Attachment A

King County Metro Transit

Access to Transit Phase 2 Report

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King County Council

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CONTENTS

EXECUTIVE SUMMARY **1**

INTRODUCTION **4**

SECTION ONE: FINDINGS AND NEXT STEPS **6**

SECTION TWO: RESEARCH OVERVIEW **16**

I. Measures and reporting 16

II. Funding options 26

III. System access policies and practices 31

IV. Transit parking policies and practices 36

V. Transit-oriented development (TOD) 47

REFERENCES **55**

APPENDICES **58**

Appendix A: Ordinance requiring Access to Transit 59

Appendix B: Proposed changes to the Strategic Plan related to access to transit 65

Executive summary

Metro's customers reach transit service in a variety of ways, such as walking, biking, taking connecting transit or paratransit services, riding in a car and being dropped off, or driving to a park-and-ride. The predominant modes differ in the various urban, suburban and rural communities Metro serves, reflecting the surrounding environment, land use and the local transportation network.

Customers' ability to use these modes is affected by their proximity to transit, the quality of walking and biking pathways, space available at park-and-rides, and the type and frequency of transit service provided at the access point.

To better understand how people get to our services and how they get from our services to their final destinations, Metro conducted a two-year Access to Transit Study. This study considered infrastructure that provides access, how access needs are reported and funded, and regional coordination and policies.

The results of the study are presented in three separate reports:

1. **Phase 1**: The first report reviewed the different modes used to access transit and the infrastructure that supports them, 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.

2. **July 2015 report**: A second report provided information about how access to transit is defined, actions Metro is taking or planning regarding access, how other agencies address access to transit, and how people access transit in King County.

3. **Phase 2**: This report is the final step of the two-year process. It reflects what we have heard and what we have learned, and specifically looks at needs reporting, funding, policies and regional coordination. It also recommends next steps for Metro to take to improve transit access around the region. Our findings and next steps are summarized in Section One. A more detailed discussion of our review of measures and reporting, funding, and policies and practices related to system access, transit parking and transit-oriented development is in Section Two.

While the study process has concluded, Metro will continue to improve access to transit by acting on the findings. The study will inform proposed updates to the Strategic Plan for Public Transportation and Service Guidelines, provide input to Metro's long-range plan, and influence our ongoing work on nonmotorized access and transit parking.

What we've heard

Over the past two years, Metro worked closely with regional partners and stakeholders as we conducted this study. We clearly heard from our stakeholders that:

1. Many park-and-rides around the region are overcrowded.

2. Biking and walking infrastructure connecting to transit is inadequate in various places around the county.

3. Transit-to-transit and other last-mile connections are important, especially as the regional transit network grows.

4. Working with jurisdictions and other agencies is critical to improving access, and Metro needs to take a leadership role.

5. Metro's measures and reporting do not fully capture the multiple facets of transit access or identify a clear path to address them.

What we've learned and what we're doing

Our findings are based on reviews of agency best practices and conversations with jurisdiction representatives. Highlights of our findings:

I. Measures and reporting

Metro could expand on our existing measures and data collection to more fully assess the opportunities for all people to access public transportation and to identify opportunities for improving access.

Actions:

- Metro is proposing modified and new measures as part of the updates to the strategic plan.
- Metro is developing new tools and initiating expanded data collection to better understand access barriers and identify steps for improvement. We will need resources to support these expanded data tools and data collection efforts.

II. Funding

A major portion of Metro's capital program is dedicated to fleet purchases and ongoing maintenance and operation of existing facilities. Major new investments in access to transit projects will require both additional dedicated funding and partnerships with other agencies, local jurisdictions and the private sector. An investment strategy will be required to identify and prioritize the most effective projects. As mentioned above, Metro plans to develop new tools and expanded data collection to help evaluate opportunities for access improvements.

Actions:

- Metro will continue to work with partners to identify financial partnership opportunities, grants and other resources to implement new capital infrastructure and programs to enhance transit access.
- Metro will seek opportunities to further develop and apply tools and resources to evaluate access to transit needs and identify and prioritize projects.
- Metro will begin to identify investment priorities through the development of its long-range plan and during the 2017-2018 budget process.

III. Policies and practices

Bike and pedestrian. A multimodal approach to providing and enhancing access to transit is important. Good transit access by all modes is essential to supporting ridership and making

transit more attractive and convenient. While all modes have a role, many agencies prioritize improvements that will do the most to increase ridership at the lowest cost.

Actions:

- Metro will develop policy language in the long-range plan to guide Metro's multimodal approach to transit access improvements.
- Metro will work collaboratively with local jurisdictions, other agencies, private organizations and others to work to improve bike and pedestrian connections to transit. Metro's focus will be in the transit service and transit stop element of these connections.

Transit parking. Transit parking is an important access mode and many agencies provide park-and-ride or other parking as a means of access to transit. Many agencies and cities are working to find strategies for responding to parking demand that use resources efficiently, are affordable, and are consistent with smart-growth plans adopted by cities.

Actions:

- Metro will work collaboratively with local jurisdictions, other agencies, private organizations and others to attempt to respond to demand for transit parking by better managing our resources and providing more supply where warranted.

Transit-oriented development (TOD). Transit-oriented development can increase access to transit by promoting walkable, compact communities and providing affordable housing near transit. It can help increase, maintain or decrease parking, depending on the community vision.

Actions:

- Metro will encourage and pursue transit-oriented development (TOD) opportunities with cities, other transit agencies and private developers.

Safety and security. Agency programs that promote safety and security are critical as people are more likely to utilize facilities where they feel safe.

Action

- Metro will continue to promote safe and secure access to transit and seek opportunities to collaborate with jurisdictions to make improvements.

IV. Regional coordination

Transit access is a regional issue, especially in the Puget Sound area where different agencies and jurisdictions own, and often share, access infrastructure. Metro will need to work closely with other agencies and jurisdictions to plan, design, fund, build and maintain an integrated transit system with good access.

Action

- Metro will continue to plan and coordinate with regional players who have a role in access to transit issues, including Sound Transit, the Washington State Department of Transportation, the Puget Sound Regional Council, and other agencies and jurisdictions.

Introduction

This is the third and final report of King County Metro's two-year Access to Transit Study required by King County Ordinance 17641, Section 3. This study is a first step in Metro's continuing work to improve access to transit.

Per Ordinance 17641, section 3A, the Access to Transit Study addresses:

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.

For the full text of the ordinance, please see Appendix A.

The results of the study are presented in three separate reports:

1. **Phase 1**: This report, transmitted in December 2014, reviewed the different modes used to access transit and the infrastructure that supports them, 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.

2. **July 2015 report**: This second report provided information about how access to transit is defined, actions Metro is taking or planning regarding access, how other agencies address access to transit, and how people access transit in King County.

3. **Phase 2**: This report is the final step of the two-year process. It specifically looks at needs reporting, funding, policies and regional coordination (items c, d and e). It discusses transit parking and transit-oriented development as well as recommendations for updates to Metro's Strategic Plan for Public Transportation. It also recommends next steps for Metro to take to improve transit access around the region.

Coordination with other agencies

- Metro coordinated its transit access study with other efforts in the region. Sound Transit and WSDOT recently completed studies that explored park-and-ride management strategies. Metro partnered with Sound Transit to develop a tool that helps identify and prioritize access improvements for nonmotorized modes.

- The Puget Sound Regional Council (PSRC) is continuing its transit access assessment and the work of the Regional Transit Access Working Group in which Metro has been an

active participant. This working group includes representatives of transit and transportation agencies and local jurisdictions in the Puget Sound region. Participation in this group has enabled Metro to track and coordinate with the other transit access-related studies underway in the region, as well as maintain contact with jurisdictions on transit access issues.

- Metro convened a subgroup of King County members of the Transit Access Working Group to help provide input into Metro's study process.

- King County is participating in the Regional Parking Management Working group that was formed in May 2015 to provide input on Sound Transit's permit parking program design. The working group has also developed regional parking management best practices and opportunities for collaboration between transit agencies.

- Metro is coordinating closely with Sound Transit, other transit agencies and jurisdictions on long-range planning, including system access issues. Metro is also working with the King County Department of Natural Resources and Parks to enhance connections between the regional trail system and transit.

Report organization

This report is broken into two sections, with the first section presenting the findings and recommended next steps. The second section provides a detailed discussion of the five research areas defined in the ordinance that required this study.

Section One

Findings and next steps

Section Two

1. Measures and reporting
2. Funding
3. System access policies and practices
4. Transit parking policies and practices
5. Transit-oriented development policies and practices

References

Appendices

A. Ordinance requiring Access to Transit report
B. Proposed changes to the Strategic Plan for Public Transportation related to access to transit.

Section One: Findings and next steps

This report reflects what we heard and learned in the past two years. It discusses what Metro can do to better assess our customers' access to transit, identify areas where improvements are needed, and take steps to enhance access.

What we heard

Over the past two years, Metro worked closely with regional partners and stakeholders as we conducted this study. We clearly heard from our stakeholders that:

1. Many park-and-rides around the region are overcrowded.
2. Biking and walking infrastructure connecting to transit is inadequate in various places around the county.
3. Transit-to-transit and other last-mile connections are important, especially as the regional transit network grows.
4. Working with jurisdictions and other agencies is critical to improving access, and Metro needs to take a leadership role.
5. Metro's measures and reporting do not fully capture the multiple facets of transit access or identify a clear path to address them.

What we learned

Our findings are based on review of industry research, agency best practices and talking with jurisdictions. We conducted literature review, interviews with other agencies and discussions with stakeholders. This section highlights what we learned.

I. Measures and reporting

Access to transit depends on many factors. Metro currently collects data on commonly tracked measures such as service coverage and park-and-ride utilization. Metro could modify and add measures and data points that build on what Metro currently tracks to more fully assess the public's access to our transit system and identify opportunities for improving access. Metro is currently developing new tools for assessing and some of these measures could be included in our annual Strategic Plan Progress Report. Others could supplement our data to provide a better understanding of barriers to access and areas for improvement. This information can help guide action, identify projects and prioritize investments.

Key considerations

- Data and information provide a better understanding of what and where the barriers are to transit access, and can suggest opportunities for improvement.
- A number of agencies assess transit coverage by considering distance from transit, with some specifically considering distance from frequent service.
- Park-and-ride utilization data helps identify both high-demand lots and low-use lots. A number of agencies identify low-use lots and take steps to improve their usage. The time of day that lots fill up and where users come from are also valuable pieces of information.

- Some industry research has looked at how far people travel to park-and-rides, but the results vary considerably based on the surrounding land use, accessibility of the lot, the type of transit service available and other factors.
- Emerging tools that Metro and other agencies are developing will enable more in-depth analysis focused on specific access modes or locations. Such analysis will help us better understand issues and plan capital projects.

II. Funding

Access to transit frequently relies on capital infrastructure. Metro's capital program places high priority on funding to support a state of good repair and ongoing operations and maintenance associated with major capital projects. Metro makes ongoing investments in infrastructure and facilities through its capital program and grants, but major new investments will likely require partnerships with other agencies, local jurisdictions, and the private sector. Identification and prioritization of projects are critical steps in the funding and implementation process.

Key considerations

- Major capital projects require large investments to build and also require ongoing operations and maintenance costs.
- Agencies prioritize capital funding to support state of good repair and ongoing operations and maintenance associated with major capital projects.
- Major capital infrastructure investments rely on collaboration and partnerships, not only for funding but also for planning, design, and implementation.
- Grant funding plays a major funding role, but can be unpredictable. Additionally, grants generally do not fund ongoing operations and maintenance needs.
- Some agencies that charge for parking are able to raise revenue for investment in access improvements.
- Funding is also important to ensure resources for data collection, research, and analysis.
- Tools that demonstrate the benefits of a project help agencies prioritize and advocate for project funding.

III. Policies and practices

In our review of transit agencies' policies and business practices for improving access to transit, we found a number of common themes:

Bike and Pedestrian. Many agencies have policies, plans and guidelines that acknowledge the importance of all modes of access in supporting ridership, and making transit more convenient and attractive. Generally these policies strive for balance among the modes and establish a priority framework for access investments, with priority given to improvements that will do most to increase ridership at the lowest cost. Generally that means that pedestrian access is seen as the highest priority, followed by biking and transit connections with provision for single-occupancy vehicles when other modes have been considered.

Key considerations

- Many agencies have established explicit access strategies, policies and guidelines
- Many agencies are developing multimodal approaches to access with an increasing emphasis on modes that rely on low cost investments
- Many agencies have a stated prioritization approach or hierarchy of investments that usually ranges from pedestrian as highest priority/lowest cost to vehicle access and parking/highest cost, as shown in Figure 1.

FIGURE 1: EXAMPLE ACCESS HIERARCHY (CHICAGO RTA)

Transit parking. Transit parking is an important access mode and the majority of agencies we reviewed provide parking as a means of access to transit. Available parking can divert drivers from the region's road system and can provide opportunities for customers to use transit who may not be able to access it by other modes.

Overcrowded parking is a common problem however and park-and-rides are expensive to build and have other tradeoffs. Many agencies and cities are working to find strategies for responding to parking demand that use resources efficiently, are affordable, and are consistent with smart-growth plans adopted by cities.

Key considerations

- Transit parking is one piece of a multimodal approach to providing access to transit.
- Park-and-rides provide access to transit for people who live beyond a reasonable walking distance or are unable to use other access modes.
- Transit agencies are pursuing strategies to make transit parking as efficient as possible, such as encouraging the most number of riders per parking space.
- Effective management strategies include pricing, shared parking, multimodal facility design, and transportation demand management.
- Parking policies and approaches should consider local characteristics and consider the cost per rider when evaluating station access options.
- Many agencies prioritize improvements that do the most to increase ridership at the lowest cost, taking into account both operating and capital expenses, land values, and the opportunity costs of foregone joint development.

Transit-oriented development (TOD). Transit-oriented development can increase access to transit by promoting walkable, compact communities as well as affordable housing. TOD can also be a mechanism to increase or supplement transit parking. Transit agencies can often use opportunities to redevelop property, such as park-and-rides, to create mixed-use spaces while

preserving or increasing transit parking. TOD can also be used to increase emphasis on the walk/bike environment and decrease reliance on private vehicles, if that is the community vision.

Key considerations

- Transit-oriented development can increase access to transit by promoting walkable, compact communities—as well as affordable housing. See text box to the right for more information.
- TOD can be used to increase, maintain or decrease transit parking supply, depending on the goals of the project.
- Transit agencies' typical goals for TOD include to increase ridership, promote sustainable and affordable communities, generate funding for transit, enhance transit assets, and reduce vehicle mode share.
- Transit-oriented development can be a valuable option for underutilized park-and-rides as well as surplus properties.

Transit-oriented development and affordable housing

Access to safe and affordable housing is one of King County's determinants of equity, which measure whether King County is progressing towards creating fair and just communities. Unstable housing creates high levels of stress and contributes to other issues, such as trouble finding and keeping jobs and homelessness. Nearly half of the households that rent in King County report paying more than one-third of their income for housing costs.

Transportation costs are second only to housing costs for the average family, with people spending about 32 percent of their income on housing and 19 percent of their income on transportation. Low income households often seek housing in areas outside of cities because it is more affordable, but that affordability is often counterbalanced by higher transportation costs. Transit-oriented development can address both issues by including affordable housing in mixed-use areas that are well-served by transit.

Safety and security. Agency programs that promote safety and security are critical as people are more likely to utilize facilities where they feel safe.

Key considerations

- A safe and attractive walking environment is critical to enhancing the pedestrian experience.
- Jurisdictions are potential partners in addressing safety issues.

IV. Regional coordination

Transit access is a regional issue, especially in the Puget Sound area where different agencies and jurisdictions own, and often share, access infrastructure. Agencies and jurisdictions will need to work together to plan, design, fund, build and maintain an integrated transit system with good access.

Key considerations

- It is essential to coordinate system access planning and program efforts as agencies and jurisdictions develop plans and consider options to improve transit access with limited resources.

Recommended next steps

Based on these findings, Metro proposes to pursue the following steps to enhance access to transit and increase ridership. The steps focus on these areas: measures and reporting, policies and practices, and regional coordination. Funding is an underlying issue which is incorporated throughout. Access for persons with disabilities is implicit in all access considerations.

I. Measures and reporting

1. **Modifications to measures:** As part of the 2015 update of the Strategic Plan for Public Transportation, Metro will strengthen and clarify the access to transit measures we use.
    a. Revise and add metrics that will be reported on annually to better track the multiple facets of access and provide information to support Metro's planning and implementation of access improvements. Specifically: modify metrics to address service coverage, availability of transit service, bike access, park-and-ride utilization, and general transit mobility. See Figure 3 on page 15 for descriptions of the measures proposed in the 2015 update to the Strategic Plan for Public Transportation, and see Appendix B for the full text of the changes.

II. Funding

2. **Partnerships and grants:** Metro will continue to work with partners and seek grant opportunities to fund capital projects and practices to enhance transit access.
3. **Internal and partner agency resources**: Metro will seek opportunities through internal resources and partnerships to further develop and apply tools to measure access and identify and prioritize access improvements.

