—and tend to be better used. Figure 11 graphically shows the number of spaces available and the number of spaces used on a typical weekday at the park-and-ride lots in King County. On a system level, about 79 percent of the total spaces are used each day, but many of these lots are heavily used—especially the larger lots served by very frequent transit routes.

FIGURE 11: PARK AND RIDE LOT SIZE AND UTILIZATION
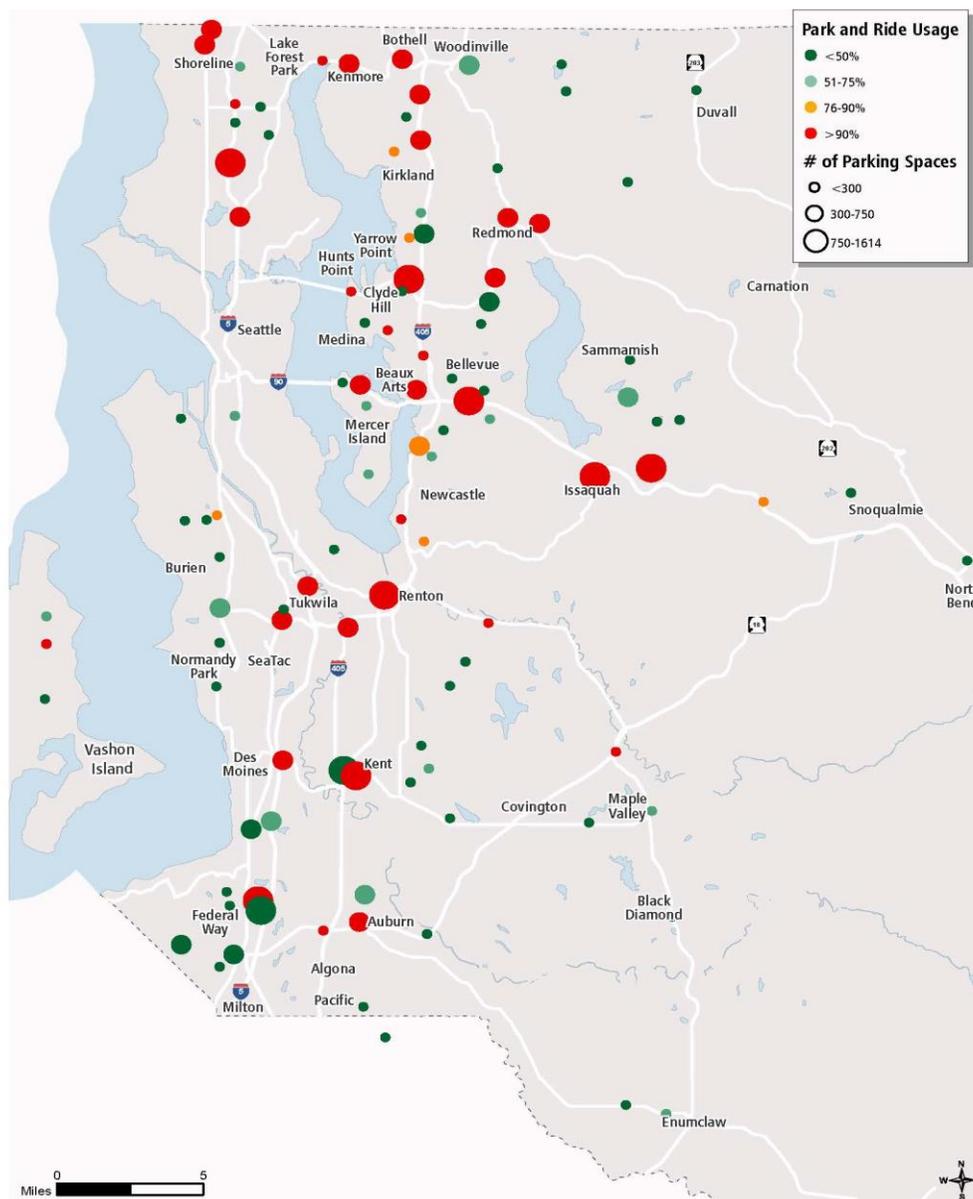
High-utilization lots

Fifty-seven of the 130 lots in King County are considered high utilization lots, with utilization of 80 percent or greater. Forty-one of the lots are permanent or owned lots and 16 are leased lots. Of those high-utilization lots, 26 are filled to 100 percent capacity or more each day—18 permanent lots and eight leased lots. Figure 13 lists the high-utilization permanent lots.

