



SOUND TRANSIT

RESOLUTION NO. R2007-05

A RESOLUTION of the Board of the Central Puget Sound Regional Transit Authority adopting the Sound Transit 2 Regional Transit System Plan for the Central Puget Sound, together with its related Appendices.

WHEREAS, the Central Puget Sound Regional Transit Authority, hereinafter referred to as Sound Transit, has been created for the Pierce, King, and Snohomish County region by action of their respective county councils pursuant to RCW 81.112.030; and

WHEREAS, Sound Transit is the designated provider of high-capacity transportation infrastructure and services to meet regional public transportation needs in the central Puget Sound area, and it possesses all of the powers set forth in Chapters 81.104 and 81.112 RCW, including the power to plan for and implement a high-capacity transportation system; and

WHEREAS, in 1996 the Sound Transit Board adopted and the voters of the Sound Transit district approved local funding for *Sound Move*, the first phase plan for a high-capacity transportation system in the Central Puget Sound region; and

WHEREAS, *Sound Move* included the development of Link light rail, Sounder commuter rail, ST Express bus, and the necessary supporting services and facilities; and

WHEREAS, Sound Transit has now largely completed project planning for and has built, is building, or has under design most of the first phase projects identified in *Sound Move*; and

WHEREAS, at the same time that *Sound Move* was adopted in 1996, the Sound Transit Board also adopted the Regional Transit Long-Range Vision as the agency's statement of goals, policies and strategies to guide long-range development of the regional high-capacity transportation system; and

WHEREAS, following a rigorous planning process, appropriate environmental review, development of issue papers, extensive agency and public outreach, involvement, and comment, Sound Transit updated its long-range vision by Resolution No. R2005-14 (July 7, 2005), which adopted the Regional Transit Long-Range Plan, affirming Sound Transit's commitment to a high-capacity transportation system built on a regional spine of Link light rail from Tacoma to Seattle to Everett, with a direct light-rail connection to east King County; and

WHEREAS, the July 2005 Long-Range Plan represents Sound Transit's policy and strategic guide for future development of a regional high-capacity transportation system, and it provides the basis for defining the next phase of high-capacity transportation investments for implementing the Long-Range Plan (known as "Sound Transit 2" or "ST2"); and

WHEREAS, said Long-Range Plan responded to updated local and regional transportation and land-use plans, and it identified projects and established Sound Transit's priorities for Sound Transit 2; and

WHEREAS, the environmental review process for the Long-Range Plan included expanded scoping and public involvement, preparation of a draft supplemental environmental impact statement (EIS) (December, 2004), public and agency review and comment, responses to comments, and preparation of a final supplemental EIS (June 2005), all pursuant to the State Environmental Policy Act and Sound Transit Resolution No. R7-1; and

WHEREAS, the final supplemental EIS for the Long-Range Plan built on and supplemented the 1993 EIS on the Regional Transit System Plan, addressed newly available information on existing environmental conditions, and evaluated the environmental impacts of, and potential mitigation measures for, implementing the Long-Range Plan and alternatives, including the development and implementation of Sound Transit 2; and

WHEREAS, in January 2006, the State Legislature required Sound Transit and the Regional Transportation Investment District (“RTID”) to present a joint ballot of regional investments to the voters in November, 2007; and

WHEREAS, Sound Transit and the RTID have been working together on a combined Roads & Transit ballot, conducting joint public outreach, and demonstrating the benefits of an integrated investment package; and

WHEREAS, since the time the Long-Range Plan was adopted in 2005, Sound Transit has established priorities and evaluated projects for Sound Transit 2; and

WHEREAS, the history and background of that planning process and Sound Transit's work with the public, agencies, and communities throughout the region on ST2 is summarized in various agency motions and resolutions on high-capacity transportation system planning, including Motion No. M2006-03 (January 12, 2006) and Resolution Nos. R2006-15 (July 13, 2006) and R2007-01 (January 11, 2007); and

WHEREAS, Resolution No. R2007-01 identified a Sound Transit 2 Draft Package for public outreach and for agency review and comment; and

WHEREAS, the Sound Transit 2 Draft Package was submitted to the Sound Transit Expert Review Panel, consistent with RCW 81.104.110, and to the Puget Sound Regional Council (PSRC), for a preliminary conformity review as prescribed by statute; and

WHEREAS, the Sound Transit 2 Draft Package was broadly distributed through direct mail, advertising, speakers bureaus, web-based outreach and general outreach that included five public meetings/open houses held jointly with the RTID focused on Roads & Transit; and

WHEREAS, Sound Transit received approximately 5,000 public comments and survey responses in the fall of 2006 and approximately 3,000 more in February and March 2007, and

staff provided the Board with summaries of the major themes and verbatim copies of the written comments, including a staff briefing at the Board Workshop on March 29, with an additional briefing on April 12; and

WHEREAS, the Board has taken such public and agency input into account in preparing the ST2 plan; and

WHEREAS, at a Board Workshop on March 29, 2007, the Board was briefed on proposed changes to the agency's financial policies that had been reviewed and recommended by its Finance Committee, and the Board was briefed on additional financial information developed by staff regarding federal funding assumptions and fare revenues for the ST2 plan; and

WHEREAS, based on the new financial information, which resulted in additional financial capacity for the ST2 plan, and on public comments received, at its workshop the Board developed a number of consensus changes to the ST2 Draft Package, including completing the light-rail extension south from the Fife/Port of Tacoma area all of the way to the Tacoma Dome Station, adding an extension to the light-rail line from the Lynnwood Transit Center to 164th Street/Ash Way, adding certain planning studies to assess future high-capacity transportation system expansion options, and designating the Sounder commuter-rail line in Pierce County south of the DuPont station as eligible for extension with partners outside of the Sound Transit district; and

WHEREAS, at the Board meeting on April 12, 2007, the Board reviewed a revised ST2 plan and appendices, including updated financial information reflecting the consensus package, and discussed potential amendments to said plan; and

WHEREAS, on April 12 the Board also received additional public input, a report from the Expert Review Panel with the panel's latest findings and letter report, and a report from the Sound Transit Citizen Oversight Panel, which reviewed and commented on the ST2 plan; and

WHEREAS, at the Board meeting on April 26, 2007, the Board received additional public comment on the ST2 plan and then considered and adopted more than a dozen amendments to the ST2 plan by Motion No. M2007-46; and

WHEREAS, Motion No. M2007-46 also authorized the Chief Executive Officer to revise and finalize the ST2 plan documents consistent with the Board's amendments, to submit the final package of transportation investment identified in the revised ST2 plan to the Puget Sound Regional Council for the conformity review required by state law, and to prepare this Resolution for the Board's final adoption of the ST2 plan; and

WHEREAS, the Chief Executive Officer and staff have revised and prepared a final ST2 plan consistent with such Board directions and amendments, and have updated the plan documents to reflect the Board's decisions, including updated project lists, plan text, financial information, maps and appendices, and that package is ready for final adoption as the ST2 Regional Transit System Plan (or "ST2 Plan"); and

WHEREAS, on May 24, 2007, the Puget Sound Regional Council completed its review of the ST2 Plan and determined that the plan "conforms" to the region's adopted long-range transportation plan, *Destination 2030* and VISION 2020; and

WHEREAS, the selection of ST2 projects and the development of the ST2 Plan has been informed by the 2005 supplemental EIS, the 1993 EIS, other relevant environmental documents and the other planning and technical analyses provided to the Board, including detailed project templates for each individual project in the ST2 Plan; and

WHEREAS, the ST2 Plan is based on, and is consistent with, the agency's adopted Regional Transit Long-Range Plan, and the ST2 Plan elements and projects fall within the range of alternatives and impacts reviewed in the 2005 supplemental EIS and other relevant environmental documents; and

WHEREAS, specific projects contained in the ST2 Plan will receive appropriate project-level environmental review following voter approval but prior to commitments for construction; and

WHEREAS, after considering the environmental review described herein, all of the public and agency comments received, input from the Expert Review Panel, the Citizen Oversight Panel, and from local jurisdictions and other governmental agencies, and the recommendations of the Sound Transit Finance and Executive Committees, the Sound Transit Board has determined that it is in the best interests of the citizens of the region to adopt the ST2 Regional Transit System Plan as substantially contained in Exhibit A attached hereto, including Appendices A – D.