III. Policies and practices

4. **Policy framework changes**: Metro will strengthen and clarify its guiding framework regarding access to transit through the 2015 strategic plan update and the adoption of the long-range plan.
    a. Propose the following changes related to access to transit as part of the 2015 update of Metro's Strategic Plan for Public Transportation and Service Guidelines:
        - **Access related strategies**. Revise and add strategies to strengthen language related to parking demand, security at park-and-rides, nonmotorized access, and transit-oriented development. See Figure 2 on page 14 for a summary of suggested strategic plan updates related to access to transit and Appendix B for the full text for the changes related to access to transit.
        - **Definition of access**. Incorporate a definition of access to transit into the objective language.

- **Corridor analysis**. Add park-and-ride stalls as a factor considered in calculating target service levels for corridors (a recommendation of the Service Guidelines Task Force).

b. Establish policy guidance in Metro's long-range plan, including a vision for transit parking and nonmotorized access in the future network, to guide steps toward achieving access goals.

5. **Bike and pedestrian connections:** Metro will work collaboratively with local jurisdictions, other agencies, private organizations and others to work to improve bike and pedestrian connections to transit.

   Steps could include but are not limited to:

   a. Continue efforts to improve bike and pedestrian facilities at major transit hubs and park-and-rides and along transit corridors.

   b. Encourage and work with jurisdictions and other agencies to improve bike and pedestrian infrastructure, including connections between the regional trail system and transit.

   c. Pursue grant and other funding opportunities to fund active transportation infrastructure and programs.

   d. Strengthen Metro's active transportation practices. Steps could include reviewing capital investments, operational policies and business practices to systematically incorporate nonmotorized access into planning, programs and implementation.

6. **Transit parking:** Metro will work collaboratively with local jurisdictions, other agencies, private organizations and others to attempt to respond to demand for transit parking.

   Steps could include but are not limited to:

   a. Pursue opportunities to increase parking supply, such as leasing additional lots, sharing parking lots, or creating new parking where warranted by demand and supported by available resources.

   b. More comprehensively manage our existing parking resources and maximize their benefits through an expanded parking program.

      - Identify strategies to make more efficient use of existing parking; consider a range of management approaches including parking permits, parking charges, and technology such as real time parking availability signs.

      - Explore opportunities to increase access to park-and-rides through other modes including active transportation, private shuttles, improved local transit and other last mile connections.

      - Consider opportunities to support our vanpool and carpool customers while shifting parking demand away from the most highly used park-and-rides.

      - Expand our performance management system for parking; regularly review underutilized park-and-ride lots and strive to increase their efficiency.

- Use information gathered for identified metrics and regular data collection to describe the extent and quality of public access to the Metro system and identify needs for improvement.
- Continue to work with jurisdictions to implement on- and off-street parking policies to support transit parking objectives.
- Explore opportunities to restripe park-and-rides to create more spaces.

c. Continue to pursue grant and other funding opportunities to support infrastructure and programs that increase access to transit.

d. Through Metro's long range plan, consider how many stalls would be appropriate to support a future service network and identify the types of areas where park-and-ride investment would be appropriate.

7. **Transit-oriented development:** Metro will seek opportunities to improve access to transit, promote walkable communities and increase affordable housing by pursuing transit-oriented development (TOD) opportunities with cities, other transit agencies and private developers.

   a. Develop a framework for assessing the potential for TOD in projects to expand, maintain or surplus park-and-rides.

   b. Seek partnership opportunities and pursue grants to implement TOD.

   c. Identify potential TOD locations.

8. **Safety and security:** Metro will continue to promote safe and secure access to transit.

   a. Continue to improve wayfinding and customer information.

   b. Coordinate with local jurisdictions to respond to safety concerns. Particular actions might include:
      - Illuminate walkways and waiting areas.
      - Work together to identify locations where incidents are concentrated and allocate resources to those areas.

IV. Regional coordination

9. **Continued regional coordination:** Metro will continue to plan and coordinate with regional players who have an interest in access to transit issues, including Sound Transit, WSDOT, PSRC and other agencies and jurisdictions.

   Steps could include but are not limited to:

   a. Continue to participate in PSRC's ongoing Regional Transit Access Assessment and the Vision 2040 update.
      - Contribute to the development of a transit access toolkit that will inform access improvements in a given environment.
      - Identify relevant access-related policy and funding needs to incorporate into the next update of Transportation 2040.

b. Continue to work with Sound Transit, the Washington State Department of Transportation and other agencies to help shape a regional approach to transit parking management.
c. Work closely with Sound Transit in the implementation of ST2 and development of ST3, to coordinate access planning for all modes, ensure strong intermodal connections and supporting facilities, and seek TOD opportunities.
d. Continue coordination with transit agency partners and jurisdictions in the development of Metro's long range plan.
e. Continue collaboration with the King County Department of Natural Resources and Parks to improve connections between the regional trail system and transit.

FIGURE 2: STRATEGIC PLAN UPDATES

Metro is in the process of updating its Strategic Plan for Public Transportation and Service Guidelines. Based on findings of the Access to Transit study, the proposed plan update includes changes to strategies and performance measures regarding access to transit, transit parking, bicycle and pedestrian access, transit-oriented development and performance measures. This section summarizes those changes specifically related to access to transit. The full text of these specific changes is in Appendix B. There are additional changes in the proposed Strategic Plan and Service Guidelines update that are not discussed in this report.

Definition of access to transit

Language to further define access to transit has been added to objective 3.2.

Strategy changes related to access to transit

Several changes to the strategies are suggested for the update to the strategic plan, which was transmitted to Council on December 15, 2015. These include:

1. Modify strategies 3.2.2, 3.2.3, 3.3.1, and 3.3.2 to better characterize how Metro will value park-and-rides and all types of access to transit.
2. Modify strategies 3.2.2 and 3.2.3, and add strategy 3.2.4, to address how Metro will facilitate convenient and safe access to transit by all modes.

Additional annual measures

Metro recommends including additional measures as part of its annual reporting to present a fuller understanding of the components of access. As noted in the July report, access depends on many factors including the quality and ease of connection by different modes, the surrounding land use, the safety and directness of the surrounding street and sidewalk network and the availability of service at the access point.

The measures Metro currently use is:

- Population and jobs ¼-mile from bus stop or 2 miles from a park-and-ride based on the actual network
- Park-and-ride utilization

These measures do not capture all of the aspects of access and overstate access at park-and-rides.

Proposed measures – an access to transit snapshot

To address the shortcomings of the existing measures, Metro proposes to modify and add measures to the annual reporting process, as part of the update to the strategic plan. With the proposed changes, the combination of existing, modified and new measures would provide an access to transit snapshot, as shown in Figure 3 on the following page.

FIGURE 3: ACCESS TO TRANSIT SNAPSHOT BASED ON MEASURES FROM THE STRATEGIC PLAN UPDATE

Value	Measure	Rationale
Walk access	• Population (total, low income, minority) and jobs within walking distance of bus stops, (similar to existing)*	This is a standard measure that reflects the general reach of transit. It helps Metro monitor equitable opportunity for all people to access public transportation. It was modified to remove the park-and-ride component because that was potentially misrepresenting the coverage of transit.
Availability of service	• Population (total, low income, minority)and jobs within walking distance of frequent service(new) • Households within specific ranges of distance from frequent service (new).	The first measure is proposed to reflect access to frequent service, which provides greater certainty of service availability and convenience. The second measure will essentially be a map of 'access zones,' based on different distances from frequent service.
Bike access	• Bike locker parking capacity and utilization (including number of locations with bike lockers) (new).	This measure reflects the availability of bike infrastructure. Secure bike parking at stops and stations is seen as one important element of bike access.
Park and rides	• Park-and-ride capacity and utilization (existing) • Park-and-ride capacity and utilization at lots with frequent service (new).	Metro regularly tracks the capacity and use of all park-and-rides in King County. Metro proposes to continue tracking utilization and also highlight lots that are served by frequent service.
Accessibility	• Average number of jobs and households accessible within 30 minutes countywide (total population, low-income population, minority population) (new). • Average number of jobs and households accessible within 30 minutes from regional growth centers, manufacturing/industrial centers, and transit activity centers (new).	Metro is developing a new tool that provides information on how well various areas of King County are served by transit. These measures reflects the effectiveness of a total transit trip, including getting to transit initially, the travel time and the connection from transit to the final destination. They measure what can be accessed via transit within a given time from a given location.

*this measure was modified slightly to focus on walk access; the park-and-ride component was removed

Section Two: Research Overview

I. Measures and reporting

Customers' ability to access transit depends on many factors. Through conversations with our stakeholders, we have heard that Metro should expand its measures and reporting to more fully capture the multiple facets of transit access and identify a clear path to improvement.

Metro currently tracks the number of jobs and people within a quarter-mile of a bus stop or within two miles of a park-and-ride. When considering people, Metro considers the total population as well as low income and minority populations. Metro also tracks park-and-ride capacity utilization at all 130 park-and-ride lots in King County in a quarterly utilization report, including lots owned and leased by King County, the Washington State Department of Transportation, and Sound Transit.

Additional aspects of transit access affect the effectiveness and convenience of transit. These include the availability of service at the access point, the quality of the walk and bike environment, and the availability of parking spaces and the transit services customers want at park-and-rides.

Metro conducted a literature review to learn what other transit agencies do to measure and report on access. This section provides findings from this research in order to suggest additional measures and tools that Metro could consider. It also describes some recent data collection efforts that Metro has undertaken.

Common system measures

Transit agencies across the country use different ways to measure system access (defined in text box to the right). Based on an overview, some of the most commonly used measures track service coverage and park-and-ride access and utilization. An emerging system level measure is accessibility.

Service coverage

"Service coverage" measures the extent to which the defined service area is being served. How far people have to travel to reach transit affects the convenience and attractiveness of the service. It also affects what type of mode people might use to access transit, if they use transit. For example, research suggests that people will generally walk between a quarter-mile and half-mile to transit, depending on terrain and frequency of service. If people live farther than a comfortable walk distance from transit, they will likely need to bike, drive, or get a ride to reach transit. A bike shed is

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.

considered to be a radius of three miles.

Metro's current measure of the number of people and jobs within a quarter-mile of a bus stop is similar to how many agencies measure service coverage. What some other agencies do differently than Metro is add a component that measures access to frequent service. For example, Southeastern Pennsylvania Transit Authority defines an area as "served" if a stop is a half mile away with 60-minute service, but an area is "well-served" if a stop is not more than a quarter mile away with a minimum of 30-minute service. Denver tracks the percent of regional destinations that are within a half-mile of transit stations and a quarter-mile of bus stops served by high-frequency transit. By monitoring this over time, Denver has been able to report that its bus expansion program is providing more people with access to more places.

Park-and-ride utilization

Metro explored options to capture park-and-ride access. We recognize that our current measure of population within two miles of a park-and-ride does not reflect the availability of parking, nor does it necessarily reflect the true draw area of any given park-and-ride lot.

The Transit Capacity and Quality of Service Manual acknowledges that there is not really a standard park-and-ride draw area that can be applied to all systems because the characteristics of metropolitan areas differ[1]. It has been observed that park-and-ride users usually come from upstream of the lot. Some studies have also shown that about 50 percent of the park-and-ride users in suburban lots traveled three miles[2] or less. The area served by a park-and-ride lot varies considerably, however depending on the type of service available, the surrounding land uses, congestion on nearby roadways and other factors, making it hard to set an accurate draw area. It has also been shown that a large portion of users come from much further away—often up to 10 miles upstream of the lot.

A measure we found commonly used was park-and-ride utilization—the number of spaces used compared to the number available. Park-and-ride utilization was tracked both to identify high demand lots as well as define low-use lots. The Massachusetts Bay Transportation Authority (MBTA) and Massachusetts Department of Transportation (Mass DOT), for example, define a lot that has 85 percent or higher usage as "full." They also consider lots that are less than half full as underutilized[3]. The Florida Department of Transportation's Transit Office has published a comprehensive manual, the *Florida Department of Transportation State Park-And-Ride Guide*[4], that details numerous performance measures for park-and-rides, analysis methods, location criteria, effectiveness measures, and corrective measures for underutilized park-and-rides. Metro's quarterly park-and-ride utilization report[5] is in line with what many agencies do.

[1] See, the Transit Capacity and Quality of Service Manuel, 3rd Edition, here: http://onlinepubs.trb.org/onlinepubs/tcrp/tcrp_rpt_165ch-04.pdf

[2] Ibid, p. 3-43

[3] See, Boston Region MPO's Performance Measures, here: http://bostonmpo.org/Drupal/data/html/programs/cmp/Report/CMP_Report_Ch_3_Performance_Measures.html

[4] See FDOT's State Park-and-ride Guide, here: http://www.dot.state.fl.us/transit/Pages/FinalParkandRideGuide20120601.pdf

[5] See King County Metro Park & Ride Usage: http://metro.kingcounty.gov/am/accountability/park-ride-usage.html

Some agencies we reviewed use the identification of underutilized lots as a prompt for action. Washington Metro (WMATA) and Metro Minneapolis-St. Paul have both taken steps to improve utilization at underused lots through service adjustments and marketing. Section IV, Transit Parking policies and practices, goes into more detail.

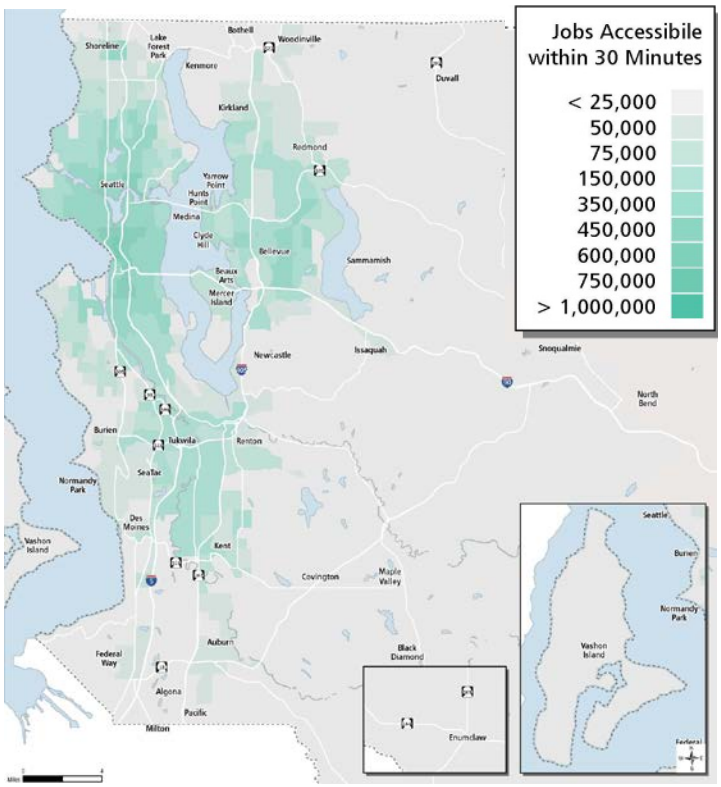
MBTA/MassDOT also track park-and-ride lot "fill rates," or what time lots fill up. They consider a lot to be over capacity if it fills up before the departure of the last morning peak-period train[6]. As part of their recent studies, Sound Transit and WSDOT collected data on fill rates at some of the most crowded park-and-rides in our region. Metro also just finished a fill-rate study of some of our most crowded lots.

Accessibility

An emerging performance measure is "transit accessibility," which evaluates the number of destinations people can reach by transit. Transit accessibility 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. Metro is proposing to add accessibility performance measures in our update to the Strategic Plan for Public Transportation, and to consider accessibility in our long-range planning.

Figure 4 is an example of a map that depicts the accessibility of jobs within a 30-minute transit trip during the morning commute period. The shading indicates the number of jobs accessible within 30 minutes, with the darker shading representing areas from which more jobs can be reached by transit.

FIGURE 4: TRANSIT EMPLOYMENT MOBILITY AM



[6] See, Boston Region MPO's Performance Measures, here: http://bostonmpo.org/Drupal/data/html/programs/cmp/Report/CMP_Report_Ch_3_Performance_Measures.html

Assessing needs and identifying projects: examples

The system measures discussed above are general indicators of access. A more thorough understanding of barriers to access and opportunities for improvement would require further analysis and assessment. Such efforts often require collection of more data than the annual system-level measures, but provide more detailed information.

This section describes examples of methodologies and tools that different agencies have used to assess and identify access needs. These tools can also help prioritize which investments are likely to have more benefit.