Less-utilized lots

The bottom 20 utilized lots have utilization rates of around 50 percent or less[12], as shown in Figure 14. Based on an initial review, many of these lots seem to be near other, highly utilized lots with more service or more convenient access and locations. Park-and-ride lots that are "upstream" of the last stop of a route before entering the freeway segment of a route do not seem to be as attractive as the park-and-rides that are further downstream, or closer to highway access. The Phase 2 report will take a closer look at the characteristics of low- and high-utilization lots.

Park-and-ride capacity growth and ridership growth

Overall park-and-ride system capacity has changed little over the past five years. The chart below, Figure 12, shows the system park-and-ride capacity over past five years compared with ridership growth. There was little expansion of park-and-ride capacity in King County during this time, while ridership is steadily growing.

FIGURE 12: PARK-AND-RIDE CAPACITY AND DAILY RIDERSHIP OVER TIME

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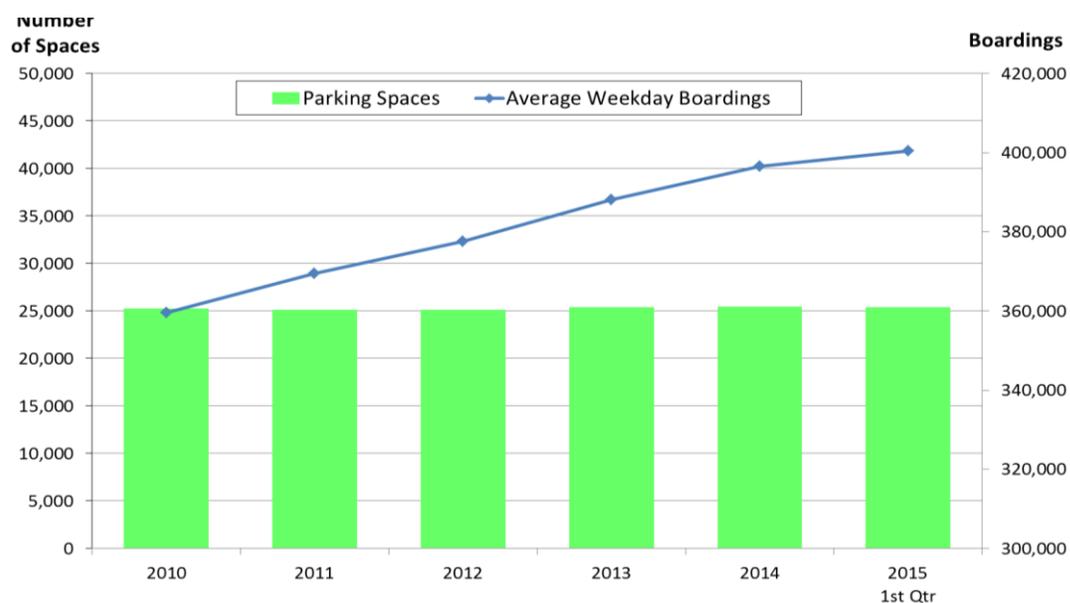
[12] Fourth Quarter 2014 Park-and-Ride Utilization Report