NOW, THEREFORE, BE IT RESOLVED by the Board of the Central Puget Sound Regional Transit Authority as follows:

Section 1. The Board hereby adopts the Sound Transit 2 Regional Transit System Plan for Central Puget Sound substantially as contained in Exhibit A attached hereto, together with its related Appendices A – D (the ST2 Plan).

Section 2. The amended Financial Policies contained in Appendix B of the ST2 Plan will take effect upon the earlier of either the approval of local funding by the voters at an election,

currently scheduled for November 2007, or upon Board adoption of these amended Financial Policies by separate Resolution.

Section 3. The Board hereby identifies this ST2 Plan as Sound Transit's high-capacity transportation system plan, pursuant to the requirements of the state high-capacity transportation systems act, Chapter 81.104 RCW, and Sound Transit's enabling legislation, Chapter 81.112 RCW.

Section 4. The Board directs staff to make any final technical refinements to the ST2 Plan deemed necessary by the Chief Executive Officer to conform the plan to the Board's decision herein—including updating financial information and adding photos, charts and graphics to improve readability.

Section 5. The Board directs the Chief Executive Officer and staff to take any further actions necessary to implement the policies and determinations of the Board pursuant to this Resolution.

ADOPTED by not less than a 2/3 majority vote of the Board of the Central Puget Sound Regional Transit Authority as a major decision of the Board at a regular meeting thereof held on May 24, 2007.

John W. Ladenburg
Board Chair

ATTEST:

Carol A. Doering
Acting Board Administrator

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Making Connections

**Sound Transit 2
The Regional Transit System Plan
For Central Puget Sound**

Sound Transit 2

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Introduction

Sound Transit proposes to expand the regional mass transit system. The agency has been working since 1996 on the first phase of a regional mass transit system in the central Puget Sound region that includes Link light rail, Sounder commuter trains and ST Express buses. This initial phase, called *Sound Move*, was approved by voters in 1996 in response to burgeoning growth and traffic problems.

Sounder commuter trains currently operate in a 74-mile corridor from Everett to Tacoma, with an 8-mile extension to Lakewood underway. ST Express buses operate on every major highway in the region. Link light rail serves downtown Tacoma, and it will open for service between Seattle and Sea-Tac International Airport in 2009. Together, these services carry more than 12 million riders a year reliably around the region to jobs, shopping, school, sporting events and other places they need to go.

Final design for the Link light rail extension between downtown Seattle and the University District is underway, and service is planned to start in 2016.

Even with those investments, however, improving transportation continues to be one of the biggest challenges facing this region.

Another 1 million people are expected to call this region home in the next 25 years. That's about a 30 percent increase in population and is more than the current combined populations of Seattle, Bellevue, Everett, and Tacoma. Put another way, the population of the central Puget Sound region is growing by almost 45,000 people per year.

By the year 2030, growth will lead to a 35 percent increase in employment and a 30 percent increase in vehicle travel in the region. By 2030, the typical commuter could spend nearly an entire work week of additional time stuck in traffic. Weekday rush hour could last from breakfast through dinner, strangling the movement of traffic and freight, jeopardizing our economy, and hurting the environment.

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With a strong mass transit foundation in place and more growth on the way, additional investment is needed to ensure mobility for citizens and to help the central Puget Sound region's transportation system run smoothly. An expanded mass transit system that builds on what we have is more important than ever.

In response, Sound Transit is proposing a plan that builds on the *Sound Move* program called Sound Transit 2. The Sound Transit 2 plan (ST2) would expand the existing light rail system to serve three major travel corridors. Link light rail would extend from North Seattle into Snohomish County; across Lake Washington into East King County; and south of Sea-Tac Airport into Pierce County. ST2 would also

improve the Sounder commuter rail system and enhance ST Express regional bus service. A map of the ST2 Regional Transit System Plan can be found at p. ____.

Sound Move achievements

- Nearly 16 miles of new light rail from downtown Seattle to Sea-Tac Airport will open in 2009
- Light rail extension to UW will open in 2016
- Investing more than \$800 million in transit centers, HOV direct access ramps and park-and-rides
- 74 miles of Sounder commuter rail with 9 stations
- Tacoma Link light rail connects Tacoma Dome Station to downtown Tacoma
- 19 new ST Express bus routes offer all-day two-way service
- 13,000 new park-and-ride spots with 10,000 already in service
- PugetPass easy transfer fare system

The ST2 plan was developed through an open public process over a three-year period. During that period, Sound Transit coordinated closely with cities and counties and conducted substantial public outreach. With more jobs and people on the way, the time is now to continue building our transportation future.

ST2: The Future

ST2 includes a major expansion of the Link light rail line. Light rail is currently operating in downtown Tacoma and a nearly 16-mile line is under construction between downtown Seattle and Sea-Tac Airport. That line is scheduled to open in 2009, with an extension from downtown Seattle to the University of Washington next up for construction.

The ST2 plan builds on these Link light rail lines and the region's investment in Sounder commuter rail and ST Express bus service. ST2 proposes a future in which you can ride a light rail train to your job or appointment from the Overlake Transit Center area of Redmond west to Bellevue or to downtown Seattle; from downtown Seattle to the University of Washington and then north all the way to 164th/Ash Way; or from downtown Seattle to Sea-Tac Airport and then south to the Tacoma Dome Station where it would connect with the existing Tacoma Link light rail line, Sounder commuter trains and local, regional and private buses. The ST2 plan would extend the rail system to serve approximately 70 percent of the region's current population and employment centers, providing a reliable transportation option for most of the region's citizens.

Because it runs on its own tracks separated from traffic, light rail is quick and reliable. It will take approximately 20 minutes to travel on a light rail train from downtown Bellevue to the International District Station and nearby Qwest Field, 35 minutes from 164th/Ash Way to downtown

Seattle, 37 minutes from the Sea-Tac Airport to the Tacoma Dome Station and about 70 minutes from the Tacoma Dome Station to downtown Seattle. And

ST2 at a glance

- Adds approximately 49.5 miles of new light rail
- Adds approximately 25 new light rail stations
- Runs light rail service up to 20 hours a day
- Adds approximately 11,000 new park-and-ride stalls
- Adds parking for Sounder commuter rail
- Adds a new streetcar line in Seattle
- Forecasts about 300,000 riders a day on Link light rail in 2030

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because trains are not stuck in traffic, you can count on your ride being the same every day – rain or shine. With trains running up to 20 hours a day, and every few minutes at peak times, you won't need to memorize a schedule.

A fully implemented ST2 plan will also enhance and expand the current Sounder commuter train and ST Express bus services. The ST2 plan will improve access to the regional system by adding approximately 11,000 new park-and-ride stalls; six new or improved Sounder commuter rail stations; and a streetcar line connecting Capitol Hill and First Hill to downtown Seattle and the light rail and commuter rail systems.

When all proposed ST2 projects are completed, half of all work trips to downtown Seattle are expected to be on transit. The number of people taking transit to work during peak commuting hours will increase in other major regional centers as well, including Tacoma, Bellevue, Edmonds, Everett, Lynnwood, Bothell, Tukwila, SeaTac and Federal Way. Together these investments will enable more people to get around reliably and predictably. With ST2 in place, Sound Transit ridership is projected to grow to over 100 million per year in 2030. The system will also have additional capacity to absorb future growth well beyond 2030.