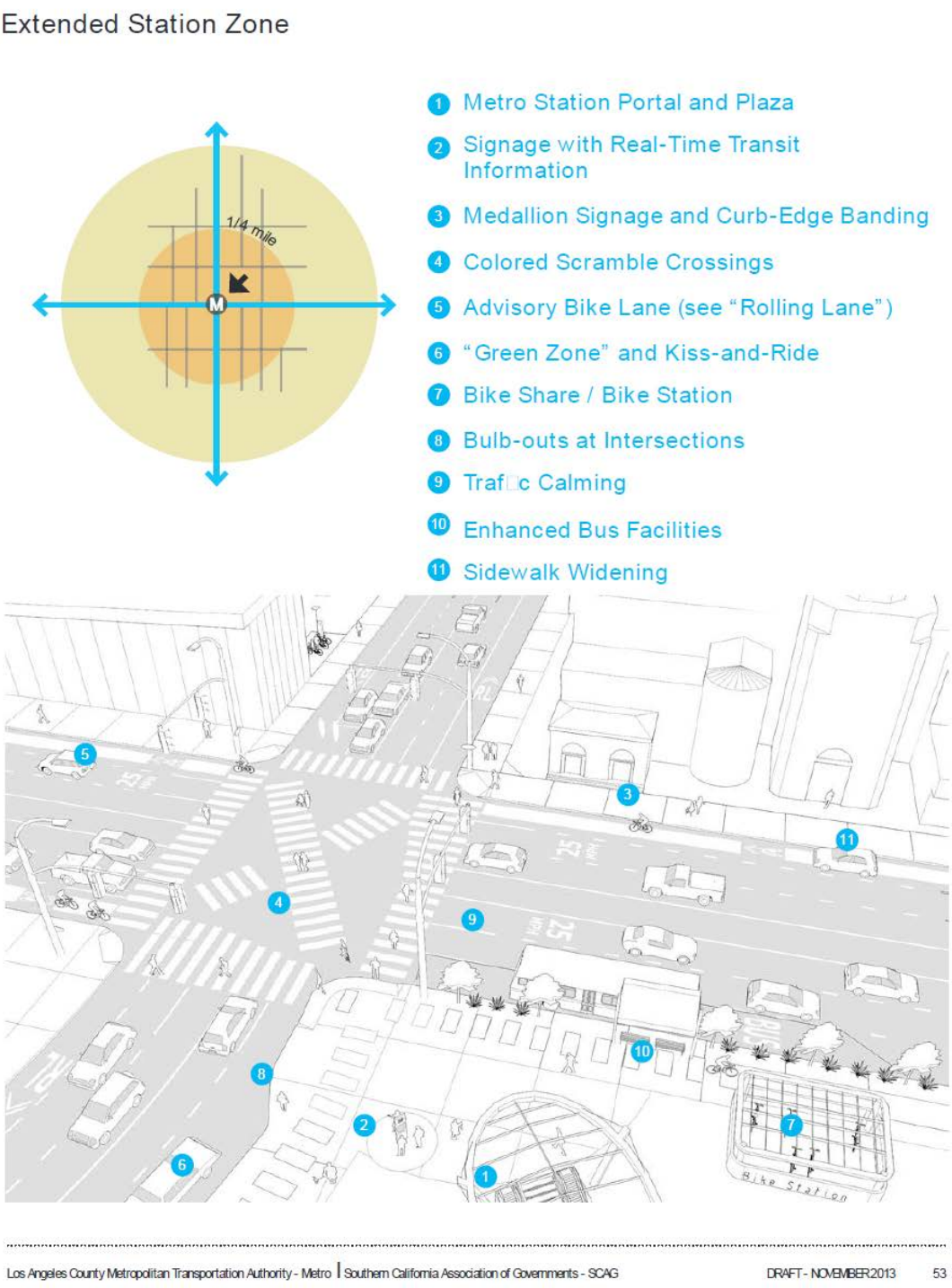
Example 1: Identifying pedestrian improvements: TriMet in Portland conducted a Pedestrian Network Analysis Project[7] to develop an objective, data-driven system for prioritizing places around the region where pedestrian infrastructure investments will provide safer, more comfortable access to transit. The study was designed to: prioritize safety, cost-effectively provide service, foster environmental stewardship and create great places. The study analyzed 7,000 transit stops to identify areas with high levels of need and opportunity. This project enabled TriMet to identify necessary improvements, communicate priorities, and make investments that provide better pedestrian access.

Example 2: Considering how to get people to transit or their destination: The First Last Mile Strategic Plan: Path Planning Guidelines (2013)[8] from Los Angeles County Metropolitan Transportation Authority (Metro) and the Southern California Association of Governments (SCAG) seeks to identify first- and last-mile gaps in transit service and how to address them. Mentioned briefly in the Phase 1 report, the First Last Mile Strategic plan lays out a strategic approach to assessing and identifying barriers at specific stations. With the goal to expand the reach of transit through infrastructure improvements and maximize multimodal benefits, the plan outlines a specific infrastructure improvement strategy to facilitate easy, safe and efficient access to the Metro system. It includes tools and a checklist that can be used to analyze an access shed, and suggests specific investments to improve stations. Figure 5, on the following page, illustrates this strategic approach.

[7] See, TriMet's Pedestrian Network Analysis, here: https://trimet.org/pdfs/about/trimet-pedestrian-network-analysis-report.pdf

[8] See, LA Metro's First Last Mile Strategic Plan, here: https://www.planning.org/awards/2015/pdf/FirstLastPlan.pdf

FIGURE 5: PUTTING IT TOGETHER ILLUSTRATION

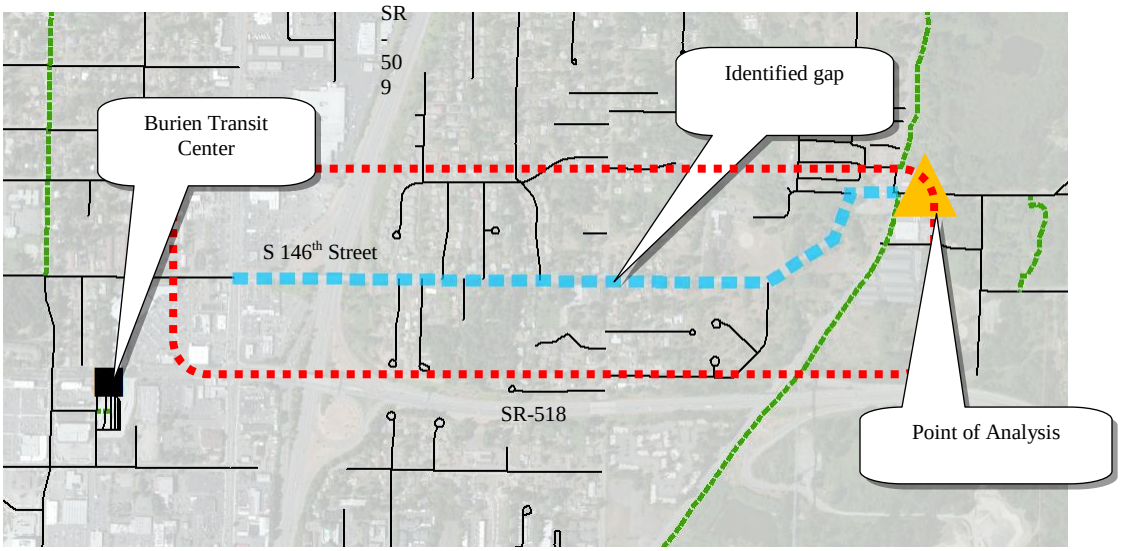


Example 3: Identifying candidate bike projects through the King County Metro/Sound Transit Nonmotorized Connectivity Tool. This tool, mentioned in the Phase 1 Report, helps identify site-specific improvements to address connectivity issues. As an initial application, this tool was used to analyze and evaluate candidate bicycle and pedestrian projects based on changes in connectivity and the potential number of new transit riders. Using these results, along with other data, such as cost and land use growth potential, a project prioritization list was developed and a number of candidates for bike lane improvements and bike locker installation were identified and proposed for grant funding. Figure 6 presents an example analysis.

FIGURE 6: EXAMPLE ANALYSIS OF BURIEN TRANSIT CENTER AND RAPIDRIDE F LINE

The Burien Transit Center has two areas with high bicycle stress levels. The City of Burien has plans for a number of projects that could help reduce bike stress and improve connectivity. The first high-stress area is between the Des Moines Memorial Drive Trail (in green) and the Burien Transit Center. The area is constrained by SR-518 and SR-509. Adding a bike lane along S 146th Street would provide a dedicated connection from the trail to the transit center. This project would substantially reduce the bicycle stress for the neighborhoods east of SR-509 and is included in the *2012 Burien Transportation Master Plan*.

Potential Project 19: *4,900 feet of new bicycle lanes along S 146th Street between First Avenue S and the Des Moines Memorial Drive Trail.*



Example 4: Puget Sound Regional Council (PSRC) case studies. PSRC is conducting eight in-depth case studies of major transit hubs or corridors around the region as part of its Regional Transit Access Assessment. The case study sites represent a variety of transit access challenges.

Case study locations

1. Federal Way Transit Center
2. 164th Street Corridor
3. Kent/James Street Park-and-Ride
4. Tacoma Dome Station
5. Bear Creek Park-and-Ride
6. Alaska Junction
7. Silverdale Transit Center
8. South Bellevue Park-and-Ride

The case studies pull together a number of assessment tools and data to comprise a step-by-step analysis for each location. They look at factors such as transit service, parking, and bike and pedestrian accessibility. This effort assembles a collection of data, including analysis using the King County Metro/Sound Transit nonmotorized connectivity tool, license plate survey maps and transit data. (See Figure 7, on the next page, for an example analysis.)

Based on the case study findings, the PSRC will identify characteristics that should be monitored and reported on regularly as a way to identify and highlight regional transit access needs and issues.

This study will also provide a high-level description of challenges, recommendations for local jurisdictions and transit agencies, and recommended methods for defining and measuring transit access. One of the project deliverables will be a matrix of strategies. The case studies will also lay the foundation for a potential toolkit of strategies and approaches to guide jurisdictions on ways to improve access to transit.

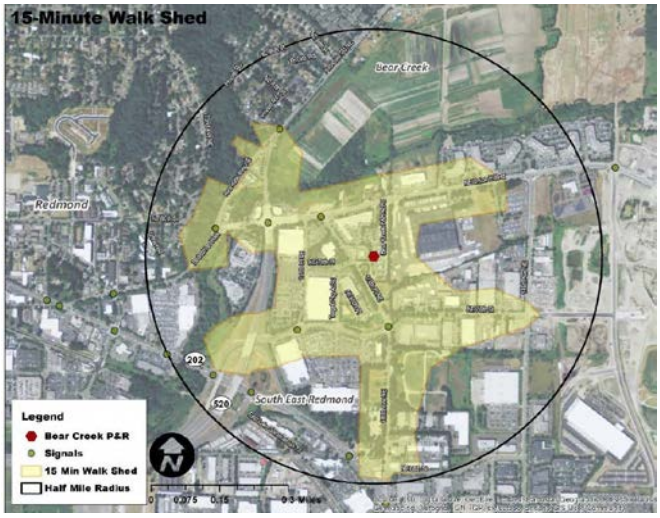
Some initial general findings of these case studies are:

- Context matters—many characteristics influence transit access, which means that improving access will require a context-specific approach.
- A lot of different agencies and jurisdictions play a role in providing transit access.
- The type, quality, and location of transit service drives demand for that service and has clear access implications.
- The region currently does not have policies around access to transit and transit parking.

FIGURE 7: EXAMPLE STUDY - BEAR CREEK PARK-AND-RIDE

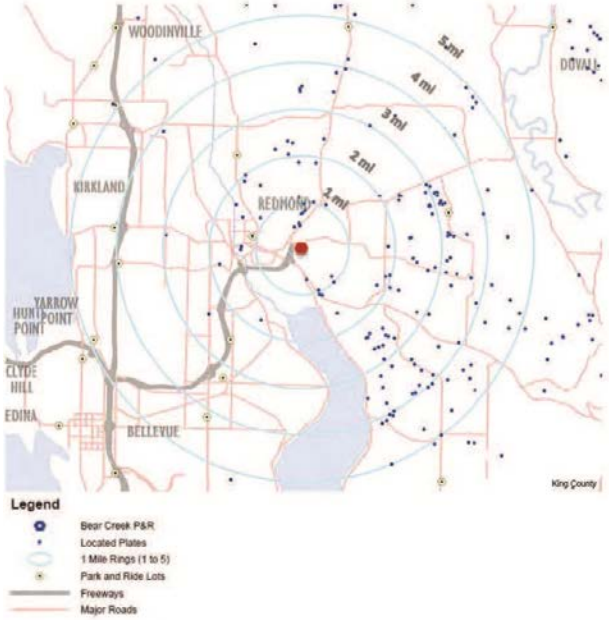
This case study allowed PSRC to pull together a variety of tools in a meaningful way to learn what is happening at the Bear Creek Park-and-Ride and what could be done to improve conditions there.

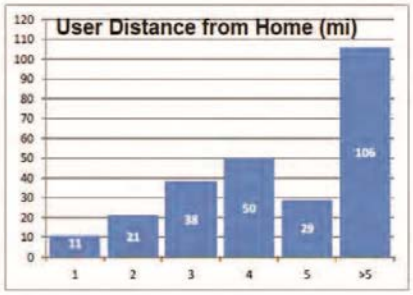
Built in 1989, the Bear Creek Park-and-Ride is owned by Metro and served by both Metro and Sound Transit. Its 283 parking spaces are usually full by 9 a.m. each weekday morning.



Bear Creek Park-and-Ride is located in an area where the super block structure of development limits opportunities for nonmotorized travel. This challenge is compounded by busy streets, changing development and travel patterns, and continued employment growth in the area. The image to the right shows the available walk access to the park-and-ride within 15 minutes, which is limited by the available pathways.

The majority of people who are using the Bear Creek Park-and-Ride are traveling more than five miles to access the facility, as shown in the chart below.





Statistics	
# Located Plates	255
# Stalls	283
Q1 2015 Utilization	98.2%
% of Stalls Located	90.1%
Minimum (mi)	0.5
Maximum (mi)	40.9
Median (mi)	4.1
Mean (mi)	5.4
Std. Dev.	4.7

Distance from P&R	% of Located Plates
0-1 mi	4%
1-2 mi	8%
2-3 mi	15%
3-4 mi	20%
4-5 mi	11%
5+ mi	42%

Strategies for addressing the known issues and limitations at the Bear Creek Park-and-Ride could include encouraging drivers to park at other upstream park-and-rides, encouraging vanpools to use a different lot, and expanding—though this would be expensive as construction of a structure would likely be necessary.

Example 5: Considering how park-and-rides and usage play a role in access. Metro's Park-and-Ride Arrival Times and Usage Studies, recently completed, provide more complete data about our park-and-rides. One study looked at the time when users arrive (also known as a "flow rate" study) and the other analyzed the "poaching" rate, or amount of unauthorized users parking at lots. Unauthorized users are people who are neither bus, nor vanpool nor carpool users.

We collected data on arrival times and usage patterns for 11 park-and-ride lots. We found that (a) lots fill most rapidly between 6 a.m. and 7:30 a.m., and (b) the majority of people parking arrive by themselves, with the occupancy rate roughly between 1.04 and 1.09.

As shown in Figure 8, most of the lots observed were more than 85 percent full before 8 a.m. Once a lot is at 85 percent capacity, it is not considered reliable for users looking for a space. Some lots fill substantially earlier than the average—at Bear Creek, 97 percent of users had already arrived by 8 a.m., and at the Redmond Parking Garage, 93 percent of users had arrived before 8 a.m. By 6:45 a.m., five of 11 lots (45 percent) were at least 50 percent full and eight of 11 (73 percent) were at least 33 percent full.

FIGURE 8: AVERAGE FILL RATES AND TIMES FOR KING COUNTY PARK-AND-RIDE LOTS

% of Users	All Lots	Lots excluding outliers*
50%	7:00 AM	6:45 AM
85%	8:10 AM	7:50 AM
95%	9:00 AM	8:40 AM

**excluding South Kirkland and Eastgate*

At many of the sites analyzed, unauthorized use[9] (poaching) was not a major problem, with a poaching rate of 1 percent or less. Two of the sites—Eastgate and Greenlake park-and-rides—had higher rates of poaching—7 percent and 8 percent, respectively.

This information helps better identify the issues and inform strategies. For example, this review suggests that unauthorized use, or poaching, is not a widespread problem but significant at a couple of locations. With this type of information, enforcements could focus on the problem areas.

Findings: Measures and reporting

Access to transit depends on many factors. Metro currently collects data on commonly tracked measures such as service coverage and park-and-ride utilization. Metro could modify and add measures and data points that build on what Metro currently tracks to more fully assess the public's access to our transit system and identify opportunities for improving access. Metro is currently developing new tools for assessing and some of these measures could be included in

[9] Non-compliant or unauthorized uses were people who parked on site and did not appear to be using transit or ridesharing.

our annual Strategic Plan Progress Report. Others could supplement our data to provide a better understanding of barriers to access and areas for improvement. This information can help guide action, identify projects and prioritize investments.

Key considerations

- Data and information provide a better understanding of what and where the barriers are to transit access, and can suggest opportunities for improvement.
- A number of agencies assess transit coverage by considering distance from transit, with some specifically considering distance from frequent service.
- Park-and-ride utilization data helps identify both high-demand lots and low-use lots. A number of agencies identify low-use lots and take steps to improve their usage. The time of day that lots fill up and where users come from are also valuable pieces of information.
- Some industry research has looked at how far people travel to park-and-rides, but the results vary considerably based on the surrounding land use, accessibility of the lot, the type of transit service available and other factors.
- Emerging tools that Metro and other agencies are developing will enable more in-depth analysis focused on specific access modes or locations. Such analysis will help us better understand issues and plan capital projects.

Recommended Next Steps

1. Modifications to measures: As part of the 2015 update of the Strategic Plan for Public Transportation, Metro will strengthen and clarify the access to transit measures we use.