FIGURE 13: HIGH UTILIZATION PERMANENT PARK-AND-RIDE LOTS (>80% UTILIZATION). FOURTH QUARTER 2014

Lot #	Lot Name	Spaces	2014 Utilization	District	Owner
East District - 14 lots					
712	Bear Creek	283	109%	East	King County
727	South Bellevue	519	107%	East	WSDOT
851	Overlake TC at NE 40th	222	102%	East	Sound Transit
719	Kingsgate	502	102%	East	WSDOT
830	Mercer Island	447	100%	East	Sound Transit
726	Redmond	377	100%	East	King County
701	Bothell	220	98%	East	King County
818	Issaquah TC	819	96%	East	Sound Transit
759	Issaquah Highlands	1010	96%	East	King County
713	Eastgate	1614	96%	East	WSDOT
729	Wilburton	186	83%	East	WSDOT
722	Newport Hills	275	82%	East	WSDOT
720	SR 908/Kirkland Way	20	81%	East	City of Kirkland
702	Brickyard Rd	443	81%	East	WSDOT
North District - 9 lots					
705	North Jackson Park	68	104%	North	WSDOT
753	Northgate Transit Center	293	101%	North	King County
704	Kenmore	603	101%	North	King County
753.2	Northgate TC Extension, Carpool	50	100%	North	King County
753.1	Northgate TC Extension	398	100%	North	King County
754	Aurora Village Transit Center	202	99%	North	King County
758	Northgate Mall Garage	280	99%	North	Private
703	I-5/NE 65th St./Green Lake	411	97%	North	WSDOT
760	Thornton Place Garage	350	87%	North	Private
South District - 14 lots					
872.1	Kent Surface Lot at Kent Station	119	101%	South	Sound Transit
873	Auburn Garage at Auburn Station	520	100%	South	Sound Transit
743	South Renton	373	100%	South	WSDOT
890	Tukwila International Blvd Station	600	98%	South	Sound Transit
877	Federal Way TC	1190	98%	South	Sound Transit
873.1	Auburn Station Surface Lot	113	98%	South	Sound Transit
746	Tukwila	255	98%	South	King County
872	Kent Garage at Kent Station	877	97%	South	Sound Transit
756	Renton P&R (Metropolitan Place)	150	96%	South	Private
735	Kent/Des Moines	370	93%	South	King County
739	Peasley Canyon Rd/West Valley Highway	54	91%	South	WSDOT
737	Ober Park	48	88%	South	King County
752	Tahlequah	36	86%	South	WSDOT
736	Maple Valley	122	83%	South	WSDOT

FIGURE 14: BOTTOM 20 UTILIZED PERMANENT PARK-AND-RIDE LOTS (FOURTH QUARTER 2014)

Lot #	Lot Name	Spaces	2014 Use	District	Routes
745	Star Lake (S)	540	56%	South	183, 190, 192, 193, 197, 574
711	Woodinville (S)	438	55%	East	236, 237, 311, 372, 522
715	Evergreen Point Bridge (S)	34	52%	East	167, 242, 252, 255, 257, 268, 277, 311, 982, 986, 424, 540, 542, 545, 555, 556
728	South Kirkland (KC)	783	47%	East	234, 235, 249, 255, 981, 986, 540
761	South Sammamish (KC)	265	45%	East	216, 269, 554
717	Houghton (S)	470	43%	East	238, 245, 277, 342, 952, 981, 986
751	SR 18/Auburn-Black Diamond Road (S)	26	42%	South	
733	Federal Way/S. 320th Street (S)	877	42%	South	177, 178, 193
747	Valley Center** (KC)	55	40%	South	118, 119
724	Overlake (KC)	203	38%	East	RapidRide B Line, 242, 249, 269, 895
731	Duvall (C)	49	37%	East	224, 232
741	South Federal Way (KC)	515	37%	South	178, 182, 903 DART, Pierce 62
744	SW Spokane St. (C)	55	32%	North	21, 37 Express
710	5th Ave NE/NE 133rd St (S)	46	32%	North	242
748	Lake Meridian (KC)	172	31%	South	157, 158, 159, 168, 914 DART
755	Tibbetts Lot (C)	170	28%	East	200, 214, 269, 271, 554, 555, 556
734	Kent/James Street (KC)	713	25%	South	150, 158, 159, 166, 180, 913 DART, 918 DART
742	Twin Lakes (S)	600	14%	South	179, 181, 197, Pierce 179, 181, 197, 62
762	North Bend (C)	80	10%	East	208, 628
757	Redondo Heights P&R (KC)	697	8%	South	RapidRide A Line, 190

-- (S) Owned by WSDOT; (KC) King County owned;

**Where park-and-rides tend to be most effective[13]**

Park-and-ride facilities should be provided where one or more of the following factors apply:

- Population densities are too low to support frequent bus service (i.e., where rush hour connection headways exceed 15 minutes)
- The station catchment area is not served by local bus service
- Locations are at least 5 to 8 miles from the city center
- Locations are perceived as safe by patrons
- Facilities are less costly to provide than special feeder bus service
- Facilities are located near the confluence or terminal points of urban freeways
- Suitable access from cross streets can be provided
- Freeway corridors are congested and park-and-ride facilities can be provided in advance of the congestion.