The ST2 system plan will build \$10.84 billion (2006\$) in new mass transit infrastructure around the region. In addition to these capital improvements, the plan provides funding for operating and maintaining the system. Operations and maintenance costs are estimated at \$1.55 billion (2006\$) through 2027. The financial plan also funds reserves and debt service – for detailed information see the “Paying for the System Section” later in this document at p. 22.

The ST2 plan is consistent with established long range regional transportation and land use plans. The Puget Sound Regional Council (PSRC) created the Vision 2020 plan to be a strategy for directing growth in an environmentally responsible way, while fostering economic development and providing efficient transportation. In addition, the PSRC created the Destination 2030 plan to be the region's comprehensive long-range transportation plan. Grounded in Vision 2020's growth management and transportation

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policies, Destination 2030 provides a multimodal plan for investing in roads, ferries, transit and freight traffic through the year 2030.

As the Regional Transit Authority (under Chapters 81.104 and 81.112 RCW), Sound Transit is responsible for regional high-capacity transit system planning in the context of Destination 2030. Sound Transit updated its Regional Transit Long-Range Plan in 2005. Sound Transit has now addressed the next generation of transit improvements by proposing ST2, the logical step forward for mass transit in the central Puget Sound region.

While Sound Transit was developing the ST2 plan, the Regional Transportation Investment District (RTID) was developing a proposal to address regional road and highway needs consistent with Destination 2030. The RTID projects build upon the state's investments in the central Puget Sound region's highway system.

Sound Transit and RTID have joined together to create the region's first comprehensive proposal for reducing freeway congestion, increasing safety, and adding mobility options and capacity by improving mass transit. ST2 is the transit piece. The roads part is called "Blueprint for Progress." The ST2 and RTID investments are being presented to the region's voters as a broad-based Roads & Transit package in November 2007.

The ST2 Plan

ST2 will substantially expand the regional mass transit system by extending and adding more light rail lines and improving commuter rail and express bus service. That new service will enhance and add high-capacity transit in the region's main travel corridors. The result will be fast, reliable service that cuts through congestion and provides ridership capacity sufficient to accommodate the region's needs.

Light Rail Extensions in ST2

ST2 proposes to add approximately 49.5 miles of new light rail by expanding light rail north from the University of Washington through Lynnwood to 164th/Ash Way, south from Sea-Tac Airport through Federal Way to the Tacoma Dome Station, and east from Seattle through Bellevue to the Overlake Transit Center. Light rail trains will provide service to 25 planned new stations up to 20 hours a day and every few minutes during peak commuting periods.

In addition, funding is established in ST2 for further planning, preliminary engineering, environmental review and right-of-way preservation on a "high-priority" light rail extension from the Overlake Transit Center to downtown Redmond. This extension will be built if sufficient additional funding and/or cost savings are identified during the ST2 program.

South Corridor – SeaTac to Tacoma

ST2 adds a light rail extension from Sea-Tac Airport to the Tacoma Dome Station, including seven planned new stations serving SeaTac, Des Moines, Kent, Federal Way, Fife and Tacoma.

East Corridor—Seattle to Redmond

ST2 expands light rail from downtown Seattle to Mercer Island, downtown Bellevue, and the Overlake Transit Center with nine planned new stations serving Mercer Island, South Bellevue, downtown Bellevue, Bel-Red and Overlake areas.

In addition, funding is established in ST2 for further planning, preliminary engineering, environmental review and strategic advance right-of-way acquisition on a “high-priority” extension from the Overlake Transit Center to downtown Redmond. This high-priority extension will be built if sufficient additional funding and/or cost savings are identified during the ST2 program. Sound Transit also proposes to employ a strategic advance right-of-way acquisition program in this corridor to ensure that properties, which are under threat of development that is inconsistent with project implementation, are purchased early. This will allow the agency to pay property owners fair and reasonable compensation as required by state law, to provide more certainty to property owners, and to avoid the complications and additional financial expense of acquiring property that has been recently redeveloped.

North Corridor—University Of Washington to 164th/Ash Way

ST2 expands light rail north from the University of Washington to 164th/Ash Way, adding nine planned new stations serving densely populated communities in University District, Roosevelt, Northgate, Jackson Park, Shoreline, Mountlake Terrace, Lynnwood, Alderwood, and 164th/Ash Way.

Additionally, as discussed more fully in the “Planning for the Future” section on p. 13, Sound Transit will study a potential future Link light rail extension from 164th/Ash Way to Everett.

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ST2 also adds a new streetcar line connecting downtown Seattle, First Hill, the future Capitol Hill light rail station, and north Capitol Hill at Aloha Street. The new streetcar line will also provide convenient, reliable access to the Sounder commuter rail system.

Sounder Commuter Rail Improvements

On the Lakewood-Tacoma-Seattle line, the ST2 plan includes an improved, expanded and permanent Sounder station in Tukwila with up to 400 parking stalls. The plan also includes adding new parking for Sounder commuter rail and bus riders at the Auburn, Sumner and Puyallup stations. Sound Transit will also consider adding a new (provisional) station and parking facility in the north Sumner area if substantial funding is provided by another public agency and/or private entity.

The ST2 plan provides for track improvements on existing Tacoma Rail and Sounder lines.

On the Everett to Seattle line, ST2 includes the construction of a permanent Edmonds Station with expanded parking for Sounder riders in conjunction with the Washington State Ferries' Edmonds Crossing multimodal terminal project. In addition, parking for Sounder riders will be expanded in partnership with the Washington State Ferries' Mukilteo Landing multimodal terminal project.

Consistent with Sound Transit's policies about extending services outside its district boundaries, Sound Transit will consider extending Sounder service south of Lakewood to a new station in Dupont and into Thurston County either through a funding agreement with a third party or through annexation of new areas into the Sound Transit district.

ST Express Improvements

ST2 adds new park-and-ride stalls in the region. The ST2 plan improves access to the I-405 bus rapid transit corridor with a new parking garage at Renton and a new transit

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center with parking in Bothell. It also provides funding for expanded parking at an improved transit center in downtown Burien.

ST Express services will continue operating as the ST2 program is implemented and ridership is anticipated to increase over time. A Service Enhancement Fund will provide for the expansion or enhancement of ST Express services. The Service Enhancement Fund (SEF) will provide additional operating funds for ST Express bus service. The SEF will increase ST Express service above *Sound Move* levels by an additional 77,000 to 96,000 annual service hours by the end of the ST2 implementation period. These funds will be administered through Sound Transit's annual service implementation planning process where the Sound Transit Board modifies specific services based on service performance and community input. Funds are also set aside to purchase additional new buses to expand the existing bus fleet. The fund allows Sound Transit the flexibility to meet the demand for additional service on ST Express routes with buses available to add trips or extend hours of service. Similarly, funds are set aside to expand bus maintenance base capacity.

Sound Move included high-occupancy vehicle access (HOV) projects that make it easier for buses to merge into freeway HOV lanes. No new such projects are included in ST2's planned set of projects. Sound Transit continues to assume that the Washington State Department of Transportation will fund and complete construction of the core HOV lane system in accordance with its freeway HOV policy.

Using the System

Sound Transit has used its research & technology and fares programs to find ways of making transit more convenient and easier to use.

For example, Sound Transit is installing vehicle location systems at its Link light rail and Sounder commuter rail stations and at some ST Express transit centers. These systems send real time electronic messages to signs that tell customers when the next train or bus

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will arrive. These electronic message signs will be in place in 2009 when the Link light rail system opens.