- Revise and add metrics that will be reported on annually to better track the multiple facets of access and provide information to support Metro's planning and implementation of access improvements. Specifically: modify metrics to address service coverage, availability of transit service, bike access, park-and-ride utilization, and general transit mobility. See Figure 3 on page 15 for descriptions of the measures proposed in the 2015 update to the Strategic Plan for Public Transportation, and see Appendix B for the full text of the changes.

II. Funding options

Efforts to improve transit access often call for capital infrastructure investments. Major transit capital projects are traditionally funded from a combination of sources, including local revenues, grants, and partnerships. These projects often require partnerships not only for funding but also for planning, design and implementation. Ongoing operations and maintenance of capital facilities is another funding consideration.

Before identifying potential funding sources and pursuing them, agencies must first identify barriers to access and potential improvements, and then prioritize the improvement projects. Policies that establish priorities for investment can help agencies justify and advocate for project funding.

This section looks at how Metro and other agencies have identified, prioritized, and funded infrastructure improvements.

Funding at King County

Metro's major transit capital projects are typically funded from a combination of local revenues, grants and partnerships. Access improvements are generally considered capital expenditures, which are budgeted and tracked separately from operating expenditures. Major capital projects also have ongoing maintenance and operations costs that are funded differently than project construction but need to be considered when developing a funding plan.

Local sources for capital include sales tax, property tax and farebox revenue. The capital budget funds projects based on the following priorities, which align with Metro's adopted strategic plan: 1) maintaining infrastructure and replacing aging fleets; 2) supporting the service delivery system; 3) increasing efficiency or productivity to offset the cost of investment; and 4) forming partnerships with other jurisdictions and businesses throughout the region.

Current budgeted investments

Metro makes a variety of investments in pedestrian and bicycle facilities and amenities as part of our budgeted route facilities and engineering projects. Some examples of non-motorized projects include:

- **RapidRide Bike Facilities Project** will add on-demand bicycle parking at three locations and partner with two local jurisdictions to fund short segments of new bicycle lanes totaling approximately ½-mile. This project also funded the installation of bike parking (hoops) in the public right of way adjacent to RapidRide stations.
- **Seattle Secure Bike Parking Project** will add on-demand bicycle parking at the International District Station in the Downtown Seattle Transit Tunnel.
- **The Third Avenue Project** funded the conceptual design of pedestrian and bus stop improvements along Third Avenue between S Jackson Street and Denny Way, and will fund the reconstruction of sidewalks between Union and Pine Streets, as well as crosswalk repainting along the entire corridor.

King County Parks also invests in a number of non-motorized mobility projects, particularly through its regional trails system program.

Partnerships

Many large capital projects require collaboration and partnerships funding. For example, Eastgate Park-and-Ride received funding from numerous public agencies, including WSDOT and King County. The Issaquah Highlands Park-and-Ride was similarly funded by numerous public agencies.

The recent expansion of the South Kirkland Park-and-Ride had the following funding partners: Metro, WSDOT, the Federal Transit Administration, the City of Kirkland, and a nonprofit organization called "A Regional Coalition for Housing" for the affordable housing component of the project.

Project partnerships have many elements. Partnering to provide funding is a major component but projects also involve planning, design, implementation and maintenance.

The RapidRide nonmotorized improvements identified in the county budget required collaboration with local jurisdictions.

Grants

Grant funds often augment partnership efforts and local funding. Grant funding has been instrumental in many of Metro's park-and-ride expansion efforts. Between 1998 and about 2002, King County Metro added more than 2,000 parking spaces through construction of new park-and-ride lots, expansions, and transit-oriented development projects. A large portion of the funding came from grants, with some from local sources. For example, the Issaquah Highlands Park-and-Ride cost over $14 million. For this project, Metro received more than $10 million in grants and about $3 million from local sources. Other TOD and park-and-ride projects which received grant funding include Brickyard expansion, Federal Way – Star Lake, Burien TOD, South Kirkland TOD and Redmond park-and-ride garage.

> Federal Transit Law at 49 U.S.C. § 5302 provides support for key bicycle and pedestrian provisions. The FTA's capital project definition states, "A public transportation improvement including... pedestrian and bicycle access to a public transportation facility" is eligible for FTA funding.

Potential grant sources

Grant funding opportunities are available from both federal and state programs. Below in Figure 9 is a listing of the grant programs that are likely sources of funding for capital projects that would improve access to transit.

Examples of Metro's current use of grant funds for access-related projects

Metro has recently received grants to pursue access improvements through multimodal approaches. These grants involve partnerships with other agencies. Some examples include:

- **Park-and-Ride Efficiency and Access Project**: Metro, in partnership with Sound Transit, was awarded a Regional Mobility Grant from the Washington State Department of Transportation to improve mobility at overcrowded park-and-ride lots in King County. The grant award is $2.6 million for four years (2015-2017). Project strategies include the implementation of a high-occupancy parking permit program, improving non-motorized connections to the facilities through partnerships with local jurisdictions, and increasing bike parking capacity at the lots.

- **Park-and-Ride Pricing in Multifamily Developments**: Metro received a grant funded by the Federal Highway Administration's (FHWA) Value Pricing Pilot Program to explore opportunities for park-and-ride spaces at multifamily developments near high-capacity transit services.
- **Nonmotorized access to RapidRide corridors:** Metro received grant funding for RapidRide bike facility improvements identified using the Nonmotorized Connectivity Tool. Metro is using these funds to improve bike access to two RapidRide stations and to add on-demand bike lockers to three of RapidRide lines.

Transit-oriented development

Transit-oriented development (TOD) projects are opportunities for mutually beneficial partnerships. TOD projects often include transit improvements, such as parking or passenger loading zones, at relatively low cost to the transit agency. Metro used this approach successfully with the Downtown Seattle Transit Tunnel, and more recently at TOD facilities such as Overlake and South Kirkland.

FIGURE 9: ACCESS RELATED FUNDING OPPORTUNITIES

Funding Agency	Program Name	Program Purpose
FTA	Urbanized Area Formula Program	Provides grants for public transportation capital, planning, job access and reverse commute projects. These funds constitute a core investment in the enhancement and revitalization of public transportation systems in the nation's urbanized areas, which depend on public transportation to improve mobility and reduce congestion
FTA	Major Capital Investments (New Starts & Small Starts)	Provides grants for new and expanded rail, bus rapid transit, and ferry systems that reflect local priorities to improve transportation options in key corridors.
FTA	Bus and Bus Facilities	Provides capital funding to replace, rehabilitate and purchase buses and related equipment and to construct bus-related facilities.
FTA	Enhanced Mobility of Seniors & Individuals with Disabilities	Provides funds for programs to serve the special needs of transit-dependent populations beyond traditional public transportation services, in order to enhance mobility for seniors and persons with disabilities
FTA	Section 20005(b) Pilot Program for Transit-Oriented Development Planning	Supports opportunities to improve economic development and ridership, foster multimodal connectivity and accessibility, and improve transit access for pedestrian and bicycle traffic.
FTA	Paul S. Sarbanes Transit in Parks Program (5320)	Funds non-motorized transportation systems such as pedestrian and bicycle trails.

FHWA	Surface Transportation Program	Provides funding that may be used by States and localities for a wide range of projects to preserve and improve the conditions and performance of surface transportation, including highway, transit, intercity bus, bicycle and pedestrian projects.
FHWA	Congestion Mitigation and Air Quality	Provides funding to reduce congestion and improve air quality for areas that do not meet the National Ambient Air Quality Standards for ozone, carbon monoxide, or particulate matter (nonattainment areas) and for former nonattainment areas that are now in compliance (maintenance areas).
State	Complete Street	Advances Washington's multi-modal transportation system to support healthier communities and economies that align with local values.
State	Local Transportation and Health - Active Community Environments Program	Provides funds to support active transportation work. Communities that support active transportation work to improve the health and quality of life for Washington's citizens by improving and increasing opportunities to be physically active. This includes creating places where people of all ages and abilities can easily enjoy walking and bicycling
State	Regional Mobility Grant Program	Supports local efforts to improve transit mobility and reduce congestion on the region's most heavily traveled roadways.
State	Pedestrian and Bike Program	Promotes transportation system improvements to enhance safety and mobility for people who chose to walk or bike.

FTA = Federal Transit Administration, FHWA = Federal Highway Way Administration, State = Washington State Department of Transportation

Funding at other agencies

Sound Transit includes some money in project programming to fund parking and other access improvements. They also anticipate inclusion of a system access fund in the Sound Transit 3 system plan.

Some agencies fund their investments in park-and-rides and access infrastructure with revenue raised from parking charges. Bay Area Rapid Transit (BART) devotes a portion of its parking revenue to access improvements such as feeder service, real-time signs and lighting.

Washington Metropolitan Area Transit Authority (WMATA) also charges for parking at its facilities and uses parking revenue to help pay for access improvements. Park-and-ride expansion, however, is paid for completely by local jurisdictions.

Other transit agencies use TOD as opportunities to fund transit improvements. For example, Metropolitan Atlanta Rapid Transit (MARTA), works with private developers through joint development efforts to provide some of the transit amenities such as interconnection with transit lines, parking, passenger loading, and other capital investments. These investments

increase access while representing a powerful funding source for transit. This is discussed in more detail in Section V, Transit-oriented development.

Project identification and prioritization

The identification and prioritization of projects is another important question in getting improvements funded and implemented. Analysis methods and tools such as those mentioned in the Measures and Reporting sections can be valuable. These efforts can identify where barriers to access are and what some potential improvements are. The ability to demonstrate project benefits and provide cost benefit analysis helps rationalize funding. Policies that provide project prioritization guidance also help justify and advocate for project funding.

Findings: Funding Options

Access to transit frequently relies on capital infrastructure. Metro's capital program places high priority on funding to support a state of good repair and ongoing operations and maintenance associated with major capital projects. Metro makes ongoing investments in infrastructure and facilities through its capital program and grants, but major new investments will likely require partnerships with other agencies, local jurisdictions, and the private sector. Identification and prioritization of projects are critical steps in the funding and implementation process.

Key considerations

- Major capital projects require large investments to build and also require ongoing operations and maintenance costs.
- Agencies prioritize capital funding to support state of good repair and ongoing operations and maintenance associated with major capital projects.
- Major capital infrastructure investments rely on collaboration and partnerships, not only for funding but also for planning, design, and implementation.
- Grant funding plays a major funding role, but can be unpredictable. Additionally, grants generally do not fund ongoing operations and maintenance needs.
- Some agencies that charge for parking are able to raise revenue for investment in access improvements.
- Funding is also important to ensure resources for data collection, research, and analysis.
- Tools that demonstrate the benefits of a project help agencies prioritize and advocate for project funding.

Recommended Next Steps

1. **Partnerships and grants:** Metro will continue to work with partners and seek grant opportunities to fund capital projects and practices to enhance transit access.
2. **Internal and partner agency resources**: Metro will seek opportunities through internal resources and partnerships to further develop and apply tools to measure access and identify and prioritize access improvements

III. System access policies and practices

Metro's review found that a number of agencies have policies, guidelines and plans to guide access planning and implementation. Most of these agencies have plans and guidelines that address access by all modes, while some have specialized guidelines targeted at specific modes or focused on station-area planning.

Access guidelines and priorities

Bay Area Rapid Transit (BART) and Washington Metropolitan Area Transit Authority (WMATA) both identify good access to transit as critical to meeting ridership goals and serving customer needs. They recognize that potential riders will be lost if they cannot reach transit because park-and-rides are full, no connecting bus service is available or walking feels unsafe or inconvenient.

BART[10] and WMATA also both have station access guidelines, as do Denver's Regional Transit District and Chicago's Regional Transit Authority (RTA). These guidelines include physical design guidance and serve as a resource to support collaboration between transit agencies and local jurisdictions.

FIGURE 10: WMATA ACCESS HIERARCHY

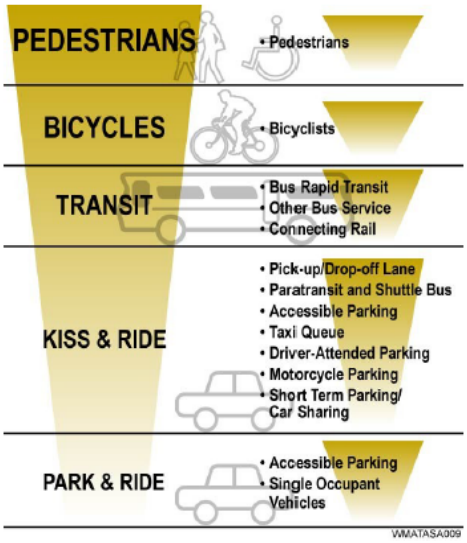
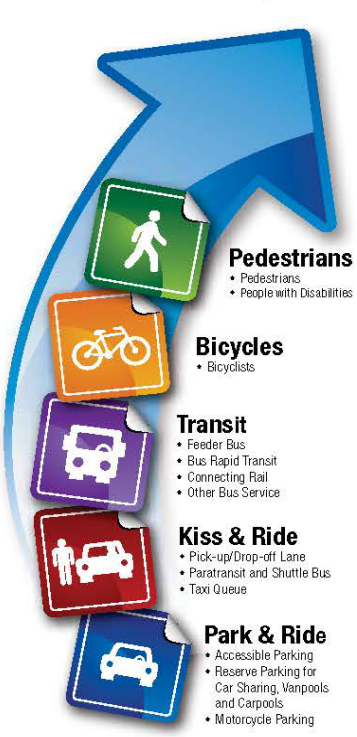


FIGURE 11: CHICAGO RTA ACCESS HIERARCHY



These guidelines share a common emphasis on modes that produce the highest ridership at the least cost. BART, for example, considers a "cost per rider" metric.

Pedestrian access is usually the least costly to provide and is the highest priority, as can be seen in the examples of agency "access hierarchies" in figures 10 and 11. These hierarchies provide a rationale for station site planning and design[11]. Denver's Regional Transportation District strives to create an optimal balance of modes. RTD uses a hierarchy that places pedestrian access at the

[10] See, BART's Station Access Guidelines, at: https://www.bart.gov/sites/default/files/docs/access_guidelines.pdf

[11] See, WMATA's Station Site and Access Planning Manual, here: http://www.wmata.com/pdfs/planning/Station%20Access/SSAPM.pdf

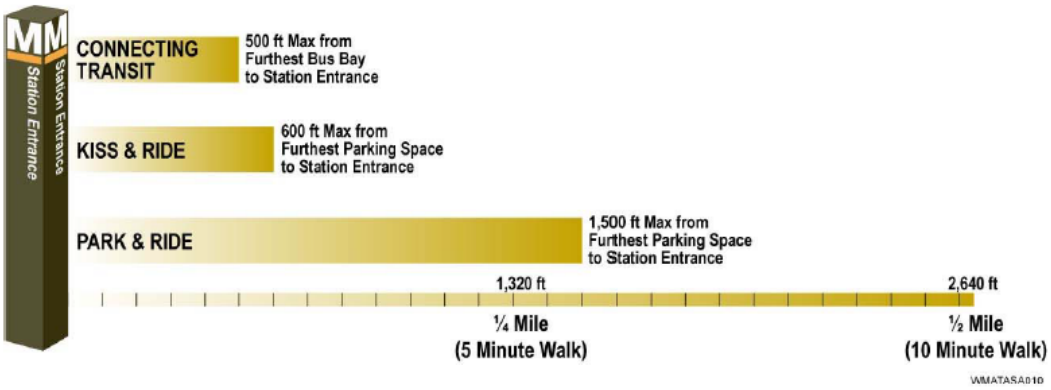
top and looks at the marginal cost of increasing ridership through different access modes[12].

Dallas Area Rapid Transit's (DART) TOD guidelines include what it calls "priority for circulation" in which pedestrian circulation is given top priority and single-occupant vehicles the bottom. Sound Transit's system access policy also prioritizes pedestrian access. Bellevue's *Transit Master Plan*[13] provides a policy framework that includes guidance and strategies regarding pedestrian and bicycle access and environment, the transit stop, park-and-ride access, transit connections, convenience and frequency, and TOD.

Pedestrian access

Many agencies have design guidelines or best practices for pedestrian facilities. WMATA, as shown in Figure 12, states that good pedestrian access to station entrances is essential in station site and access planning since all transit customers eventually become pedestrians when transferring between modes[14]. The design of facilities is also an important factor in supporting pedestrians.

FIGURE 12: WMATA ALLOWABLE WALKING DISTANCES FROM STATION ENTRANCES



NOTE: Distances shown reflect the maximum horizontal distance allowed as measured along the actual pedestrian path. Shorter walking distances are preferred. Estimated walking times may vary and are based on average pedestrian speeds of 4.5 feet per second.

Hawaii has created The *Hawaii Pedestrian Toolbox: A Guide for Planning, Design, Operations, and Education to Enhance Pedestrian Travel in Hawaii.*[15] This toolbox presents a range of design practices to encourage and increase pedestrian access to transit and pedestrian friendly environments. It also outlines pedestrian-friendly, multipurpose land uses that should be encouraged near transit facilities. In addition, it illustrates that too much parking can discourage use of transit and includes incentives for development that reduces parking requirements.