Well-utilized lots fill early

The lots that are well-used often fill early in the morning, before the morning commute has ended. Based on a recent study by the Washington State Department of Transportation (WSDOT), the lots studied were largely full by about 8:30 am, with many of the lots filling much earlier (Figure 15). Lots with train service fill up much more quickly than those with bus-only service.

FIGURE 15: PROPORTION OF PARKING SPACES FILLED BY TIME OF DAY (WSDOT REPORT, P.32)
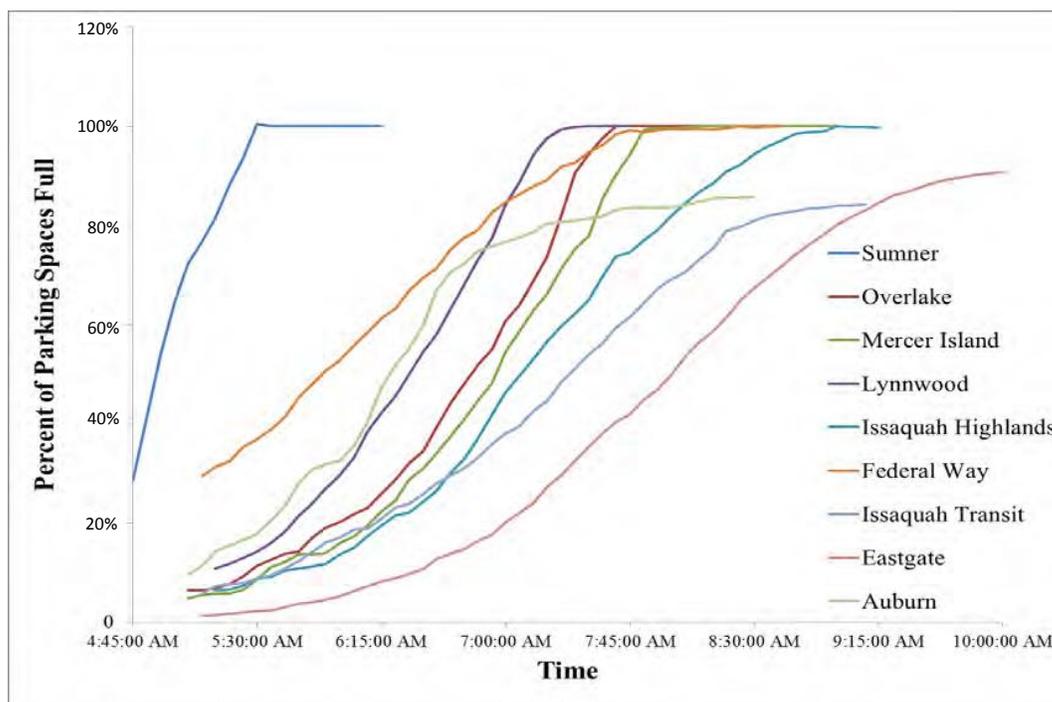
[13] TCRP Guidance (TCRP Report 153): http://onlinepubs.trb.org/onlinepubs/tcrp/tcrp_rpt_153.pdf

Where do park-and ride-users come from?

License plate surveys are a tool to track where people who park in park-and-ride lots come from. Sound Transit regularly conducts surveys on its lots. Metro also surveys our lots but not as regularly; we have recently initiated an effort to survey the lots we own or maintain.

Figure 17 is an example of a Sound Transit license plate survey map. All the Sound Transit survey maps are shown in Appendix B. The dots on the map represent the origins of the vehicles (based on the vehicle registration) recorded at the surveyed park-and-ride lots.

Figure 16 summarizes the distances that the observed users traveled to lots in King County according to the 2015 Sound Transit surveys. Based on the survey data, about 37 percent of the observed users travel more than five miles. Distance traveled varies by lot, as shown in the table. The percentage range of people who traveled more than five miles varies from 17 percent to 51 percent, in Federal Way and Auburn, respectively.