A decade ago, transferring between transit systems in the region required customers to have several passes or to pay a separate fare on each system. Over the last 10 years, Sound Transit has partnered with local transit agencies to create an integrated fare system that allows riders to transfer easily between transit systems. In 1999, a new regional “PugetPass” was created for Sounder trains and ST Express, Community Transit, Everett Transit, Pierce Transit, and King County Metro buses. Those agencies – and the Washington State Ferries and Kitsap Transit – are working together to implement new “smart card” technology in 2008 that will make it even easier to travel around the region.

As part of ST2, Sound Transit will continue to explore and apply innovative technology and fare initiatives. Potential initiatives include expanding the “next bus” and “next train” electronic messaging system and installing more transit signal priority equipment to speed buses through congested intersections. Other possibilities include providing bus schedules and real-time “next bus” information on cell phones or personal handheld devices. Ticket vending machines at more locations would make it easier to buy a ticket or reload your smart card. WIFI could be expanded to more Sound Transit vehicles and facilities and electronic transit information kiosks could be installed in more places to provide more information to customers.

Planning for the Future

ST2 includes funds to study potential future system expansion options, including a Link light rail extension in the north from 164th/Ash Way to Everett. A corridor planning study will evaluate potential routes and station locations. Capital and operating costs will be estimated and preliminary ridership forecasts prepared. The corridor planning study, which includes public and agency outreach, will help narrow the range of alignment alternatives and inform local comprehensive planning.

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ST2 also includes funds for a planning study in the SR 520 corridor between the University of Washington and Redmond, and one in the I-90 corridor between South Bellevue and Issaquah. These corridor planning studies will evaluate potential technologies, routes, station locations and maintenance facilities. The studies will include developing conceptual cost estimates, a preliminary ridership forecast and an analysis of potential environmental issues. The studies will also include input from citizens and businesses that may be affected by future corridor improvements.

ST2 also includes funds for a planning study to evaluate Link light rail routes and stations in the University District - Ballard - downtown Seattle corridor and in the Renton - Tukwila - SeaTac - Burien corridor. A planning study would also evaluate Link light rail routes and terminals in the downtown Seattle – West Seattle - Burien corridor for the purpose of potentially updating the Regional Transit Long-Range Plan.

These corridor planning studies will help narrow the range of alternatives, inform local comprehensive planning and position the Sound Transit Board to evaluate options for a future phase of high-capacity transit investments in the region.

In addition, the ST2 plan includes funds to study bus rapid transit (BRT) in the I-405 corridor. This will include reviewing and coordinating current service in the corridor being implemented by Sound Transit and other transportation agencies, reviewing planned projects and services, exploring opportunities to enhance the BRT system and identifying potential improvements to consider in a future phase of high-capacity transit investments in the region.

Finally, Sound Transit will conduct a planning study to evaluate the potential for high-capacity transit (HCT) technology on the Burlington Northern Santa Fe (BNSF) Railroad right-of-way, which is currently in private ownership. The study would evaluate the BNSF corridor between Renton and Woodinville and between Woodinville and Snohomish, including examining opportunities for integration with a proposed bicycle/pedestrian trail, for consideration as part of a future phase of high-capacity transit investments for the region. The study will include developing conceptual costs,

ridership, potential station locations, examination of the compatibility of different HCT modes with neighborhoods and jurisdictions along the corridor, and integration with existing and planned high-capacity transit. The study will be implemented concurrent with planning for a bicycle/pedestrian trail on the BNSF right-of-way to ensure compatibility of the trail with future HCT. Sound Transit will seek to partner with adjacent jurisdictions and other appropriate agencies in conducting this study. Sound Transit may also employ a strategic advance right-of-way acquisition program in this corridor if additional funding, cost savings or partnerships are identified during the ST2 program, provided such expenditures do not reduce funding available for the high-priority extension to downtown Redmond such that construction of this segment would be delayed.

Putting the System in Place

Implementing the Plan in Stages

Implementation of ST2 will begin the day after voters approve funding for the expanded regional transit system. Individual projects will be brought into service after they proceed through planning, environmental review, preliminary engineering, property acquisition, final design, construction, and start-up/testing programs. Transit centers, parking garages and commuter rail stations typically take 5 to 6 years from planning through start-up. Light rail extensions are more complex because they travel through multiple jurisdictions, along freeway corridors or across waterways. Light rail extensions typically take approximately 4 to 7 years for planning, environmental review, engineering and final design. They then require about 4 to 6 years to build, depending on their length and complexity. While putting each component of ST2 in place, Sound Transit will use a variety of proven analytical, project management and review techniques to make sure that the system provides the greatest regional benefits.

As previously mentioned, the downtown Seattle to University of Washington Link light rail segment is planned to open in 2016. Two years later, the ST2 plan anticipates opening the University of Washington to Northgate segment and the First Hill streetcar.

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Sound Transit also plans to open Sounder commuter rail parking garages in Sumner, Puyallup, Mukilteo, Tukwila, and Edmonds by 2018. Additionally, a parking garage is expected to open at the Burien Transit Center.

By 2021, two additional Link light rail segments are planned to be in operation, one from Seattle to downtown Bellevue and the other from Sea-Tac Airport to the Des Moines/Kent area. Sounder parking improvements in Auburn, Sounder track and structure upgrades in Tacoma, and the transit center and/or parking improvements in Bothell and Renton are also expected to be in service.

All the remaining Link light rail segments are planned to be complete by 2027. These include segments from Northgate to 164th/Ash Way, from Kent/Des Moines to Tacoma Dome Station, and from Bellevue to the Overlake Transit Center.

Within one year following voter approval of the ballot measure, staff would develop and submit to the Board a plan for the timing of the planning studies identified in ST2.

The Sound Transit Board will evaluate the prioritization, sequencing and actual timing of construction and service start-up of all ST2 projects. This would include ongoing consideration of factors affecting project readiness. The Board may modify project timing as appropriate, in response to the anticipated evolution of project readiness over the ST2 implementation period, and the necessity of coordinating ST2 construction with that of regional highway projects occurring in the same corridors. Some ST2 projects are located in close proximity to Regional Transportation Investment District (RTID) and Washington State Department of Transportation (WSDOT) projects. To the extent practicable, Sound Transit will coordinate design of its projects with WSDOT, and Sound Transit will work to phase construction of each project to mitigate the overall construction impacts. As ST2 light rail projects are planned and designed, consideration will be given to possible future system expansion options to facilitate future extensions. For example, East Corridor extensions to Issaquah and Kirkland should be considered at the conceptual engineering level during the East Link project planning process.

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If the costs of the ST2 program are lower than anticipated and/or additional funding is available, the high-priority extension of Link light rail to downtown Redmond will be constructed late in the ST2 plan implementation period.

Throughout ST2, Sound Transit's transit-oriented development program will strive for pedestrian-friendly development around stations and related facilities. The development should enhance communities, increase pedestrian activity and ridership and spur additional transit-oriented development. Sound Transit will also seek public-private partnerships, especially those that include or promote transit-oriented development as a feature of transit stations. Even where a partnership cannot be achieved Sound Transit will, to the extent practicable, facilitate transit-oriented development opportunities in and around its stations.

As Sound Transit evaluates potential locations for rail stations and other facilities, consideration will be given to whether there are transit-oriented development opportunities at each potential station location that facilitate increased ridership. Sound Transit will also evaluate the extent to which local jurisdictions are encouraging and supporting transit-oriented development.

Approximately midpoint in the ST2 program implementation, Sound Transit will evaluate what additional projects might be funded through a new voter-approved ballot measure. Sound Transit staff will prepare an evaluation of further system expansion and submit it for Board consideration. This evaluation will at a minimum:

- Determine whether ST2 program implementation is on course as planned;
- Analyze the results of the planning studies to draw conclusions on the; appropriateness of pursuing additional corridor development;
- Recommend corridors for additional HCT development; and
- Assess the potential tools available and/or necessary to develop financing strategies for such corridor development (such as federal or state grants, additional revenue authority, extension of existing revenues, other funding partnerships), along with associated risks and opportunities.