[12] See, RTD's Transit Access Guidelines, here: http://www3.rtd-denver.com/content/Eagle/VOLUME_3_-_REFERENCE_DATA/Transit%20Access%20Guidelines%20Final,%20Jan%202009.pdf

[13] See, Bellevue's Transit Master Plan, at: http://www.ci.bellevue.wa.us/pdf/Transportation/BellevueTransitMasterPlan_20140707.pdf

[14] See, WMTA's Station Site and Access Planning Manual, at: www.wmata.com/pdfs/planning/Station%20Access/SSAPM.pdf

[15] See, Hawaii's Pedestrian Toolbox, at: http://hidot.hawaii.gov/highways/files/2013/07/Pedest-Tbox-Hawaii-Pedestrian-Toolbox-Low-Res.pdf

Bicycle access

Our review found that a number of agencies have guidelines concerning how and where to improve bicycle access. This guidance helps inform agency investments and planning as well as provide a foundation for partnerships with local jurisdictions.

BART objectives to promote bicycling:

- Improve station circulation for passengers with bicycles
- Create world-class bicycle parking facilities
- Help assure great bicycle access beyond BART's boundaries
- Optimize bicycle accommodations aboard trains
- Complement bicycle-supportive policies and facilities with support programs

BART is a leader in promoting bicycling as a way to access transit. In the *BART Bicycle Plan: Modeling Access to Transit,* they have set a goal of doubling bicycling access to 8 percent of all trips by 2022[16]. The plan identifies strategies to promote bicycling to and from BART stations and considers opportunities to modify station designs to encourage more bicycles and fewer cars. It includes a Bicycle Investment Tool that helps select investments that will create the largest increase in bicycle access trips.

WMATA has a mandate to increase bike mode share and to double bike mode share to park-and-rides by 2020. They have worked to improve connections to local trails and continue to work with jurisdictions to improve bike pathways. They are also working to improve signage, bike racks, bike lockers and secure bike cages (shown in Figure 13). They have found bike cages are particularly effective in areas with high risk of theft.

FIGURE 13: BIKE CAGE

The Federal Transit Authority and bicycle and pedestrian access

As noted in the Funding section, the FTA recognizes the importance of bike and pedestrian access to transit. They have acknowledged that all bicycle improvements within three miles and pedestrian improvements within one-half mile of a public transportation stop or station can be considered part of the station or stop improvement, and are therefore eligible for federal funding.[17]

[16] See, BART's Bicycle Plan: Modeling Access to Transit, at: https://www.bart.gov/sites/default/files/docs/BART_Bike_Plan_Final_083012.pdf

[17] See, The Federal Transit Administration's Bicycle and Transit flyer, at: http://www.fta.dot.gov/documents/Flyer_BikesandTransit_Full.pdf

Findings: System access

Bike and pedestrian connections. Many agencies have policies, plans or guidelines that acknowledge the importance of all modes of access in supporting ridership, and making transit more convenient and attractive. Generally these policies strive for balance among the modes and establish a priority framework for access investments, with priority given to improvements that will do most to increase ridership at the lowest cost. Generally that means that pedestrian access is seen as the highest priority, followed by biking and transit connections with provision for single-occupancy vehicles when other modes have been considered.

Key considerations

- Many agencies have established explicit access strategies, policies and guidelines
- Many agencies are developing multimodal approaches to access with an increasing emphasis on modes that rely on low cost investments
- Many agencies have a stated prioritization approach or hierarchy of investments that usually ranges from pedestrian as highest priority/lowest cost to vehicle access and parking/highest cost, as shown in Figure 1.

Safety and security. Agency programs that promote safety and security are critical as people are more likely to utilize facilities where they feel safe.

Key considerations

- A safe and attractive walking environment is critical to enhancing the pedestrian experience.
- Jurisdictions are potential partners in addressing safety issues.

Recommended Next Steps

1. **Policy framework changes**: Metro will strengthen and clarify its guiding framework regarding access to transit through the 2015 strategic plan update and the adoption of the long-range plan.
    a. Propose the following changes related to access to transit as part of the 2015 update of Metro's Strategic Plan for Public Transportation and Service Guidelines:
        - **Access related strategies**. Revise and add strategies to strengthen language related to parking demand, security at park-and-rides, nonmotorized access, and transit-oriented development. See Figure 2 on page 14 for a summary of suggested strategic plan updates related to access to transit and Appendix B for the full text for the changes related to access to transit.
        - **Definition of access**. Incorporate a definition of access to transit into the objective language.

- **Corridor analysis**. Add park-and-ride stalls as a factor considered in calculating target service levels for corridors (a recommendation of the Service Guidelines Task Force).

b. Establish policy guidance in Metro's long-range plan, including a vision for transit parking and nonmotorized access in the future network, to guide steps toward achieving access goals.

2. **Bike and pedestrian connections:** Metro will work collaboratively with local jurisdictions, other agencies, private organizations and others to work to improve bike and pedestrian connections to transit.

   Steps could include but are not limited to:

   a. Continue efforts to improve bike and pedestrian facilities at major transit hubs and park-and-rides and along transit corridors.
   b. Encourage and work with jurisdictions and other agencies to improve bike and pedestrian infrastructure, including connections between the regional trail system and transit.
   c. Pursue grant and other funding opportunities to fund active transportation infrastructure and programs.
   d. Strengthen Metro's active transportation practices. Steps could include reviewing capital investments, operational policies and business practices to systematically incorporate nonmotorized access into planning, programs and implementation.

3. **Safety and security:** Metro will continue to promote safe and secure access to transit.

   a. Continue to improve wayfinding and customer information.
   b. Coordinate with local jurisdictions to respond to safety concerns. Particular actions might include:
      - Illuminate walkways and waiting areas.
      - Work together to identify locations where incidents are concentrated and allocate resources to those areas.

IV. Transit parking policies and practices

Many transit agencies include parking facilities for transit users. Park-and-rides and other transit parking provide access to transit for people located beyond a reasonable walking distance or unable to use other access modes. In some areas, transit parking is the only convenient option for many people to access the transit network.

Many agencies are facing increasing demand for transit parking and overcrowding is a common problem. Providing new parking is increasingly costly however and can have other trade-offs. In Puget Sound, the cost per stall to build new parking ranges from $20,000-35,000 in a surface lot and $35,000-55,000 in a structured garage[18]. (Cost estimates are based on construction, project management and design. They do not include the cost of land).

As a result, agencies in Puget Sound and around the country are working to develop strategies to use existing parking resources more efficiently and find affordable ways to provide more parking in order to provide access to transit. This section provides an overview of different practices, policies and management techniques that agencies use to oversee their parking and identifies some approaches that other agencies have used in response to growing demand. Summary information about park and rides in King County can be found in Figures 15 and 16 starting on page 45.

Managing existing resources

Many agencies are trying to get the most efficient use out of parking facilities and provide more equitable access to limited parking spaces through parking management programs, including pricing and permitting. Parking charges can help manage demand and raise revenue.

Pricing

One way that agencies manage limited parking spaces is through pricing of those spaces. The subsequent examples show how a Puget Sound area agency is looking at pricing and provides examples of how other agencies have implemented pricing.

Puget Sound Region Example: Sound Transit Permit Parking Pilot: Sound Transit implemented a 6-month parking permit pilot at Mukilteo Station, Issaquah Transit Center, Sumner Station, and Tukwila International Boulevard Station, to test potential for pricing their facilities. The pilot which ended in July 2014 offered solo driver and carpool permits at $33 and $5 per quarter respectively. More than 500 people participated, with more than 1,400 submitting permit applications. Approximately 25 percent of the total available spaces at the four facilities was dedicated to permit parking with the balance remaining free and open to the public on a first-come, first served basis. Non-permit holders were able to park in unused permit spaces after 10 a.m. on weekdays and at any time on weekends.

The permit pilot findings showed that there is a high level of interest in permitted parking, and that customers are willing to pay for a guaranteed parking space in high demand lots. These

[18] King County Metro, Design and Construction section

findings suggest that under the right circumstances, permits are an effective way to manage demand, improve facility efficiency and increase access for transit customers.[19] Subsequent to the pilot, the Sound Transit board authorized a parking permit program. To help transit riders find parking quickly and reliably, Sound Transit will offer permit parking at its busiest lots and garages, starting in 2016. Sound Transit is in the process of refining the details of the program.

Examples from other transit agencies: We found several other agencies that charge fees for parking. In Washington, DC, WMATA has priced its park-and-rides since its system opened. WMATA uses the revenue to invest in access improvements. In the San Francisco Bay area, BART who has 45 stations with about 47,000 total spaces, has recently phased in pricing at all of its rail stations with parking. The agency uses some of its parking revenue to invest in station access improvements such as feeder service, real-time signs, lighting, and bike stations.

Charges can range from monthly permits to daily parking fees. In many places, charges are broken down by market segments, such as short-term parking, all-day commuter parking, and long-term parking[20].

Examples of specific pricing practices

1. **Reserved monthly parking:** WMTA provides monthly reserved parking permits which allow guaranteed parking spaces (until 10 am on weekdays) to permit holders. Permit holders still have to pay the daily parking fee any time they park in a WMTA facility. BART also has monthly parking permits that range in price depending on specific station demand. BART monthly parking permit holders are not required to pay an additional daily parking fee.

2. **Daily parking fees**: BART charges daily parking fees. WMATA also charges daily parking fees for its 47,000 spaces at park-and-ride lots. Daily prices vary by station but can reach $5 per day.

3. **Short-term metered parking:** TriMet has metered short-term parking near the entrances of two of its busiest park-and-ride stations. Parking costs $.50 per hour and there is a five-hour time limit. This metered parking has high turnover, so more people use each space each day. This also provides access for midday travelers who otherwise may not be able to park at the station.

4. **Long-term/multi-day parking:** BART offers some long-term/multi-day designated parking spaces at stations in order to accommodate longer travel (such as airplane trips). A limited number of permits can be purchased for long-term parking, which is priced much higher than the daily parking fee. The higher fee covers some of the fee and fare revenue that BART loses from the long-term parking spots.

[19] See, Sound Transit's Parking Management Pilot Project at: http://www.soundtransit.org/sites/default/files/documents/pdf/rider_guide/parking/20150403_rpt_parkingpilot_drafteval.pdf

[20] See, Denver Regional Council of Governments' Transit Agency Parking Pricing and Management Practices: Peer Review at: http://tod.drcog.org/sites/default/files/documents/Transit%20Agency%20Parking%20Pricing%20and%20Management%20Practices_%20Peer%20Review.pdf

5. **Non-resident parking fees:** Dallas Area Rapid Transit (DART) implemented a paid parking program that charged non-residents to park at a specific park-and-ride where area residents complained about non-service area users. Residents could get a sticker that permitted them to park without paying. Others had to pay. DART found that this solved the problem at the lot where a charge was implemented but it led to people shifting to free lots and increasing crowding at different locations. DART ended up discontinuing the charge.

6. **Carpool/HOV parking:** BART has a carpool program that provides designated parking spaces for carpool to BART members at park-and-rides. BART also provides assistance with matching riders to form carpools. Carpool-only parking spaces are enforced from 6 to 10 am, Monday through Friday. Carpool must have at least two registered members, and everyone who rides in the carpool vehicle must be a registered member. Having a carpool permit does not guarantee a parking space. Additionally, some stations charge for carpool parking.

Increasing efficiency

Another way that agencies manage limited parking spaces is through increasing efficiency of those spaces and park-and-ride lots. The subsequent approaches show how a sample of other agencies have looked at increasing efficiency.

1. **Coordinated parking management of on and off-street parking:** BART and the City of Oakland are creating a Joint Powers Authority to manage parking on BART property and surrounding areas and to manage station access improvements. This authority provides coordinated management of on- and off-street parking around stations, which helps promote ridership and prevent spillover issues in the neighborhoods adjacent to stations.

   Metro has identified a range of potential strategies that cities could implement to help improve transit parking. (These are shown in Figure 14 on page 43).

2. **Customer information: dynamic signs**: Real-time parking information, guidance and wayfinding systems make it more convenient to find parking and can help use parking resources more efficiently. These systems range from guidance given in the garage itself as to the location of available spaces to guidance systems that provide directions to parking garages with available space[21].

   Metro Minneapolis-St. Paul uses dynamic signage that 1) reports travel time by car and travel time by bus traveling in bus lanes and 2) shows parking availability at upcoming lots to help direct users to lots with available space.

   Sound Transit is testing real-time availability monitoring as part of its pilot project at Federal Way Transit Center, Puyallup and Auburn Sounder Stations, and South Everett Freeway Station. Real-time information is available for customers via the Sound Transit website.

3. **Underutilized lots:** WMATA tried to encourage use of underutilized lots by lowering parking prices and increasing advertising, without much success. They found that lots served by buses providing connections to rail were not well used, even though the buses were free and

[21] See, Metropolitan Transportation Commission's Handbook titled, Reforming Parking Policies to Support Smart Growth at: http://www.mtc.ca.gov/planning/smart_growth/parking/parking_seminar/Toolbox-Handbook.pdf

operated at 10-15 minute frequency. Riders preferred to park directly at the rail stations. Minneapolis Metro also tried to improve the attractiveness of underutilized parking by advertising less-used lots and improving service levels, but was unsuccessful in attracting more riders**.**

King County Metro has started an analysis of its underutilized park-and-rides to better understand the factors that may be contributing to low utilization. As part of its expanded parking program, Metro will further explore the potential to improve utilization through steps such as service adjustments or marketing with a particular focus on the 14 permanent lots with less than 50 percent utilization.

4. **Restriping**: A number of agencies including Metro Minneapolis-St. Paul have been able to restripe parking into smaller parking spaces to achieve more space.

   King County Metro recently undertook an analysis of its most crowded lots to explore opportunities to increase parking through restriping. The results suggested potential at a number of lots. Metro is doing further analysis and working with jurisdictions to determine where this might be feasible and effective.

Increasing parking supply

Another way that agencies manage limited parking spaces is through increasing parking supply. A survey of other agencies' practices found a number of potential approaches that could increase parking supply through partnerships and collaborative efforts.

1. **Leased lots and other shared parking**: TriMet shares the use of privately owned and operated parking facilities. Half of all the park-and-rides in the Portland metropolitan area are in privately owned facilities (which constitute 20 percent of TriMet's parking spaces overall). This allows TriMet to use more of its capital funds for transit vehicles and facilities. Metro in Minneapolis- St. Paul has also successfully added to its parking supply through leased lot agreements.

   In King County, Metro works with organizations such as churches, city parks and shopping centers to develop leased lot agreements to augment its park-and-ride capacity. There are 66 leased park-and-ride lots, 62 of which Metro leases. These add roughly 2,400 spaces to the system.

   Metro is also exploring the opportunity to share parking at multifamily housing developments for transit users.

2. **Park-and-ride expansion**: Practices for funding park-and-ride expansion vary greatly across the country. At WMATA, any expansions to parking capacity are financed by local jurisdictions. Sound Transit's system expansion includes provisions for additional park-and-ride capacity at many of its light rail stations. Sound Transit also allocates funds to support access improvement for bikes and pedestrians. As part of parking expansion, Sound Transit is also moving forward with a parking permit program at its busiest lots.

   King County Metro's expansion of park-and-rides in recent years has been achieved primarily through transit-oriented development partnerships. For example, Metro recently partnered on the South Kirkland Park-and-Ride TOD, which implemented mixed-use development while

adding transit parking. The development itself resulted in 241 households with direct access to transit at that location.

Last-mile connections and demand management practices

Another way that agencies manage limited parking supply is through improving last mile connections and other demand management practices. The subsequent approaches show how other agencies have improved last mile connections and demand management.

1. **Bike access:** WMATA started bicycle parking to support bike access to park-and-rides, and found secure bike parking to be successful at lots with high demand and high theft. BART also develops bike parking at its stations. Minneapolis Metro is implementing a pilot program to develop bike cages at lots where the bike lockers were full. They will evaluate the program and consider opportunities to expand it if successful. They are also building bike cages at stations with connections to regional trails, partnering with cities to improve bike infrastructure around park-and-rides, and promoting biking to park-and-rides as part of their Transportation Demand Program. DART provides bike racks and bike lids and are also changing the layouts of train cars to accommodate more bikes on board. DART is also working with cities and counties to improve sidewalks and bike paths.

2. **Shuttles, drop-offs and rideshare**: Independent shuttles funded by private companies and organizations are a growing niche. WMATA welcomes shuttles to the extent their facilities can accommodate them. They have seen significant growth in these independently-funded shuttles, whose sponsors include private companies, apartment buildings and large government complexes. BART supports shuttles that bring people to transit, but discourage use of parking by people who are connecting to an employer shuttle.

   Metro also supports private shuttle to the extent feasible. Metro has policies and procedures for allocating space when available at park-and-ride lots to interested private shuttle operators such as the Microsoft Connector. Metro also promotes ridesharing to park-and-rides. Metro recently developed TripPool, a new pilot program to provide on-demand rideshare options to connect riders to transit in select areas. Metro provided commuter vans make one round trip each work day to a park-and-ride or transit center. Volunteer drivers pick up and drop off registered riders along the way. TripPool trips are coordinated by riders and drivers on their smartphone through the free mobile app, iCarpool.

   Drop-offs from Transportation Network Companies (TNCs) and others are also growing in popularity, although agencies are finding that vehicle queues can cause congestion at stations and lots. DART has found that drop-offs are well used and have reduced the need for additional parking. DART's design standards provide for spaces to accommodate drop-offs. DART also subsidizes up to 50 percent of shuttle service to major employers outside of walking distance from stations. This program has been highly successful.