FIGURE 16: DISTANCE TRAVELED TO SOUND TRANSIT PARK- AND-RIDE LOTS (2015) – LICENSE PLATE SURVEY DATA

Name	Spaces	0-1 mi	%	1-2 mi		2-3 mi		3-4 mi		4-5 mi		5+ mi	
Auburn Station	633	19	3%	43	7%	84	14%	86	15%	55	9%	299	51%
Federal Way Center Plaza	56	2	6%	8	22%	5	14%	13	36%	2	6%	6	17%
Federal Way Transit Center	1,190	67	6%	220	21%	205	19%	160	15%	133	13%	276	26%
Issaquah Transit Center	819	92	15%	111	18%	27	4%	46	7%	57	9%	281	46%
Kent Station	996	42	4%	193	18%	221	20%	188	17%	111	10%	330	30%
Mercer Island P&R	447	76	19%	29	7%	46	12%	52	13%	26	7%	171	43%
Northgate	156	33	21%	30	19%	26	17%	22	14%	11	7%	34	22%
Overlake Transit Center	222	32	16%	60	30%	19	9%	12	6%	11	5%	67	33%
TIBS Leased Lot	62	5	11%	7	15%	1	2%	6	13%	4	9%	23	50%
Tukwila International Blvd	600	41	13%	42	13%	31	10%	47	15%	33	10%	128	40%
Tukwila Station	390	2	1%	27	7%	63	17%	46	12%	61	17%	170	46%
South Bellevue	519	41	7%	57	10%	77	14%	88	16%	48	9%	238	43%
	6090	452	8%	827	15%	805	15%	766	14%	552	10%	2023	37%

Federal Way Transit Center License Plate Survey
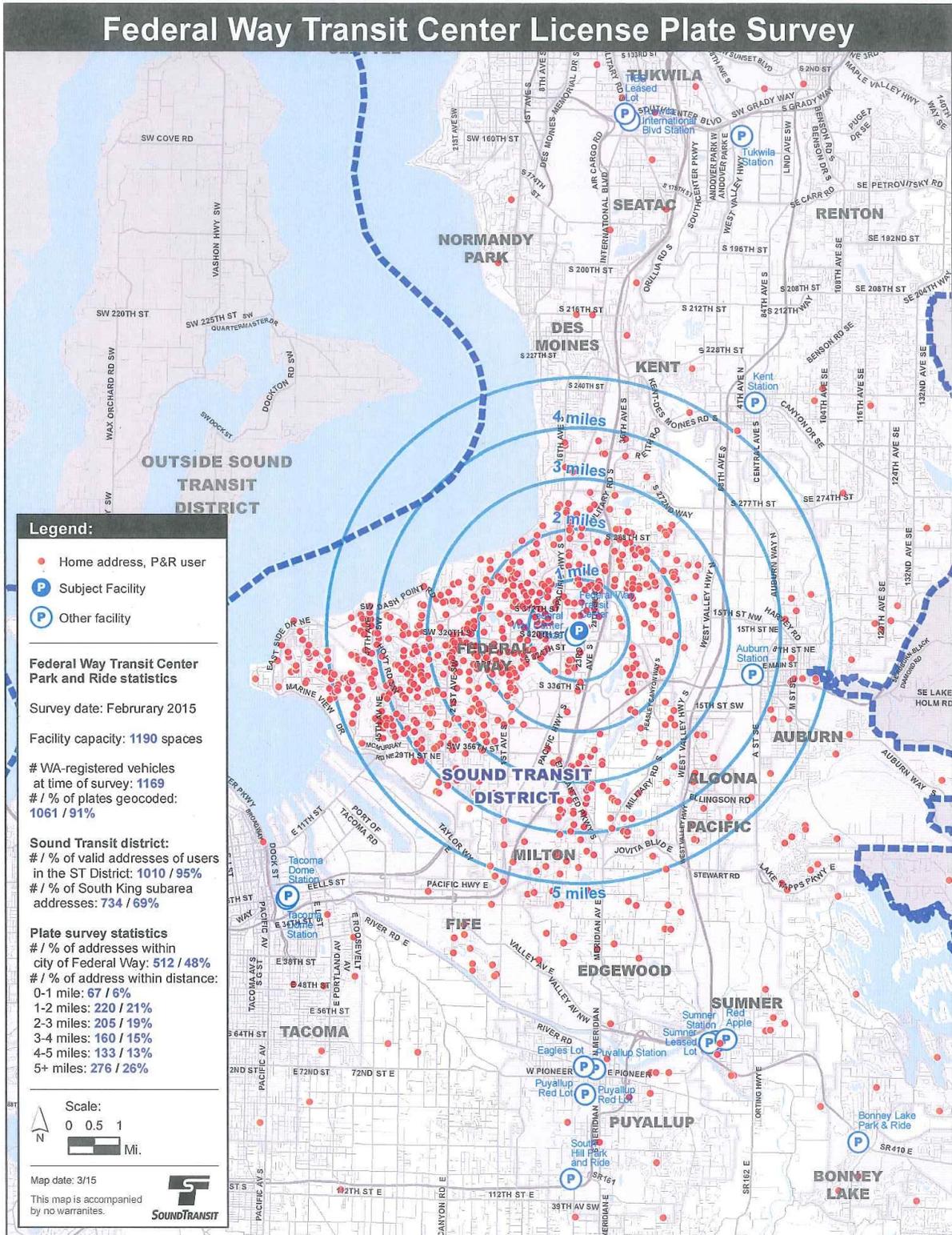
Metro's Rider/Nonrider Survey