Bus-Rail Service Integration

Buses are an integral part of the light rail expansion in ST2. Sound Transit is working closely with its transit partners – Everett Transit, Community Transit, King County Metro and Pierce Transit – to develop a coordinated bus-rail network that fully utilizes the unique qualities and strengths of both transit modes. By coordinating bus-rail service planning and by designing stations for efficient intermodal connections, the light rail expansion proposed in ST2 can strengthen existing bus systems and achieve region-wide mobility benefits that extend far beyond the light rail alignment.

Providing Link light rail service in high-traffic areas allows buses to avoid congested segments of the roadway system, improving transit's on-time performance and efficiency. Convenient bus connections to light rail stations would extend the geographic reach of Link light rail far beyond the immediate station areas, providing additional transit connections and expanded neighborhood transit coverage. Since some bus service that operates parallel to light rail would no longer be needed, the savings in bus service hours could be redeployed to increase bus service elsewhere.

A Community Effort

Citizens played a key role in shaping Sound Transit's Long-Range Plan and ST2, and citizens will play an even greater role in ST2's implementation.

Sound Transit will continue its open public involvement process with many opportunities to inform and involve the community.

The Sound Transit District

The Sound Transit District is more than 1,000 square miles and serves a population of about 2.86 million people. There are currently 52 cities in the Sound Transit District, which includes most of the urban areas of King, Pierce and Snohomish counties.

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Sound Transit is governed by an 18-member board made up of local elected officials including mayors, city councilmembers, county executives and county councilmembers from within the Sound Transit District, plus the state Department of Transportation secretary.

Annexations

After voters within the district boundaries have approved a ballot proposition authorizing local taxes to support implementation phases of the ST2 plan, the Sound Transit Board may approve resolutions calling for elections to annex areas outside, but adjacent to, the Sound Transit District.

The legal requirements to annex areas into the Sound Transit District include the following:

The Sound Transit Board may call for annexation elections after consulting with any affected transit agencies and with the approval of the legislative authority of the city or town (if the area is incorporated) or with the approval of the area's county council (if it is unincorporated).

Citizens in areas to be annexed are permitted to vote on annexation and imposition of taxes at rates already imposed within the Sound Transit District boundaries.

If the Sound Transit District changes, a change in the make-up of the Sound Transit Board membership may be required. Board membership must be "representative" of the proportion of the population from each county that falls within the Sound Transit District.

Extending Service Outside Sound Transit Boundaries

Sound Transit will extend new services beyond its boundaries to make connections to significant regional destinations contingent on agreements with the affected local transit agency and local government agencies. Such service extensions would be implemented at a mutually agreeable cost.

This option would permit areas outside of the Sound Transit district to function as part of the regional system. Extending Sound Transit services outside of its district would

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require agreements with the affected local transit agency or other appropriate government agencies.

Sound Transit will enter into agreements with agencies beyond the district boundary to integrate fares. This will allow flexible transfers between various transit operators and prevent citizens who live outside the district from being penalized for making regional trips by transit instead of an automobile.

Regional Transit Boundaries District



Paying for the System

Financial Plan Framework

State law provides the basis for funding regional transit investment through authorization of voter-approved taxes and bonding. The ST2 plan will be funded by a combination of existing local taxes (four tenths of one percent sales and use tax, three tenths of one percent motor vehicle excise tax), new voter approved local taxes (an additional five tenths of one percent sales and use tax), federal grants and fares. Sound Transit will issue bonds backed by local tax collections within the Sound Transit district to help implement the ST2 plan.

Funding

The proposed plan is built on the following funding elements (all dollar values in 2006\$):

Sound Move Taxes: The plan will use revenue generated from the agency's existing *Sound Move* taxes (four tenths of one percent sales and use tax and three tenths of one percent motor-vehicle excise tax), grants, fares, and other miscellaneous sources. The revenue generated by *Sound Move* taxes available to be applied to the ST2 program is estimated to be \$2.03 billion.

ST2 Sales & Use Tax: The plan will seek voter approval to raise the local sales and use tax an additional five tenths of one percent. Revenue from the 0.5% sales and use tax increase is estimated to generate \$7.41 billion.

Federal support: The ST2 plan assumes an additional \$590 million in federal grants to build out the system, supplementing local resources. These federal grants for capital programs include Federal Transit Administration formula grants and full funding grant agreements. No state or local grants are assumed for implementing the ST2 Plan.

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Bonding: Because transit facilities provide benefits over a long span of time, it is reasonable to finance a portion of their construction over a period that extends well beyond the construction timeframe. Sound Transit's debt financing capacity will be calculated by evaluating all revenues and deducting total operating expenses for net revenues available for debt service. The Sound Transit Board recognizes that its future bondholders will hold first claim against taxes pledged as repayment for outstanding bonds. The ST2 plan includes an estimated \$3.90 billion in bond financing from 2008-2027.

Fares: Sound Transit currently collects fare revenues from passengers using the system. As the ST2 system is built out, the agency will continue to collect fares and other operating revenue. The ST2 related fares and other operating revenues are estimated to be \$182 million from 2008-2027.

Estimated Costs

The ST2 plan will fund an estimated \$10.84 billion in capital investments to improve the regional high-capacity transportation system – Link light rail, Sounder commuter rail, ST Express bus service. The capital costs and other associated costs (all in 2006\$) that would be incurred from 2008 through 2027 are as follows:

Sounder Commuter Rail: \$235 million for stations and improvements.

ST Express: \$358 million for expanded park-and-rides, transit centers and service enhancements.

Link Light Rail: \$10.24 billion for approximately 49.5 miles of light rail to extend service to 164th/Ash Way, Overlake Transit Center, and the Tacoma Dome Station. The light rail cost estimate includes the First Hill Streetcar and multiple planning studies.

Transit Operations: \$563 million through 2027. Transit operations include the new service being provided under the ST2 plan, as well as the service enhancement fund for

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Sound Move project services. The ST2 plan funds transit operations indefinitely. The costs estimated here are for the first 20 years of ST2 transit operations.

System-wide Activities: \$983 million through 2027. ST2 will fund system-wide expenditures, including the agency's research & technology and fares programs, future phase planning, administration and other expenditures that are necessary to maintain and plan for regional transit consistent with the voter-approved system plan. The \$983 million in system-wide activities reflects costs through 2027.

Debt Service: \$986 million through 2027. In order to finance the plan, the ST2 plan anticipates the issuance of 30-year bonds as necessary to maximize the financial capacity required to complete the plan. The \$986 million in debt service reflects costs for 2008-2027 for bonds issued for ST2 projects. Debt service will continue until the final bonds are retired, which is anticipated to be up to 30 years beyond the ST2 implementation period.

Reserves: \$745 million through 2027. The plan funds estimated bond reserves and a two month Operations & Maintenance reserve. The \$745 million in reserves reflects costs through 2027.

The capital cost estimates for the ST2 plan were developed using standard cost estimating techniques common in the transit industry and recommended by the Federal Transit Administration. They also reflect Sound Transit's experience in designing and building comparable facilities in the central Puget Sound region. Sound Transit's cost estimating methods were reviewed by an independent Expert Review Panel that was appointed by the State of Washington. Table 1 summarizes the estimated cost of building out the ST2 system and operating and maintaining all of the services contained in the ST2 plan.

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Table 1: Uses of Funds (all figures in millions of 2006\$)

Sounder Commuter Rail	\$ 235
ST Express	\$ 358
<u>Link Light Rail</u>	<u>\$ 10,243</u>
<i>Total Capital Program</i>	<i>\$ 10,836</i>
Transit Operations	\$ 563
<u>System-wide Activities</u>	<u>\$ 983</u>
<i>Total O&M</i>	<i>\$ 1,545</i>
Debt Service	\$ 986
<u>Reserves</u>	<u>\$ 745</u>
<i>Total Other</i>	<i>\$ 1,731</i>
Total Uses *	\$14,112

Table 2 summarizes the revenues that are anticipated to be used to pay for the ST2 system plan.