   Carsharing is also becoming more common at park-and-rides. DART, for example, is experimenting with making "drop off" space available for carshare vehicles. WMATA has a formal carshare program at its facilities.

Findings: Transit Parking

Transit parking is an important access mode and the majority of agencies we reviewed provide parking as a means of access to transit. Available parking can divert drivers from the region's road system and can provide opportunities for customers to use transit who may not be able to access it by other modes.

Overcrowded parking is a common problem however and park-and-rides are expensive to build and have other tradeoffs. Many agencies and cities are working to find strategies for responding to parking demand that use resources efficiently, are affordable, and are consistent with smart-growth plans adopted by cities.

Key considerations

- Transit parking is one piece of a multimodal approach to providing access to transit.
- Park-and-rides provide access to transit for people who live or beyond a reasonable walking distance or are unable to use other access modes.
- Transit agencies are pursuing strategies to make transit parking as efficient as possible, such as encouraging the most number of riders per parking space.
- Effective management strategies include pricing, shared parking, multimodal facility design, and transportation demand management.
- Parking policies and approaches should consider local characteristics and consider the cost per rider when evaluating station access options.
- Many agencies prioritize improvements that do the most to increase ridership at the lowest cost, taking into account both operating and capital expenses, land values, and the opportunity costs of foregone joint development.

Recommended Next Steps

1. Metro will work collaboratively with local jurisdictions, other agencies, private organizations and others to attempt to respond to demand for transit parking.

Steps could include but are not limited to:

a. Pursue opportunities to increase parking supply, such as leasing additional lots, sharing parking lots, or creating new parking where warranted by demand and supported by available resources.

b. More comprehensively manage our existing parking resources and maximize their benefits through an expanded parking program.

- Identify strategies to make more efficient use of existing parking; consider a range of management approaches including parking permits, parking charges, and technology such as real time parking availability signs.
- Explore opportunities to increase access to park-and-rides through other modes including active transportation, private shuttles, improved local transit and other last mile connections.

- Consider opportunities to support our vanpool and carpool customers while shifting parking demand away from the most highly used park-and-rides.
- Expand our performance management system for parking; regularly review underutilized park-and-ride lots and strive to increase their efficiency.
- Use information gathered for identified metrics and regular data collection to describe the extent and quality of public access to the Metro system and identify needs for improvement.
- Continue to work with jurisdictions to implement on- and off-street parking policies to support transit parking objectives.
- Explore opportunities to restripe park-and-rides to create more spaces.

c. Continue to pursue grant and other funding opportunities to support infrastructure and programs that increase access to transit.

d. Through Metro's long range plan, consider how many stalls would be appropriate to support a future service network and identify the types of areas where park-and-ride investment would be appropriate.

FIGURE 14: ON AND OFF-STREET PARKING STRATEGIES

On-Street Parking Strategies

Strategy	Example	Limits On-Street Overflow	Adds Parking	Supports Parking Management	Benefits	Challenges
Time Limited Zones near P&R	*Restrict parking to a maximum of 2 hours on streets - could exempt residents/business owners*	Yes	No	Partially - Keeps transit demand in the paid PnR lots	No cost to original users of on-street parking; prevents spillover	Pushback from residents or businesses if street was not originally time-restricted. Enforcement and program maintenance costs. Could be paid for by P&R permit system.
Paid Parking near P&R	*Charge $2/ hour for parking along streets near park & ride; no time limits (unless there are already time limits in place) - could exempt residents/business owners*	Yes	Maybe	Yes	Manages overall parking supply if price set appropriately; prevents spillover	Pushback from residents or businesses if street was not originally charged. Enforcement and program maintenance costs. Initial capital cost for signs and/or meters.
"Designated" Transit Parking Zones (ie. Residential Parking Zone or 'RPZ')	*Designate underutilized on-street parking (most likely in non-residential areas) to transit patrons; could include signs or just website/trip planner information*	Maybe	Yes	Yes	Expands the supply of transit parking. May be less controversial than other strategies in areas that have a lot of availability. "Free" parking that is at a less premium location than paid P&R.	Pushback from area land owners. Security concerns for people parking in the area. May not be many compatible areas in the County.
Transit User Parking Permit	*Create zones where a limited number of transit users would be permitted to park on-street. Would only apply in areas with paid parking or an RPZ.*	Yes	Maybe	Yes	Most RPZs have capacity during the midday. This program could take advantage of some of that unused capacity for transit patrons who have a different usage pattern. Similar to the commercial permits allowed in some Seattle RPZs	Additional program administration costs. Areas with RPZs are close to big job centers that may not be conducive to park-and-ride
Long-term Parking Restriction	*No vehicle may park for longer than 24 hours on a given street*	Maybe	Maybe	No	Mitigates against potential impacts from a priced park & ride program and long-term parked vehicles moving out of the PnR lots. RPZ could be used to allocate street parking to park & ride users	Constraints on number of permits per residence. Enforcement costs

Off-Street Parking Strategies						
Do not require a study of utilization rates for shared-uses parking agreements between PnRs and private lots	*Redmond does not require a study to allow shared-use parking*	N/A	Yes	Maybe - additional shared-use facilities for transit could provide additional supply for managed facilities. If these are not priced, they could "undercut" PnRs managed with pricing.	Reduces implementation costs for shared use arrangements; could be extended just for transit-sponsored shared PnR	Specific utilization rates may vary by park & ride and property use - may lead to parking spillover on occasion.
Do not require agreements to share parking	*Redmond does not require a formal agreement; shared parking done on an ad-hoc basis*	N/A	Yes	Maybe - additional shared-use facilities for transit could provide additional supply for managed facilities. If these are not priced, they could "undercut" P&Rs managed with pricing.	Reduces implementation costs; could be extended just for shared PnR	Conflicts may arise due to inadequate supply and no agreement in place; ad-hoc setup may not prove to be attractive to transit users unless there is a way to reserve a spot
Allow leasing of excess private parking if maximum demand is accommodated	*Kirkland allows, pending a study and agreement*	N/A	Yes	Maybe - leased spots may not be convienent for PnR users that are "managed out" of facilites, but this could open new markets for P&R users.	Park & Ride demand complements residential parking demand time periods; overbuilt retail lots on suburban arterials may also be good sites	Constrains the total number of spaces that can be leased by a property; unless sponsored by a transit agency, usage of leased spots may be low and price unpredictable
Offer up city-owned, underutilized parking spaces for additional P&R on high-frequency routes	*Parks, maintenance yards, some city-owned parking lots could serve as additional PnR supply. Some may need to have permits or time restrictions.*	N/A	Yes	Maybe - could provide additional supply for managed facilities. If these are not priced, they could "undercut" P&Rs managed with pricing.	Low cost way to use existing underutilized parking supply.	Ongoing program costs, may conflict with infrequent events/demand surges at lots.
Allow shared-use parking if peak hour demand time periods are different for the two uses	*Kent and Tukwila specifically allow for this, pending a study*	N/A	Yes	Maybe - additional shared-use facilities for transit could provide additional supply for managed facilities. If these are not priced, they could "undercut" P&Rs managed with pricing.	Park & Ride demand complements residential parking demand time periods	Constrains the total number of spaces that can be leased by a property
Relax the "distance" provision in the shared-use parking code	*Redmond has no maximum distance that the shared-use must be to the parking. Others range from 500-1000 feet, or unlimited with shuttle service provision.*	N/A	Yes	Maybe - additional shared-use facilities for transit could provide additional supply for managed facilities. If these are not priced, they could "undercut" P&Rs managed with pricing.	Expands the potential properties that may participate in a shared-use program	May not apply directly to off-street PnR

FIGURE 15: PARK-AND-RIDES IN KING COUNTY

Park-and-ride lots in King County *(based on Third Quarter 2015)*

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—22,957 spaces—and tend to be better used. On a system level, about 75 percent of the combined permanent and leased spaces are used each day. There are a number of lots that are heavily used—especially the larger lots served by very frequent transit routes. The list of Metro owned and maintained permanent lots is on the following page.

More than half (34) of the 64 permanent lots and 11 of the 66 leased lots are filled to 80 percent capacity or more each day. Sixteen of those lots are at least 100 percent capacity.

There are also a number of lots in King County that are not as well used or 'underutilized.' There are 56 lots in King County with less than 50 percent utilization; 15 are permanent and 41 are leased.

Metro's quarterly park-and-ride utilization reports can be found at:
http://metro.kingcounty.gov/am/accountability/park-ride-usage.html

King County Metro Leased Lot Program

Metro's Leased Park-and-Ride Lot Program is a low-cost approach to providing park-and-ride service for transit customers. Leased lots augment permanent park-and-rides to provide more parking options for transit riders. The program has grown over time, with new leased park-and-rides opening, some closing, and many continuing over the decades.

Currently 66 of the 130 park-and-ride lots in King County are leased from, or donated by, private owners. These lots have about 2,400 parking spaces— about 10 percent of King County's total park-and-ride system capacity. Metro leases and operates 62 of the 65 lots, which have about 2,200 leased spaces, and Sound Transit leases and operates three lots with about 270 leased spaces.

How it works: Metro typically leases a portion of parking lots from churches, city parks, and private facilities such as shopping centers. Property owners usually retain a portion of the lot for their own use. Leased spaces are available to transit and rideshare commuters weekdays, and may be used on a space available basis by others after the morning peak period ends (around 9 or 10 a.m.).

The cost of leasing park-and-ride lots ranges from $0 for donated lots to $15 per space per month, with most surface lots ranging from $4 to $7 per space per month. There are a few exceptions to this pricing scheme. For example, a very highly-used garage that Metro leases was recently negotiated to $30 per space per month.

Establishing new leased lots: Metro might pursue a new leased park-and-ride lot for a number of reasons: to supplement overcrowded permanent lots, to support new or modified transit service, to support existing routes not served by a permanent lot, or to respond to a request from councilmembers, cities or customers. Sometimes property owners offer parking that fits with Metro's needs.

Potential sites are evaluated using criteria that include access to a commuting corridor or existing or proposed transit route, proximity to bus stops, current or projected transit ridership, parking lot usage and condition, and safe pathways and crossings for vehicles and pedestrians. After identifying a potential property, Metro staff contacts a property owner to discuss a possible lease arrangement.

FIGURE 16: PERMANENT PARK-AND-RIDE LOTS OWNED OR MAINTAINED BY KING COUNTY

Metro-owned Park and Ride Lots - 25					
	Stalls	Location	Maitenance	No. Routes	Utilization*
Auburn	244	Auburn	KCM	2	67%
Aurora Village Transit Center	202	Shoreline	KCM	11	96%
Bear Creek	283	Redmond	KCM	6	99%
Bothell	220	Bothell	KCM	6	100%
Burien TC	488	Burien	KCM	12	65%
Duvall	49	Duvall	Duvall	2	39%
Issaquah Highlands	1010	Issaquah	KCM	9	90%
Kenmore	603	Kenmore	KCM	8	100%
Kent/Des Moines	370	Kent	KCM	7	81%
Kent/James Street	713	Kent	KCM	6	24%
Lake Meridian	172	Kent	KCM	5	19%
Northgate Transit Center	284	Seattle	KCM	16	98%
Northgate TC Extension	448	Seattle	KCM	16	99%
Ober Park	48	Vashon	KCM	2	76%
Olson Place SW/Myers Way	100	Seattle	KCM	2	73%
Overlake	203	Redmond	KCM	5	38%
Redmond	377	Redmond	KCM	9	100%
Redondo Heights	697	Federal Way	KCM	2	9%
Renton (Metropolitan Place)	150	Renton	Renton	16	95%
South Federal Way	515	Federal Way	KCM	3	28%
South Kirkland	833	Kirkland	KCM	7	89%
South Sammamish	265	Sammamish	KCM	4	41%
Tibbetts Lot	170	Issaquah	Issaquah	7	60%
Tukwila	267	Tukwila	KCM	3	98%
Valley Center	55	Vashon	KCM	2	41%
Total	***8766***				
Permanent WSDOT Park and Ride Lots Maintained by Metro (KCM) - 20					
	Stalls	Location	Owner	No. Routes	Utilization*
Brickyard Rd	443	Bothell	WSDOT	10	78%
Eastgate	1614	Bellevue	WSDOT	17	97%
Federal Way/S. 320th Street	877	Federal Way	WSDOT	3	38%
Houghton	470	Kirkland	WSDOT	7	15%
I-5/NE 65th St./Green Lake	411	Seattle	WSDOT	8	99%
Kingsgate	502	Kirkland	WSDOT	7	111%
Maple Valley	122	Maple Valley	WSDOT	2	68%
Montlake Bike Station (bike lockers)	54		WSDOT		
Newport Hills	275	Bellevue	WSDOT	9	67%
North Jackson Park	68	Shoreline	WSDOT	9	86%
North Seattle	155	Seattle	Leased	16	98%
Preston	53	Preston	WSDOT	carpool/van	58%
Shoreline	393	Shoreline	WSDOT	5	78%
South Bellevue	519	Bellevue	WSDOT	7	108%
South Renton	373	Renton	WSDOT	6	98%
Spokane/Airport	25	Seattle	WSDOT	11	72%
SW Spokane St.	55	Seattle	WSDOT	11	6%
Twin Lakes	600	Federal Way	WSDOT	4	16%
Wilburton	186	Bellevue	WSDOT	4	97%
Woodinville	438	Woodinville	WSDOT	6	58%
Total	***7633***				
**third quarter 2015*					

V. Transit-oriented development (TOD)

Transit-oriented development (TOD) can improve access to transit by encouraging and creating more pedestrian-friendly environments and spurring dense development near transit. It can increase ridership and improve access to jobs and economic opportunity through the increased transit access. TOD can reduce single occupancy vehicle trips, helping keep regional congestion and emissions in check. It can also be leveraged to increase transit parking. TOD can also play an important community role in helping establish a sense of place.

TOD and affordable housing
TOD can also create affordable housing near transit. Low income households often seek housing in areas outside of cities because it is more affordable, but that affordability is often counterbalanced by higher transportation costs. By creating affordable housing in mixed-use neighborhoods that are well-served by transit, TOD can lead to reduced housing and transportation costs.

King County's definition of transit-oriented development
A transit oriented development (TOD) is a private or public/private real estate development project that creates, expands, maintains or preserves a mixed-use community or neighborhood within walking distance of a transit center. TODs are designed to encourage transit use and pedestrian activity by increasing the density of residents, shoppers, visitors or employees per acre. They reduce transportation costs for residents and provide multiple benefits to residents within walking distance of transit. New TOD projects are often coupled with an increase in transit service to the area and frequently provide improvements to the transit operating environment.

TOD at King County

Metro's TOD program focuses on increasing ridership, urban-scale design, affordable housing and the transformation of the bus station area into a high density urban center. Metro has been involved in six major transit-oriented development projects, in Northgate, Renton, Overlake, Redmond, Burien, and South Kirkland, described in more detail on the next page.

Potential future transit expansion would provide additional opportunities for TOD in the region. Metro has an opportunity to take an active role in promoting TOD through the creation of TOD policy and strategies that help enhance access to transit. To help inform how Metro could further define and strengthen its role, this section surveys examples of TOD policies and practices.

Opportunities for redevelopment in King County

As the Puget Sound region grows and changes, the demand for park-and-rides may shift, as areas with new or increased demand emerge while other parking facilities may no longer be needed. As Metro responds to changing conditions, it can explore how transit-oriented development practices can be applied whether seeking to increase, maintain or decrease parking. TOD can provide many of the benefits of single-purpose parking lots while reducing costs, increasing ridership, or promoting the County's development goals.

A good transit oriented development location has numerous facets,[22] but some key criteria are:

• Transit access • Bike access • Walk access • Auto access • Current and forecasted transit ridership • Types of development, including feasibility of affordable housing	• Existing and planned land use • Market support • Utilities • Potential for adjacent development • Shared parking opportunities • Other evaluative measures

Regional Equitable TOD Fund (REDI) [23]

The Growing Transit Communities Partnership has developed a proposed regional TOD fund to support TOD and promote equitable development in transit communities in the Puget Sound area. The fund, known as the Regional Equitable Development Initiative (REDI) Fund will support strategic acquisition of land and buildings within walking distance of high-quality transit for development and preservation of affordable housing. It will serve as a rolling source of loans for property acquisition. A coalition of public entities in the region is working together to secure investments from local, regional and state sources to seed the fund.