Metro's Rider/Nonrider Survey observed somewhat different reporting of distances traveled to park-and-ride lots. According to the Metro user survey, about 16 percent of riders travel more than five miles to a park-and-ride lot.

Riders living in East King County who use park-and-ride lots have a park-and-ride lot closer to their home than do those living in Seattle/North King County and in South King County.

People generally drive alone to park-and-ride lots

The WSDOT study of overcrowded park-and-rides[14] found that the majority of participants drive to park-and-ride lots in a single-occupant vehicle. The next highest uses appear to be either using public transportation (i.e., bus), kiss-and-ride trips (i.e., dropped off), carpools, or walking. WSDOT found during its research that two lots, Overlake Transit Center and Sumner, both had slightly lower rates of people driving alone, indicating that higher levels of carpool or vanpool activities to access the park-and-ride may occur at these locations.

Purpose for parking

The WSDOT study observed that people who park in the lots studied tended to use these lots primarily as a means to access transit services and not for other, non-transit uses. This includes both fixed-route (e.g., bus and train) and flexible transit (e.g., car and vanpools). The Eastgate park-and-ride was an exception, with some observed users heading to Bellevue College.

FIGURE 18: DISTANCE FROM HOME TO PARK AND RIDE LOT USED

Distance from Home to Park-and-Ride Lot Used by Area of Residence				
	All Riders (n = 472) (n_w = 337)	**Seattle / N. King** (n = 55) (n_w = 79) (A)	**South King** (n = 157) (n_w = 129) (B)	**East King** (n = 260) (n_w = 129) (C)
< 1 Mile	13%	16%	11%	12%
1–2 Miles	33%	31%	23%	45% (B)
3–5 Miles	38%	40%	41%	34%
6–10 Miles	12%	6%	19% (a)	9%
>10 Miles	4%	7%	5%	1%
Mean	3.98	4.15 (C)	4.77 (CB)	3.09
Median	3.00	3.00	4.00	2.00

Question PR2C: How far is it from your home to the park-and-ride lot you use most often?
Responses provided in blocks or miles; converted to miles assuming 10 blocks per mile
Columns may sum to more or less than 100% due to rounding.
Base: Regular and Infrequent Riders who have used park-and-ride lot in past 30 days

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[14] WSDOT Park-and-ride efficiency study

Who is within walking distance of transit?

As a general rule, people will walk between a ¼ mile and ½ mile to reach transit. Research has shown that people are willing to walk further to reach high-quality, frequent transit services like RapidRide and Link, so the walk standard is different for those two services than for other transit service. The walking distances were developed from actual walking routes to transit, such as a sidewalks, paths, and roads. They reflect the actual distance that people walk rather than a circular buffer.