Table 2: Sources of Funds (all figures in millions of 2006\$)

ST2 Sales & Use Tax	\$ 7,413
<i>Sound Move Taxes</i>	\$ 2,030
Federal Grants	\$ 590
Fares & Other Operating Revenue	\$ 182
Bonds	\$ 3,897
Total Sources *	\$14,112

* Figures may not add exactly due to rounding error.

For a more detailed sources and uses of funds summary – including methodology, explanatory notes, and distribution of sources and uses by subarea – see Appendix A.

Risk Assessment

Building a complex regional transit system over an extended period involves risk. Those risks and Sound Transit's approach to addressing them are summarized below.

Tax Base Growth Risks: The plan requires projections of revenue collections over an extended period. The agency relies on an independent revenue forecast that has been reviewed by the State's Expert Review Panel. That forecast projects revenues to grow at 5.2 percent annually from 2008-2027, compared to a 6.4 percent annual growth from 1980-2005.

Federal Funds Risk: The ST2 Financial Plan assumes \$590 million in federal funds. This assumption is based on an overall 5% federal share of the ST2 capital program, compared with a 31% share for prior *Sound Move* projects. However, federal funds are contingent upon future Congressional authorization and may vary from initial ST2 projections due to federal fiscal conditions, timing of ST2 projects and competition from other transportation projects nationwide.

Costs Risks: ST2 is based on conceptual engineering estimates. The risks for costs to grow beyond initial estimates include: faster than anticipated growth in construction costs; faster than anticipated growth in real estate values; the addition of new required elements or projects not currently included in the plan; and more expensive alignments or station locations than included in the plan. The Sound Transit Board will closely monitor and manage project scope and cost risks to minimize cost increases. In addition, the ST2 plan includes contingencies within the project budgets that allow for uncertainties and unforeseen conditions that arise during the design and construction of the projects.

The ST2 financial plan also contains additional contingency to deal with revenue shortfalls or cost increases. The agency plans to maintain a 50 percent annual contingency (after payment of operating expense) above the amount necessary to pay debt service (1.5x net coverage policy). In the event that a subarea's revenues are

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insufficient to cover its costs, the agency's currently approved policies provide the Sound Transit Board with these options:

- Modify the scope of the projects
- Use excess subarea financial capacity
- Extend the time to complete the system
- Seek legislative authorization and voter approval for additional resources.

Financial Policies

The ST2 financial plan is based on the following principles, which are documented in the agency's financial policies and included as Appendix B to the plan. The financial policies also reflect the framework for completing ST2 and provide tools for the Sound Transit Board to respond to future conditions.

Distributing Revenues Equitably: Local tax revenue generated in each of Sound Transit's five subareas generally will be used on Sound Transit projects and operations that benefit that subarea. Subareas may fund projects or services located outside of the geographic boundary of the subarea when the project benefits the residents and businesses of the funding subarea. For more detailed revenue and expenditure information, see Appendix A.

Financial Management: To effectively manage voter-approved revenues and to efficiently manage the transit system, Sound Transit will maintain policies for debt and investment management, risk management, capital replacement, fares and operating expenses and grants management.

Public Accountability: Sound Transit will hire independent auditors and appoint a citizen oversight committee to monitor Sound Transit performance in carrying out its public commitments.

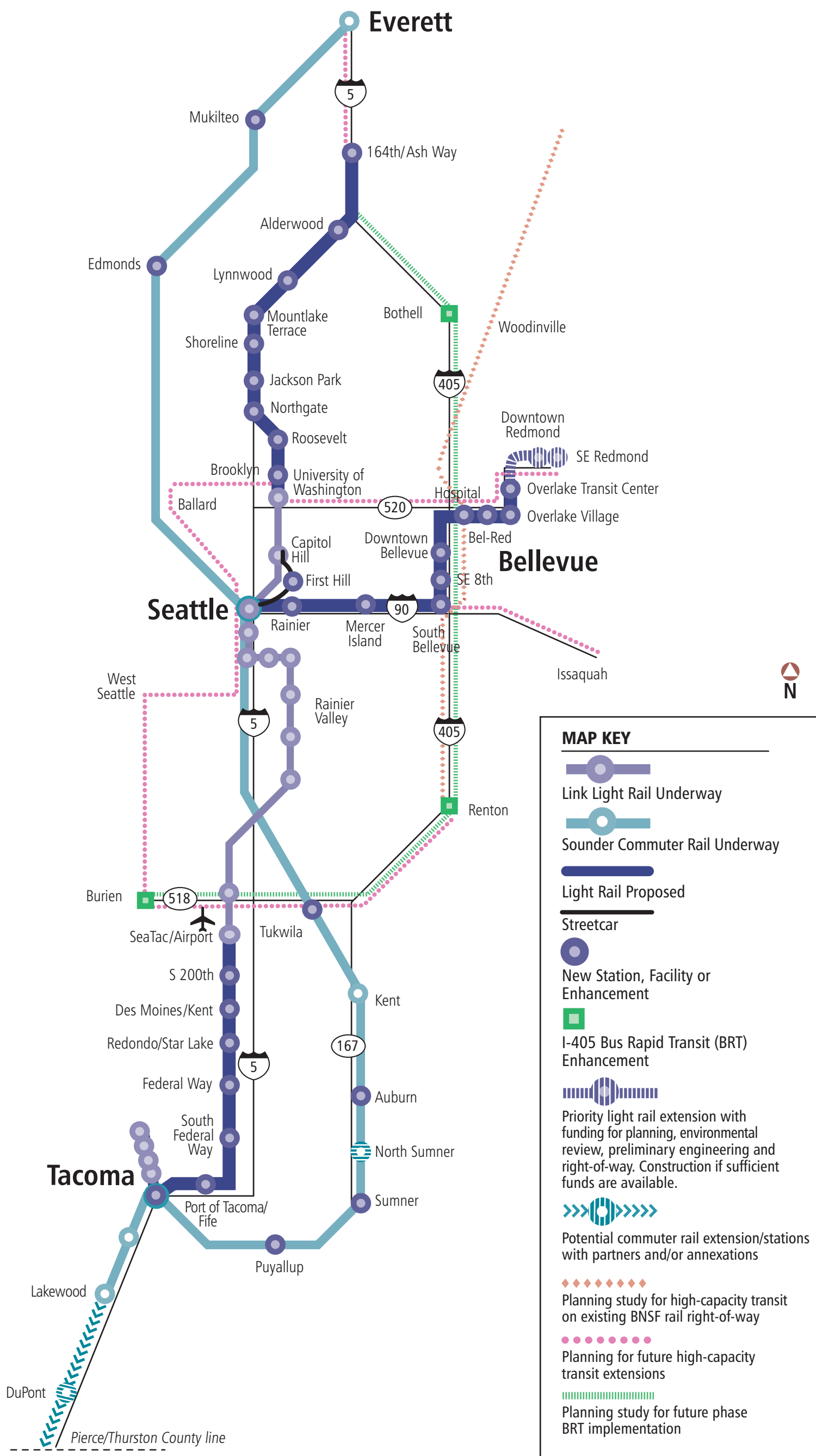
Voter Approval Requirement: The Sound Transit Board recognizes that the taxes approved by voters are intended to implement the system and to provide permanent

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funding for future operations, maintenance, capital replacement, and debt service for voter-approved projects, programs and services. The Board has the authority to fund those future costs through a continuation of the local taxes authorized by the voters. However, the Board pledges that, after the voter-approved plan is completed, subsequent phase capital programs that continue local taxes at rates above those necessary to build, operate and maintain the system, and retire outstanding debt, will require approval by a vote of the citizens within the Sound Transit District.