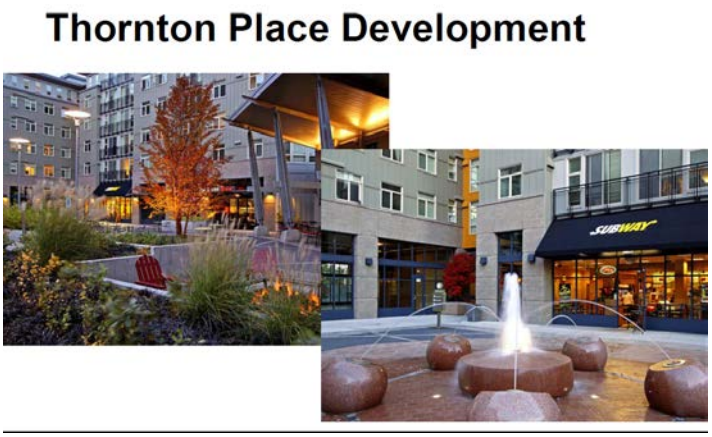
[22] For more information see the following:
Sound Transit's Federal Way Link Extension Draft EIS Summary, here:
http://www.soundtransit.org/sites/default/files/project-documents/20150511_DEIS_booklet.pdf
The National Cooperative Highway Research Program's article titled Transit-Oriented Development, here:
http://onlinepubs.trb.org/onlinepubs/tcrp/tcrp_rpt_128.pdf,
TCRP Report 128, here: http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_rrd_294.pdf,
Filling the Financing Gap for Equitable Transit-Oriented Development, here:
https://s3.amazonaws.com/KSPProd/cache/documents/679/67920.pdf
Sound Transit's Parking Management Pilot Project Report:
http://www.soundtransit.org/sites/default/files/Reso2012-24-Attachment_a.pdf
[23] See, PSRC's Summary of the Proposed REDI Fund, here:
http://www.psrc.org/assets/11577/REDIFundFramework3pager.pdf?processed=true

Transit-oriented development in King County

The following are examples of transit-oriented development projects in King County.

Thornton Place at Northgate, Seattle

Metro cooperated with the Thornton Place Development to share 350 parking spaces in this large mixed-use project. The project includes more than 300 units of market and affordable housing units, a multiplex cinema, offices and restaurants. Residents have excellent access to the adjacent transit station and have low rates of car ownership and usage. The project is the cornerstone of the redevelopment of the adjacent Northgate mall.



South Kirkland Park-and-Ride TOD

Metro's South Kirkland Park-and-Ride TOD project transformed an existing surface park-and-ride lot into a large mixed-use residential and retail community. The project proceeded in phases, with the construction of a new 530-stall garage, renovated parking lot, and a new bus loading area. Imagine Housing constructed 58 affordable housing units and Polygon NW built 183 market rate housing units with ground floor commercial uses and open spaces. This project also improves pedestrian and bicycle connections, linking the TOD to downtown Kirkland, Totem Lake, and regional bike routes to the north and east as well as to the south related to the SR 520 expansion project.

Metropolitan Place, Renton

Metropolitan Place is a transit oriented development in downtown Renton which created a mixed-use affordable housing project in downtown Renton and provided new park-and-ride capacity. The project includes 4,000 square feet of ground-level retail space and 90 apartments above a two-story garage with 240 parking stalls. It is located across from the recently expanded Renton Transit Center in downtown Renton. Some of the parking stalls are designated for shared use during non-commuter hours and certain stalls are designated for resident-only use. The developer agreed to provide one free bus pass for every apartment unit.

The Village at Overlake Station, Redmond

The Overlake Park-and-Ride TOD project in Redmond combines moderate-income rental housing, a day care facility, and a park-and-ride center. The development is located in the Overlake commercial area of Redmond which has about 600 firms, including Microsoft's main

campus. Grocery stores, restaurants, personal services and major retailers are within a short walking distance. The Village at Overlake Station includes two levels of covered parking with 536 parking stalls and 308 rental housing units affordable to households earning 60 percent of the area's median income.

This project was jointly developed by King County, the King County Housing Authority, and a private developer using tax-exempt financing and federal housing tax credits. Subsidized bus passes are provided as an incentive to take the bus and help reduce automobile congestion in the region.

Redmond Downtown Transit Center and TOD

The King County Department of Transportation, the City of Redmond, and Sound Transit jointly developed a new Redmond Downtown Transit Center with an adjacent TOD. The new transit center is located at the site of the existing bus transfer facility, while the TOD was built on Metro's Redmond Downtown Park-and-Ride Lot. The Redmond Downtown Transit Center project included improved boarding areas, passenger shelters, and lighting for bus riders.

Burien Transit Center

King County and Sound Transit partnered in the Burien Transit Center (BTC) Parking Expansion project, which is the second of three phases of the county's effort to create a sustainable transit oriented community at the Burien Transit Center. A 462-stall, multi-story parking garage was constructed with a 43-stall surface lot on the northern half of the old park-and-ride. Parking for BTC users was increased by 164 spaces (approximately 47 percent), and includes capacity for 50 level-2 electric vehicle charging stations.

By placing the Burien Transit Center's park-and-ride stalls in a multi-level garage, the remaining half of the lot is available for housing and commercial development. The location will provide future residents and employees easy access to many downtown Burien amenities and to regional transit connections via the adjacent transit center.

TOD guidelines and best practices

Many large transit agencies have TOD policies, guidelines, and best practices that can be used to systematically evaluate, facilitate, and implement TOD projects. Here are a sample of best practices from around the United States.

1. Bay Area Rapid Transit (BART), *San Francisco*

BART was one of the first agencies to adopt a TOD policy[24]. Their goals are to increase transit ridership, promote development in the station area, increase the stability of BART's finances, and reduce vehicle access mode share.

BART also has TOD guidelines[25] that emphasize the pedestrian environment around stations. The guidelines consider customer safety and convenience, land use, station access, circulation and operational efficiency.

2. Dallas Area Rapid Transit (DART), *Dallas*

DART also has both a TOD policy[26] and guidelines[27] . Their policy goals are to increase transit ridership, enhance the value of DART's real property, encourage high-quality development, and enhance the quality of life around stations.

DART's guidelines address multiple aspects: station area, land use, intensity of development, built form, civic space and public art, circulation, landscape, sustainable development, light rail facilities, bus facilities, and facility furnishings.

3. Regional Transit Authority (RTA), *Chicago*[28]

RTA recognizes that the success of its system is directly related to the ease of access by riders. They have a vision for TOD to encourage compact, mixed-use, pedestrian-oriented development at and around rail and bus stations and corridors that increases ridership, supports long-term system capacity, promotes livable communities, and generates funding for transit. TOD areas are defined as areas within a half-mile of rail stations and a quarter-mile of bus stations and corridors. Their four key goals for TOD are:

- foster relationships
- promote implementation of TOD plans
- encourage livability through walkability and multi-modal access
- promote and enhance existing assets and investments

[24] See BART's TOD Policy, at: https://www.bart.gov/sites/default/files/docs/TOD_Policy_Adopted_07-14-05.pdf

[25] See, BART's Transit-Oriented Development Guidelines, at: https://www.bart.gov/sites/default/files/docs/TOD_Guidlines.pdf

[26] See, DART's TOD Policy, here: https://www.dart.org/economicdevelopment/DARTTODPolicy2008.pdf

[27] See, DART's TOD Policy and Guidelines Website, here: https://www.dart.org/about/todpolicy.asp; and DART's TOD Guidelines Handbook, here: https://www.dart.org/economicdevelopment/DARTTODGuidelines2008.pdf

[28] See, RTA Chicago TOD Policy, here: http://www.rtachicago.com/files/documents/plansandprograms/landusetod/TOD_Policy.pdf

4. Regional Transportation District (RTD), *Denver*[29]
RTD has a strategic plan for transit-oriented development that promotes sustainability and increased ridership through compact development. RTD's goals are: promote partnerships, encourage livable communities and sustainable development with mixed-income housing that support transit, ensure hierarchy of multimodal access, and protect and enhance RTD's transit assets.

5. Washington Metropolitan Area Transit Authority (WMATA), *Washington DC*
WMATA encourages joint development of property it owns or controls in order to implement transit-oriented development and attract new riders, create revenue, and make station access improvements. The agency markets properties to office, retail/commercial, recreational/entertainment and residential developers with the following guidelines:

- Create balanced land use on station properties and nearby areas through collaboration with local jurisdictions
- Allow development that doesn't require one-to-one replacement parking
- Proactively promote shared parking arrangements

6. Sound Transit (ST), *Seattle*[30]
ST's TOD policy, adopted in 2012, includes a discussion of purpose, goals, strategies, planning, development, and operations. One of ST's strategies is to facilitate TOD. ST defines two types of TOD strategies: Agency TOD and Community TOD.

> "*Agency TOD strategies facilitate or create TOD on Sound Transit property… Sound Transit takes the lead role in identifying and implementing Agency TOD strategies*." Community TOD strategies "*support and promote TOD within the larger area around a Sound Transit facility… Sound Transit may take either a lead or a support role in identifying and implementing Community TOD strategies*."

Redevelopment opportunities

Transit-oriented development can be a valuable option for underutilized park-and-rides as well as surplus properties.

Santa Clara Valley Transportation Authority (VTA), *California*

VTA has a development program to utilize under-used park-and-rides. Its goals are:

- enhance the quality of the station environment
- improve the linkage between transit and community
- encourage transit system ridership
- generate revenue for the transit system

[29] See, RTD FasTracks' Strategic Plan for TOD, here: http://www.rtd-fastracks.com/media/uploads/main/TODStrategicPlanR.pdf
[30] See, Sound Transit's TOD Policy, here: http://www.soundtransit.org/sites/default/files/Reso2012-24-Attachment_a.pdf

Example: Ohlone-Chynoweth Station
VTA worked with Eden Housing, Inc to redevelop a 1,100 space park-and-ride at Ohlone-Chynowith Commons. This joint development created 194 units of affordable housing and other amenities for low-income residents.

Massachusetts Bay Transportation Authority (MBTA), *Massachusetts*

The Massachusetts Office of Commonwealth Development works with MBTA and local communities to use surplus MBTA property near transit stations to stimulate TOD. The purpose of this partnership is to secure federal funding for new rail and to promote TOD throughout the state. MBTA has a four-step approach for outreach, planning, development and marketing:

1) MBTA identifies surplus property for TOD
2) MBTA works with community to create TOD plan and development guidelines
3) MBTA and community collaborate and support the plan by implementing necessary zoning changes or permitting variances
4) MBTA issues RFP with guidelines (created with community involvement) for development to identify developers to purchase/lease and develop TOD sites

An important component of the process is an educational program that informs the community about the advantages and benefits of denser development and smart growth around transit.

Example: Ashmont Station at Peabody Square, Boston, Massachusetts
MBTA converted a 30,000 square-foot parking lot into a mixed-use development with retail and 100 units of affordable housing. This was a small parcel in a densely populated area where pedestrian access was important. MBTA worked with the developer, the neighborhood association and a real estate asset management company to create a plan for the best use of this property. Proceeds from the development will be used for station improvements. This popular plan attracted additional funds from the state legislature for rebuilding the station.

Findings: Transit-oriented development

Transit-oriented development can increase access to transit by promoting walkable, compact communities as well as affordable housing. TOD can also be a mechanism to increase or supplement transit parking. Transit agencies can often use opportunities to redevelop property, such as park-and-rides, to create mixed-use spaces while preserving or increasing transit parking. TOD can also be used to increase emphasis on the walk/bike environment and decrease reliance on private vehicles, if that is the community vision.

Key considerations

- Transit-oriented development can increase access to transit by promoting walkable, compact communities—as well as affordable housing. See text box to the right for more information.
- TOD can be used to increase, maintain or decrease transit parking supply, depending on the goals of the project.

- Transit agencies' typical goals for TOD include to increase ridership, promote sustainable and affordable communities, generate funding for transit, enhance transit assets, and reduce vehicle mode share.
- Transit-oriented development can be a valuable option for underutilized park-and-rides as well as surplus properties.

Recommended Next Steps

1. Transit-oriented development. Metro will seek opportunities to improve access to transit, promote walkable communities and increase affordable housing by pursuing transit-oriented development (TOD) opportunities with cities, other transit agencies and private developers.

a. Develop a framework for assessing the potential for TOD in projects to expand, maintain or surplus park-and-rides.
b. Seek partnership opportunities and pursue grants to implement TOD.
c. Identify potential TOD locations.

References

1. AECOM, Revised. (2012). *State Park-and-Ride Guide*. Florida Department of Transportation.
2. American Public Transportation Association. (2014). *APTA Standards Development Program Recommended Practice, Transit Parking 101*.
3. BART Board. (2005). *BART Transit-Oriented Development Policy*. Retrieved from: https://www.bart.gov/about/planning/policies.
4. BART Parking. (nd). Retrieved from: https://www.bart.gov/guide/parking.
5. Bort, Joseph P. (MetroCenter). (2007). *Reforming Parking Policies to Support Smart Growth, Toolbox/Handbook: Parking Best Practices & Strategies for Supporting Transit Oriented Development in the San Francisco Bay Area*. Metropolitan Transportation Commission.
6. Boston Region MPO. (nd). *Congestion Management Process (CMP) Report, Chapter 3: Performance Measures*. Boston Region Metropolitan Planning Organization. Retrieved from: http://www.ctps.org/cmp.
7. City of Bellevue. (2014). *Bellevue Transit Master Plan*. Retrieved from: http://www.bellevuewa.gov/transit-plan-documents.htm. City of Bellevue.
8. City of Seattle. (2012). *Transit Master Plan Final Summary Report*. City of Seattle Department of Transportation.
9. Dallas Area Rapid Transit (DART). (2008). *Transit-Oriented Development Policy and Guidelines*. Retrieved from: https://www.dart.org/about/todpolicy.asp
10. Dallas Area Rapid Transit. (2008). *Transit-Oriented Development (TOD) Guidelines: Promoting TOD Around DART Transit Facilities*.
11. Dallas Area Rapid Transit. (2008). *DART TOD Policy*. Retrieved from: https://www.dart.org/about/todpolicy.asp.
12. Eisen Letunic in association with Fehr & Peers and Nelson\Nygaard. (2012). *BART Bicycle Plan Modeling Access to Transit*. Bay Area Rapid Transit.
13. Federal Transit Administration. (2013). *Bicycles and Transit*. Retrieved from: http://www.fta.dot.gov/13747_14399.html. U.S. Department of Transportation.
14. King County Metro Transit. (2015). *Park-and-Ride Utilization Report Third Quarter 2015*. King County Department of Transportation.
15. King County Department of Transportation, Transit Oriented Development. (nd). Retrieved from: http://www.kingcounty.gov/transportation/kcdot/PlanningAndPolicy/RegionalTransportationPlanning/TransitOrientedDevelopment.aspx.
16. Los Angeles County Metropolitan Transportation Authority – Metro. (2014). *First Last Mile Strategic Plan & Planning Guidelines*. Southern California Association of Governments.
17. Mamun, Md Sha Al, & Lownes, Nicholas E. (2011). A Composite Index of Public Transit Accessibility. *Journal of Public Transportation*, *Vol. 14, No. 2*.
18. National Cooperative Highway Research Program. (2005). Transit-Oriented Development: Developing A Strategy to Measure Success. *Research Results Digest*. 294.
19. NC State Design. (nd). *Transit Oriented Development & Affordable Housing*. White Paper. Retrieved from: https://design.ncsu.edu/ah+sc/?page_id=114.
20. Nelson\Nygaard Consulting Associates. (2003). *Bay Area Rapid Transit: BART Station Access Guidelines.* Bay Area Rapid Transit.

21. Nelson\Nygaard Consulting Associates. (2010). *Transit Agency Parking Pricing and Management Practices*, *Peer Review*. Denver Regional Council of Governments.
22. Otak, Inc. (2013). *Hawaii Pedestrian Toolbox: A Guide for Planning, Design, Operations, and Education to Enhance Pedestrian Travel in Hawaii*. State of Hawaii, Department of Transportation.
23. Puget Sound Regional Council. (2015). *PSRC Transit Access Assessment Draft 2015 Work Plan – April 2015*. Puget Sound Regional Council.
24. Regional Transportation Authority (RTA) Board of Directors. (2010). *Transit-Oriented Development Policy*. Regional Transportation Authority.
25. Regional Transportation Authority. (2011). *Access & Parking Strategies for Transit-Oriented Development*. Regional Transportation Authority.
26. RTD FasTracks. (2006). *Strategic Plan for Transit Oriented Development*. Regional Transportation District.
27. RTD Transit Access Committee. (2008). *RTD Transit Access Guidelines*. Regional Transportation District.
28. RTD FasTracks. (2013). *Quality of Life: 2013 High Level Measures Report*. Regional Transportation District.
29. San Francisco Bay Area Rapid Transit District. (2003). *BART Transit Oriented Development Guidelines*. Bay Area Rapid Transit.
30. Pollack, Melinda & Prater, Brian. (2013). *Filling the Financing Gap for Equitable Transit-Oriented Development*. Enterprise Community Partners, Low Income Investment Fund, & Living Cities.
31. Program on Health, Equity and Sustainability. (nd). *Pedestrian Environmental Quality Index*. Retrieved from: http://www.sfhealthequity.org/elements/24-elements/tools/106-pedestrian-environmental-quality-index. San Francisco Department of Public Health.
32. Puget Sound Regional Council. (2014). *Summary of the Proposed REDI Fund*. Retrieved from: http://www.psrc.org/assets/11577/REDIFundFramework3pager.pdf?processed=true. PSRC.
33. Sound Transit Board. (2012). *Transit-Oriented Development Policy*. Retrieved from: http://www.soundtransit.org/tod. Sound Transit.
34. Sound Transit, Office of Planning and Development. (2013). *Parking Management Pilot Project, Draft Evaluation Report*. Retrieved from http://www.soundtransit.org/sites/default/files/project-documents/20150511_DEIS_booklet.pdf. Sound Transit.
35. Sound Transit. (2015). *Federal Way Link Extension, Draft EIS Summary: Route & Station Alternatives and Impacts*. Sound Transit.
36. Sprinkle Consulting Inc. (2007). Bicycle Level of Service Applied Model. Retrieved from: http://nacto.org/docs/usdg/bicylce_Level_of_service_model_sprinkle_consulting.pdf. National Association of City Transportation Officials.
37. TRA Associates and Nelson\Nygaard Consulting Associates, et al. (2007). *Transit Oriented Development Best Practices*. Greater Cleveland Regional Transit Authority.
38. TriMet. (2011). *Pedestrian Network Analysis*. Retrieved from: http://trimet.org/projects/pedestrian-network.htm. TriMet.
39. Transit Cooperative Research Program. (2012). *TCRP Report 153: Guidelines for Providing Access to Public Transportation Stations*: *Access Planning Spreadsheet Tool*. Retrieved from: http://www.trb.org/Main/Blurbs/166516.aspx. Transportation Research Board of the National Academies. Washington, D.C.