Figure 19 summarizes the proportion of the county's population and employment that is within walking distance to RapidRide, Link, or other transit service. As shown, Metro covers the majority of the population and jobs in the county.

FIGURE 19: POPULATION AND EMPLOYMENT WITHIN WALKING DISTANCE TO TRANSIT

Population			
	All Transit	King County Metro	Sound Transit
All stops (1/4 mile)	65%	65%	6%
RapidRide or Link (1/2 mile)	18%	16%	3%
Combined (1/4 mile for all and 1/2 mile for Link and RapidRide)	68%	68%	8%
Frequent service combined (1/4 mile for frequent or very frequent, and 1/2 mile for Link and RapidRide)	40%	39%	5%
Employment			
	All Transit	King County Metro	Sound Transit
All stops (1/4 mile)	77%	77%	24%
RapidRide/Link (1/2 mile)	43%	38%	16%
Combined (1/4 mile for all and 1/2 mile for Link and RapidRide)	81%	81%	30%
Frequent service combined (1/4 mile for frequent or very frequent, and 1/2 mile for Link and RapidRide)	61%	57%	28%

Approximate Walk Times

¼ mile = 3-5 minutes to walk

½ mile = 8-10 minutes

1 mile = 12-15 minutes

Access as a barrier to using transit

Access to service affects ridership. According to Metro's Rider/Non-rider survey, 13 percent of nonriders indicated that inadequate access to service is the primary reason they do not ride transit. Figure 20 lists the primary reasons people indicated for not riding transit.

Inadequate access to service could mean no route goes where they need to go, service is not close to home and the bus stop too far.

FIGURE 19: 2013 RIDER-NONRIDER SURVEY
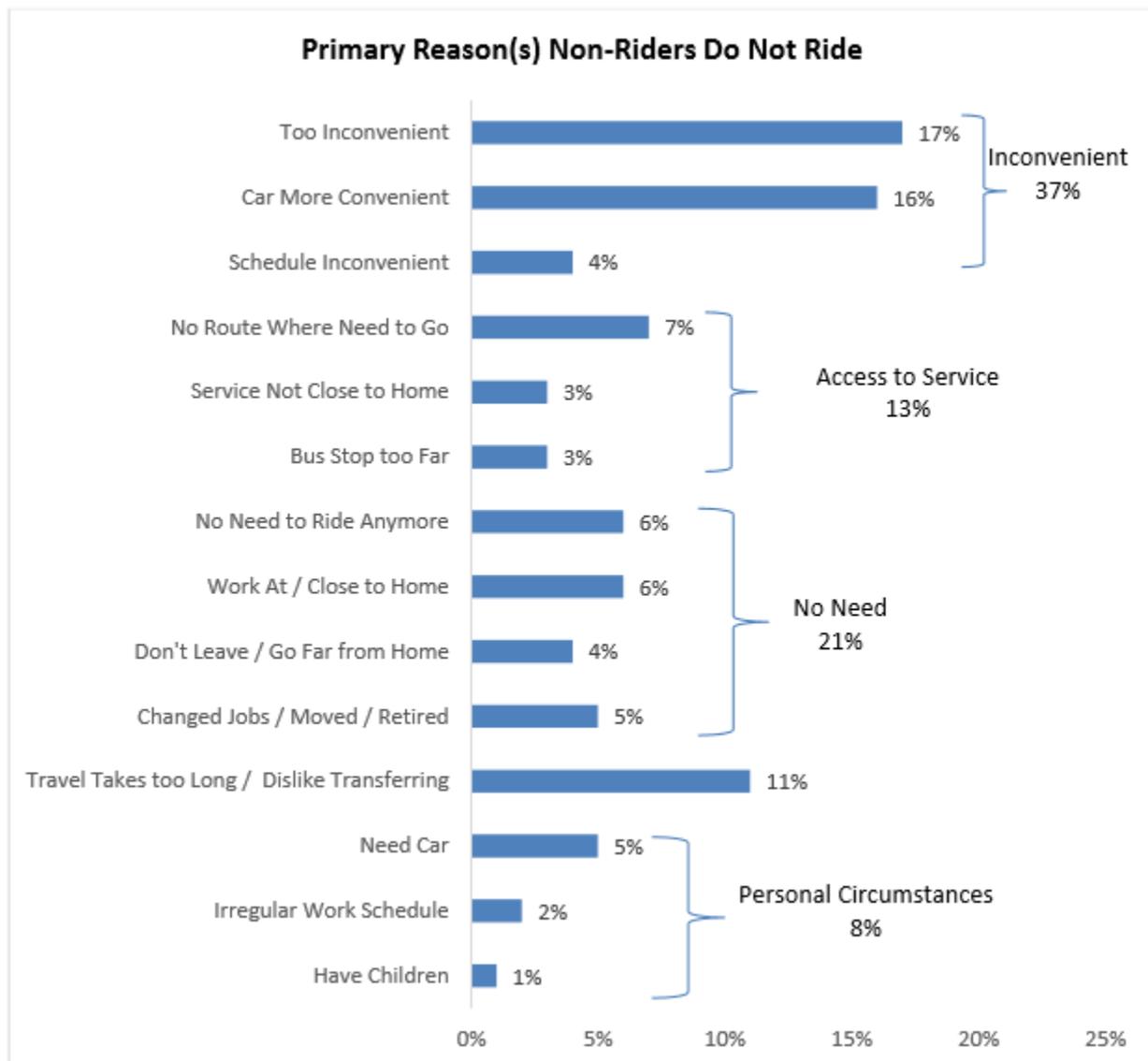
Access to transit was also observed by the Puget Sound Regional Council Household Travel Survey to be an important consideration as people decided whether to use transit.