Sales Tax Rollback: If voters decide against extending the system in the future, the Sound Transit Board will initiate steps to roll back the rate of sales and use tax collected. First, an accelerated pay off schedule will be established for any outstanding bonds whose retirement will not otherwise impair or affect the ability to collect tax revenue. Once all debt is retired, Sound Transit will implement a tax rollback to a level necessary to pay for system operations and maintenance, fare integration, capital replacement and ongoing system-wide costs and reserves.

Sound Transit 2 Regional Transit System Plan Map



Sound Transit 2

**The Regional Transit System Plan
For the Central Puget Sound Region**

Appendix A: Detailed Description of Facilities and Estimated Costs

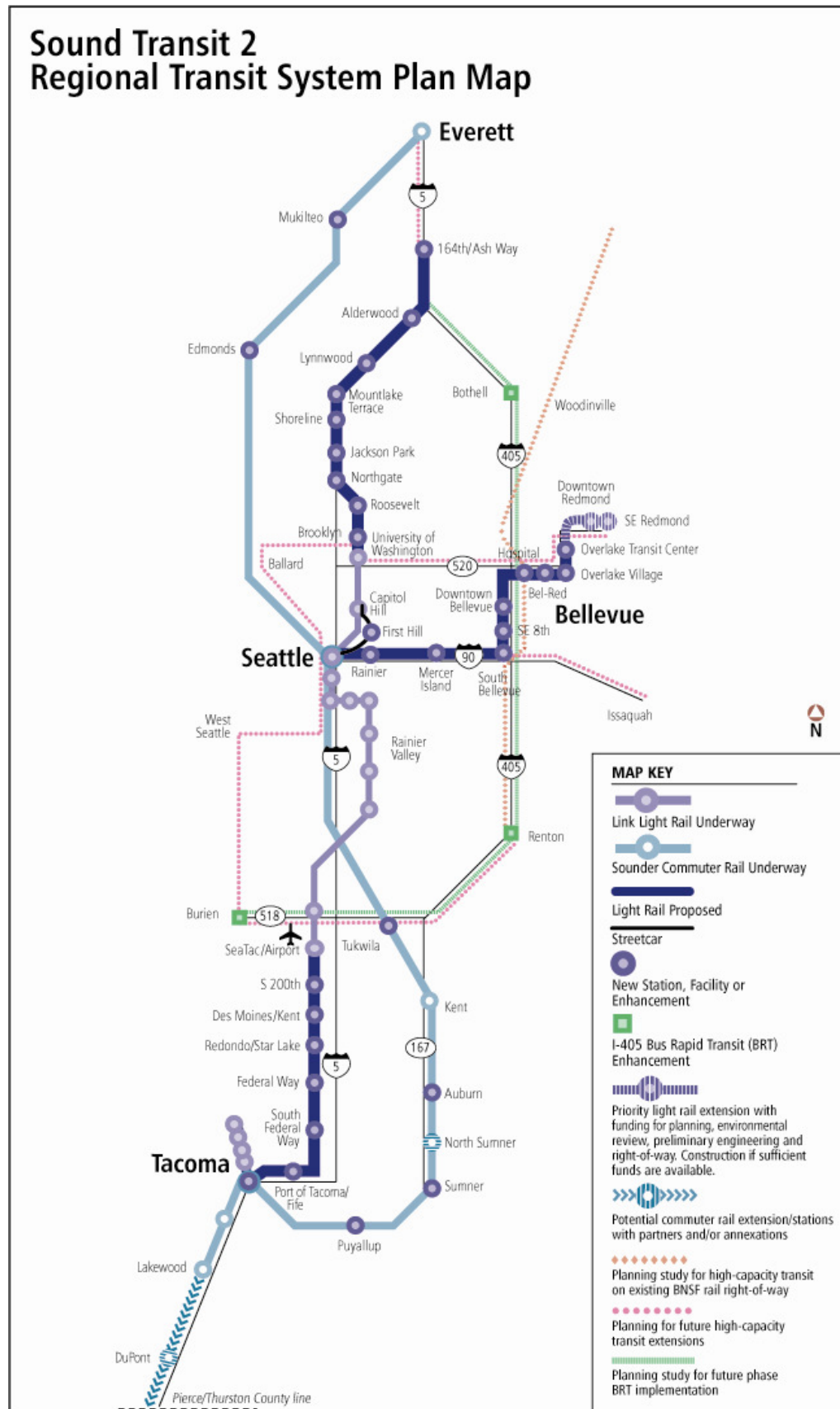
Sound Transit 2 The Regional Transit System Plan

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Sound Transit 2 Regional Transit System Plan Map



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Total Agency

Summary of Estimated ST2 Program Costs and Revenues

Projects

Sounder Commuter Rail

<ul style="list-style-type: none"> Permanent stations at Edmonds and Tukwila, provisional station (no costs included) at North Sumner Parking expansion at Mukilteo, Auburn, Sumner, and Puyallup Track & structure upgrades from Tacoma Dome to Reservation Junction 	Capital	O&M	Total
Total Costs (millions of 2006\$)	218	29	248

ST Express Bus

<ul style="list-style-type: none"> 77,000 - 96,000 additional on-going annual service hours by the end of ST2 Operating savings from service reinvestment in response to rail Bus fleet expansion Bus maintenance capacity expansion Bothell, Renton & Burien parking/transit facilities 	Capital	O&M	Total
Total Costs (millions of 2006\$)	357	(8)	349

Link Light Rail

<ul style="list-style-type: none"> North corridor extension from University of Washington to 164th/Ash Way East corridor extension from International District to Overlake Transit Center South corridor extension from SeaTac Airport to Tacoma Dome Fleet, maintenance facilities and annual operation 	Capital	O&M	Total
Total Costs (millions of 2006\$)	10,215	540	10,756

Planning for the Future

<ul style="list-style-type: none"> 1 light rail environmental/PE/strategic right-of-way preservation corridors 4 light rail corridor studies 3 high-capacity transit corridor studies 1 bus rapid transit corridor study 	Capital	O&M	Total
Total Costs (millions of 2006\$)	47	-	47

System-wide Activities

<ul style="list-style-type: none"> Agency administration and insurance, ST3 planning, fare integration, research & technology 	Capital	O&M	Total
Total Costs (millions of 2006\$)	40	943	983

Sources and Uses of Funds (Millions of 2006\$, 2008-2027)

Sound Move Taxes	2,030
ST2 Taxes	7,413
Federal Grants	590
Bonds	3,897
Fares and Other Operating Revenue	182
Systemwide Contributions	-
Adjustments	(0)
Total Sources	14,112