40. Transit Cooperative Research Program. (2008). *TCRP Report 128: Effects of TOD on Housing, Parking, and Travel.* Transportation Research Board of the National Academies. Washington, D.C.
41. Transit Cooperative Research Program. (2012). *TCRP Report 153: Guidelines for Providing Access to Public Transportation Stations*. Transportation Research Board of the National Academies. Washington, D.C.
42. Transit Cooperative Research Program. (2012). *TCRP Report 153: Guidelines for Providing Access to Public Transportation Stations: Appendix C: Transit Station Access Planning Tool Instructions.* Transportation Research Board of the National Academies. Washington, D.C.,
43. Transit Cooperative Research Program. (2003). *TCRP Report 100: Quality of Service Manual—2nd*. Transportation Research Board of the National Academies. Washington, D.C.
44. Transit Cooperative Research Program. (2013). *TCRP Report 165: Quality of Service Manual, Third Edition*. Transportation Research Board of the National Academies. Washington, D.C.
45. Washington Metropolitan Area Transit Authority. (2008). *Station Site and access Planning Manual.* Washington Metropolitan Area Transit Authority.
46. Webber, Robbie. (2014). *Performance Measures for Bicycle and Pedestrian Investments*. State Smart Transportation Initiative. Retrieved from: http://www.ssti.us/wp/wp-content/uploads/2014/09/Draft-bike-ped-PMs-for- PWPBPP.pdf.
47. Wilson, Richard. (2000). *Parking Management Toolkit: Strategies for Action in BART Station Areas*. Bay Area Rapid Transit.

Appendices

Appendix A: Ordinance requiring Access to Transit report

King County

KING COUNTY

Signature Report

August 19, 2013

Ordinance 17641

1200 King County Courthouse
516 Third Avenue
Seattle, WA 98104

Proposed No. 2013-0230.2 **Sponsors** Dembowski

AN ORDINANCE relating to public transportation; adopting updates to the Strategic Plan for Public Transportation 2011-2021 and King County Metro Service Guidelines; and amending Ordinance 17143, Section 4.

STATEMENT OF FACTS:

1. The King County council adopted the King County Metro Strategic Plan for Public Transportation 2011-2021 ("the strategic plan") and the King County Metro Service Guidelines ("service guidelines") in July 2011 via Ordinance 17143.

2. The regional transit task force recommended that the strategic plan and service guidelines focus on the balancing of productivity, social equity and geographic value in the distribution of transit service.

3. The strategic plan and service guidelines are meant to be living documents, setting the policy for and guiding the implementation of the Metro transit service network by responding to growth throughout the county and incorporating regular review of policies by the regional transit committee. The proposed 2013 updates of the strategic plan and service guidelines address the following concerns:

1

A. The adoption of certain system-wide service standards, policies and methodologies to determine whether proposed changes will have a discriminatory impact based on race, color or national origin or will result in a disproportionate burden on low-income populations, as required by Title VI of the Civil Rights Act of 1964 and Federal Transit Administration Circular 4702.1B;

B. Implementation of alternative services methodologies by updating of the service guidelines consistent with strategies 2.1.4 and 6.2.4 adopted by Ordinance 17386 in July 2012;

C. Revisions of the service guidelines to clarify language and policy intent to provide greater transparency; and

D. Updating the strategic plan and service guidelines to better link growth in transit service with growth and changes in communities in order to implement Ordinance 17143, Section 8.

4. Access to transit is affected by many factors such as land use and development, roadways, bikeways and pedestrian facilities, park and rides and transit connectivity. Currently, Metro evaluates and estimates access to transit through two key measures: the number of jobs and households within one-quarter mile of a transit corridor and the number of jobs and households within two miles of a park-and-ride facility. These measures, however, do not account for the quality, availability or utilization of the infrastructure that supports access to transit, in particular park-and-rides and their role in aggregating transit riders in lower and moderate density

areas. Additionally, the infrastructure is owned or operated by a diverse list of organizations, including the Washington state Department of Transportation, Sound Transit and other transit agencies, King County, individual cities, private organizations, including for-profit and not-for-profit organizations, and a variety of partnerships. As a result of the diversity of ownership, cross-organizational planning tends to focus on project-specific access to transit, leaving an opportunity for a multiagency planning initiative that addresses the broader issue of access on a system-wide basis.

BE IT ORDAINED BY THE COUNCIL OF KING COUNTY:

SECTION 1. The King County Metro Transit Strategic Plan for Public Transportation 2011-2021 is hereby updated to incorporate one new strategy, an update to strategy 2.1.2 and updates to performance measures as provided in Attachment A to this ordinance.

SECTION 2. Ordinance 17143, Section 4, is hereby amended to read as follows:

The King County Metro Service Guidelines, dated July 17, 2013, which is Attachment B to ((~~Ordinance 17143~~)) this ordinance, are hereby adopted.

SECTION 3. A.1. By December 31, 2013, the executive shall transmit to the council and the regional transit committee, for acceptance by motion, a work plan to identify potential updates to the King County Metro Transit Strategic Plan for Public Transportation 2011-2021, related to park and rides and other infrastructure supporting access to transit.

2. The executive shall convene a work group, including representation from the Puget Sound Regional Council, Washington state Department of Transportation, Sound Transit, the transit division, executive and legislative branch staff, individual cities and private-sector representatives, to develop the work plan.

3. The work plan shall include the timelines, milestones, lead agency or jurisdiction and scope to identify:

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, non-motorized 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.

4. The work plan shall be filed in the form of a paper original and electronic copy with the clerk of the council, who shall retain the original and provide an electronic copy to all councilmembers and members of the regional transit committee.

B. A report on the subjects described in subsection A.3.a. and b. of this section shall be transmitted by December 31, 2014, for consideration by the regional transit

committee and receipt of the report shall be acknowledge by the council by motion. The report shall be filed in the form of a paper original and electronic copy with the clerk of the council, who shall retain the original and provide an electronic copy to all councilmembers and members of the regional transit committee.

C. A report or reports on the subjects described in subsection A.3. c., d. and e. of this section shall be transmitted by December 31, 2015, for consideration by the regional transit committee and receipt of the report or reports shall be acknowledged by the council by motion. The report or reports shall be filed in the form of a paper original and electronic copy with the clerk of the council, who shall retain the original and provide an electronic copy to all councilmembers and members of the regional transit committee.

SECTION 4. By April 30, 2014, the executive shall transmit to the council and regional transit committee, for acknowledgement of receipt by motion, a report evaluating alternative measures for use in identifying crowded services and the related transit service investment needs. These could include capacity measures that are not based on the number of seats on the bus. The intent of this work is to consider whether alternative measures or further changes of thresholds for passengers to seats should be used to determine overcrowding. The report shall be filed in the form of a paper original and electronic copy with the clerk of the council, who shall retain the original and

provide an electronic copy to all councilmembers and members of the regional transit committee.

Ordinance 17641 was introduced on 5/6/2013 and passed by the Metropolitan King County Council on 8/19/2013, by the following vote:

Yes: 9 - Mr. Phillips, Mr. von Reichbauer, Mr. Gossett, Ms. Hague, Ms. Patterson, Ms. Lambert, Mr. Dunn, Mr. McDermott and Mr. Dembowski
No: 0
Excused: 0

KING COUNTY COUNCIL
KING COUNTY, WASHINGTON

Larry Gossett, Chair

ATTEST:

Anne Noris, Clerk of the Council

RECEIVED
2013 AUG 30 PM 3:51
KING COUNTY COUNCIL
CLERK

APPROVED this 30 day of August, 2013.

Dow Constantine, County Executive

Attachments: A. Updates to the Strategic Plan for Public Transportation, 2011-2021 dated 7-17-13, B. King County Metro Service Guidelines dated 7-17-13

Appendix B: Proposed changes to the Strategic Plan related to access to transit

Note: Changes related to the Access to Transit study are noted in red below.

Changes to Chapter 2: A Pathway to the Future

Objective 3.2: Address the growing need for transportation services and facilities throughout the county.

~~King County is expected to add more than 185,000 new jobs and more than 180,000 new residents between 2010 and 2020[31]. As the region grows and the economy recovers~~ The number of people and jobs in King County is growing, and the demand for ~~travel will~~ public transportation continues to rise. Metro will prepare for this growth by seeking opportunities to expand service, by being more efficient, and by partnering with others to maximize the travel options available. Metro will also strive to improve access to transit—the ability of people to get to transit service and to get from transit service to their final destinations using a range of modes such as walking, biking, driving and other public transportation services. Access is affected by the environment—such as surrounding land use and connectivity, by the safety and security of the surrounding street and sidewalk network, by the availability of service at the access point, and other factors. **Intended outcome: More people have access to and regularly use public transportation products and services in King County.**

Strategy 3.2.1: Expand services to accommodate the region's growing population and serve new transit markets.

Population and employment growth are creating emerging and expanding travel markets throughout King County. These markets range from expanding employment centers such as Kirkland's Totem Lake or Seattle's South Lake Union to developing residential communities throughout King County. Metro has many tactics for accommodating growth, such as starting a new route, adding peak trips, extending hours of service to include the midday or evening, or modifying a route to serve a new location.

Strategy 3.2.2: Coordinate and develop services and facilities with other providers, local jurisdictions and the private sector to create an integrated and efficient regional transportation system that takes innovative approaches to improving mobility.

Metro collaborates with other agencies and organizations to build the best possible regional public transportation network, to make it easy for people to travel between transportation services, to maximize travel options, and to achieve efficiencies by providing services that are complementary rather than duplicative. For example, when Sound Transit introduces new services, Metro explores opportunities to restructure bus routes, improve service integration, enhance service and increase efficiency. By reconfiguring, reducing or eliminating poorly performing routes, Metro can free up resources to invest in routes with greater demand and unmet service needs. Where

parallel services exist, Metro can restructure routes to create service that is more frequent, productive and reliable.

Metro also coordinates with other agencies and jurisdictions to improve the efficiency of the system through transit speed and reliability improvements. Metro works independently and in coordination with local jurisdictions to implement improvements such as traffic signal coordination, transit queue-bypass lanes, transit signal queue jumps, transit signal priority, safety improvements, and stop consolidations. Metro also supports investments that improve service, attract transit riders, and achieve land-use goals that support transit services.

Metro also coordinates with other regional and local public transportation entities and the private sector on funding, design, construction and maintenance of capital ~~projects~~ facilities ~~Metro and other agencies have collaborated on the development of facilities~~ such as transit hubs, park-and-rides and stations to optimize intermodal connections, promote efficient operation and enhance access. Metro will take innovative approaches to improving mobility.

~~**Strategy 3.2.3: Work with transit partners, WSDOT and others to manage park-and-ride capacity needs.**~~

~~Park-and-ride locations provide access to the public transportation system for people who do not live near a bus route or who want the many service options available at park-and-rides. These facilities serve as a meeting place for carpool and vanpool partners and an addition to the capacity of the state and interstate highway system. The use of park-and-rides has increased in recent years, and many lots are at or over capacity every day. Figure 7 shows park-and-ride utilization over the past five years.~~

~~Metro will work with Sound Transit, WSDOT and others to explore affordable opportunities to increase park-and-ride capacity. Tactics for responding to demand include management of existing lots, education and marketing~~

Strategy 3.2.3: Facilitate convenient and safe access to transit by all modes.

Metro will work with public and private partners to promote access to transit through all modes, including walking, bicycling, taking connecting transit or paratransit services, or driving to a pick-up/drop-off point or park-and-ride. Tactics include facility design and infrastructure investments to enhance safety, security and connectivity.

Strategy 3.2.4: Work in collaboration with transit partners, WSDOT and other public and private partners to address transit parking capacity demand through a range of approaches that use resources efficiently and enable more people to access transit.

Park-and-ride locations provide access to the public transportation system for people who do not live near a bus route or who want the many service options available at park-and-rides. These facilities serve as a meeting place for carpool and vanpool partners, and add to the capacity of the state and interstate highway system. The use of park-and-rides continues to grow, and many lots are at or over capacity every day.

Metro will work with Sound Transit, WSDOT, local cities and others to explore affordable opportunities to increase park-and-ride capacity and enhance transit access. Tactics for responding to demand include managing existing lots, maximizing occupancy of existing spaces, considering additional potential for leased lots and shared parking, and creating new parking stalls. When creating new capacity, Metro will strive to meet multiple goals that respond to parking capacity demand while also creating mixed-use, transit-supportive development.

Metro will also pursue strategies to improve first/last mile connections and improve education and marketing. Metro will explore opportunities to improve bike and pedestrian access to park-and-rides and other hubs through improved connections, internal circulation, and enhanced facilities such as secure bike storage.

Objective 3.3: Support compact, healthy communities.

Communities that are compact and friendly to pedestrians and bicycles are most easily served by transit. Such communities foster healthier, more active lifestyles while reducing auto-dependency and associated road investments. By the same token, transit service can support and encourage development that is more compact. **Intended outcome: More people regularly use public transportation products and services along corridors with compact development.**

Strategy 3.3.1: Encourage land uses, policies, and practices that promote transit-oriented development and lead to communities that have good access to transit and that transit can serve efficiently and effectively.

Metro encourages the development of transit-supportive, pedestrian-friendly communities by ~~consulting~~ working with jurisdictions and ~~serving~~ providing services to transit-oriented developments. Metro recommends strategies for jurisdictions and agencies to make communities more transit-friendly. Metro also partners with jurisdictions, other agencies and the private sector to spur transit-oriented development through redevelopment opportunities at, or adjacent to, park-and-rides, transit hubs and stations along major transit corridors.

Strategy 3.3.2: Support bicycle and pedestrian access to jobs, services, and the transit system.

Metro collaborates with local jurisdictions, transit agencies and others to enhance bike and walk connections to transit. Metro develops programs and facilities to improve bicyclists' and pedestrians' connections to transit. Metro also collaborates with public and private partners to enhance the use of bicycles for commute and non-commute purposes to help reduce drive-alone travel. Metro provides three-position bike racks on transit vehicles and is working to increase the availability of secure bicycle parking at new and existing Metro transit facilities. Metro will also explore opportunities to coordinate with local jurisdictions to address safety and security concerns and improve wayfinding measures for all populations. Metro will seek opportunities to improve nonmotorized access and facilities at park-and-rides and major transit hubs.

Changes to Chapter 3: Plan Performance Monitoring

GOAL	MEASURES
2	Population within a ¼-mile walk ~~access~~ to a transit stop ~~or 2-mile drive to a park-and-ride, reported separately~~ Number of jobs within a ¼-mile walk ~~access~~ to a transit stop ~~or 2-mile drive to a park-and-ride, reported separately~~ Number of students at universities and community colleges that are within a ¼-mile walk ~~of~~ to a transit stop Percentage of households in low-income census tracts within a ¼-mile walk ~~of~~ to a transit stop ~~or 2-mile drive to a park-and-ride, reported separately~~ Percentage of households in minority census tracts within a ¼-mile walk ~~of~~ to a transit stop ~~or 2-mile drive to a park-and-ride, reported separately~~ Population within ½ mile of stops with frequent service Number of jobs within ½ mile of stops with frequent service Households within specific ranges of distance from frequent service Average number of jobs and households accessible within 30 minutes countywide (total population, low-income population, minority population)* - *see note below* Average number of jobs and households accessible within 30 minutes from regional growth centers, manufacturing/industrial centers, and transit activity centers* - *see note below* Vanpool boardings Transit mode share by market Student and reduced-fare permits and usage Accessible bus stops Access registrants Access boardings/number of trips provided by the Community Access Transportation (CAT) program Requested Access trips compared to those provided Access applicants who undertake fixed-route travel training
3	All public transportation ridership in King County (rail, bus, Paratransit, Rideshare) Transit rides per capita Ridership in population/business centers Employees at CTR sites sharing non-drive-alone transportation modes during peak commute hours Employer-sponsored passes and usage Park-and-ride capacity and utilization (individually and systemwide); capacity and utilization of park-and-ride lots with frequent service HOV lane passenger miles Bike locker capacity and utilization (including number of locations with bike lockers)

*Note: These two metrics measure the accessibility of the county using the transit system, or what can be accessed via transit within a given time from a given location. Because buses run on schedules, trip times can vary greatly depending on the exact time the trip begins. For this reason, we compute the number of jobs and households that a person can reach from particular locations at multiple different times, averaged throughout the day. For the countywide measures, we conduct the same computations, but we choose multiple starting locations throughout the county. These results provide a picture of how many jobs the average King County resident can access via transit within 30 minutes.