People were asked what might make them more likely to use transit or other alternative modes. Among the answers were:

- Safer access to transit
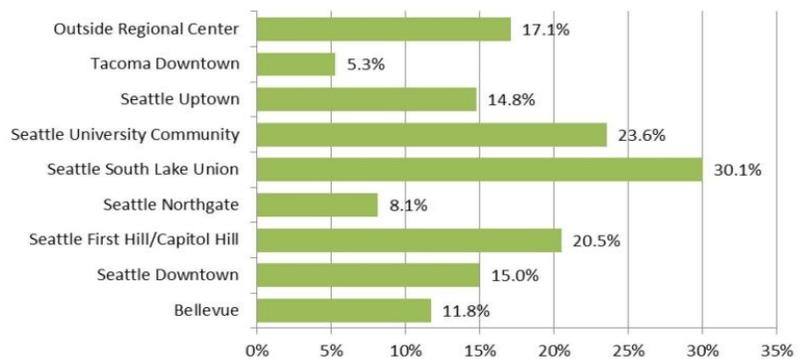- Safer biking routes
- Safer walking routes

Within King County, residents of South Lake Union, Bellevue and downtown Seattle were most concerned with safer access to transit, and safer walking routes.

Safer biking routes were most important to people from South Lake Union, the University District and downtown Seattle.

FIGURE 20: SAFER ACCESS TO TRANSIT (PSRC 2014 HOUSEHOLD TRAVEL SURVEY)
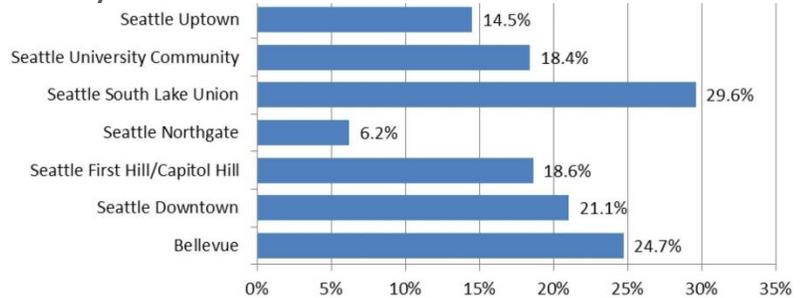
FIGURE 21: SAFER BICYCLING ROUTES (PSRC 2014 HOUSEHOLD TRAVEL SURVEY)

FIGURE 22: SAFER WALKING ROUTES (PSRC 2014 HOUSEHOLD TRAVEL SURVEY)