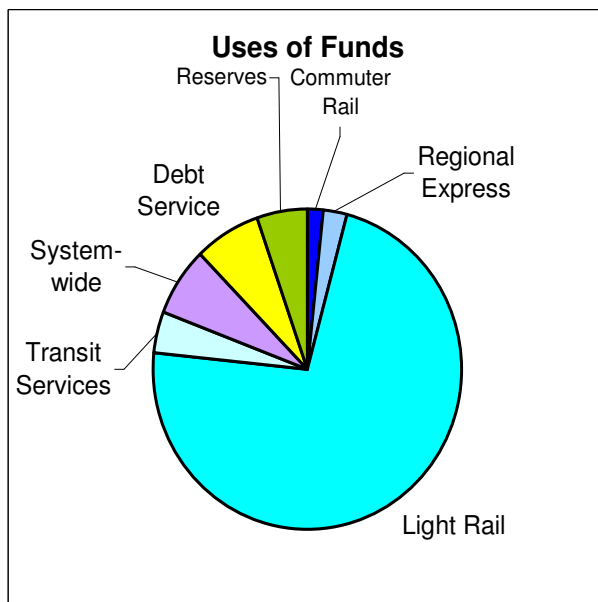
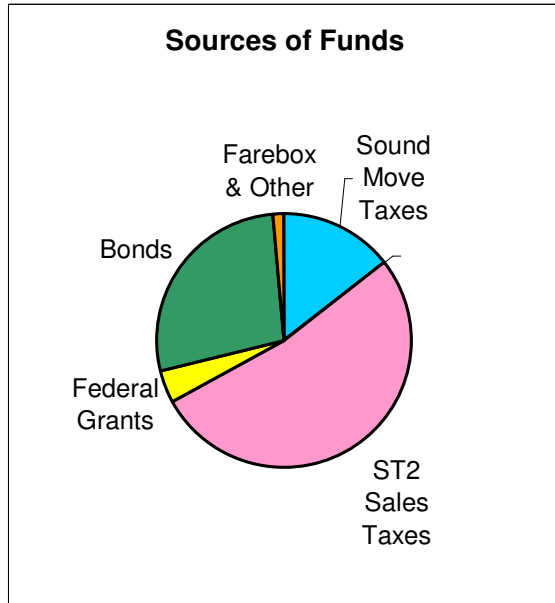
Commuter Rail	235
ST Express Bus	358
Light Rail	10,243
Transit Operations	563
Debt Service	986
Contributions to Reserves	745
Systemwide Activities	983
Total Uses	14,112

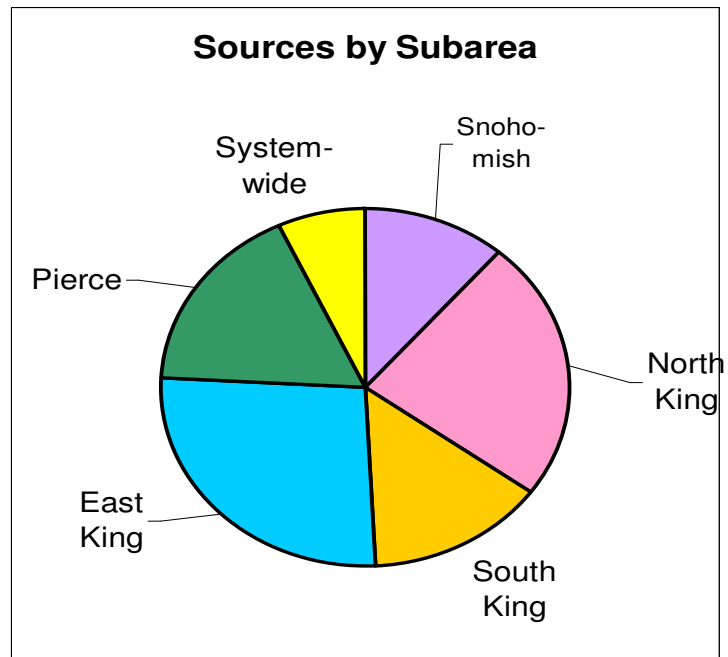
Link Light Rail - Priority Extension if Funding Becomes Available*

<ul style="list-style-type: none"> East corridor extension from Overlake Transit Center to Downtown Redmond Additional light-rail fleet, maintenance facilities and annual operation 	Capital	O&M	Total
Total Costs (millions of 2006\$)	684	8	692

*Costs of projects in Priority Extension box not included in the Sources and Uses tables.

**Total Sources/Uses of Funds
\$14,112 (Millions 2006\$)**





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Financial Plan - Sources & Uses Summary for ST2

2008 through 2027

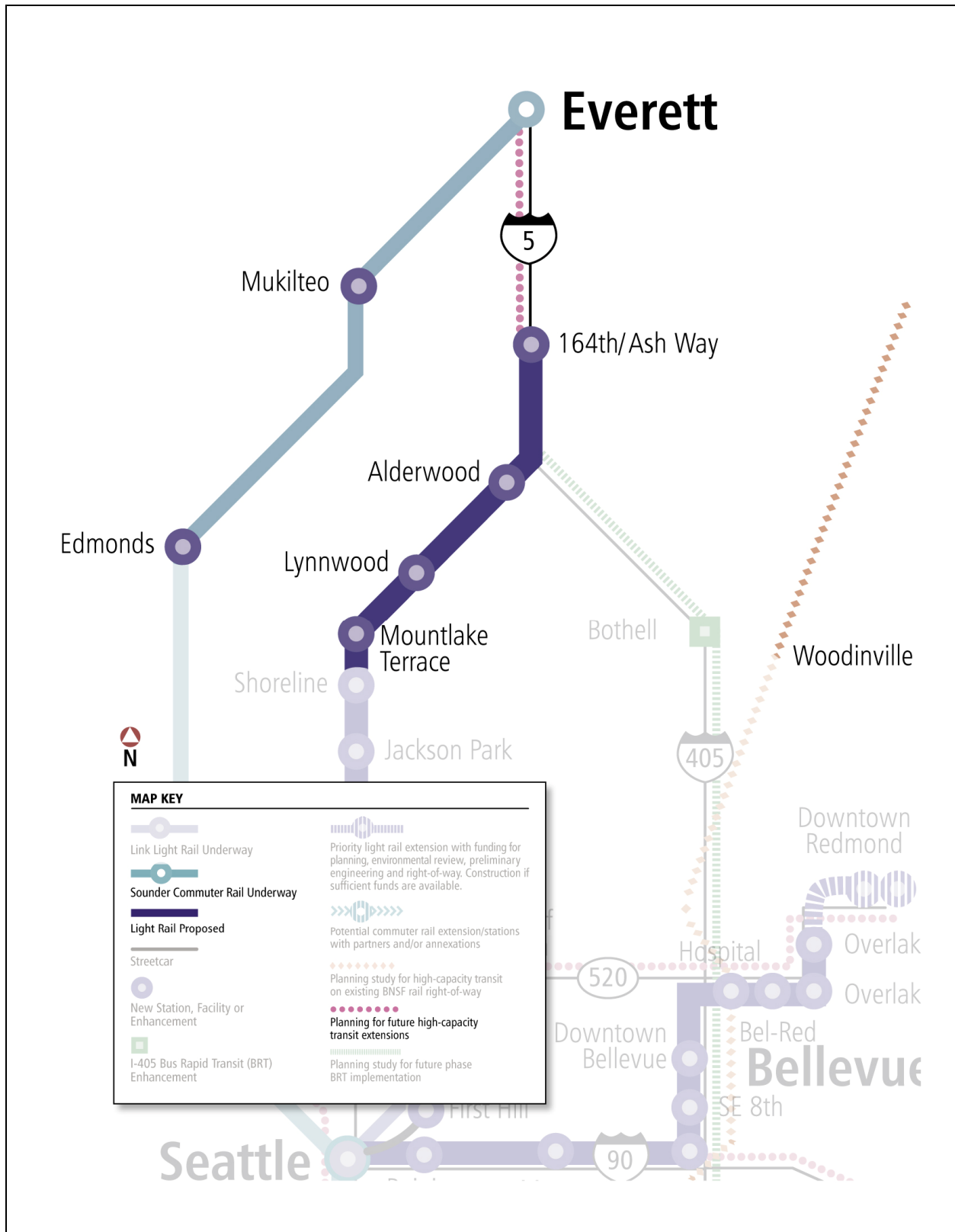
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(Millions 2006\$)

Sources of Funds		Snohomish	North King	South King	East King	Pierce	Regional Fund	Total
NOTES								
1	Sound Move Taxes	338	108	68	1,098	419	(0)	2,030
2	ST2 Taxes	903	1,927	1,377	1,914	1,292	-	7,413
3	Federal Grants	40	351	53	105	40	-	590
4	Bonds	439	1,101	639	877	840	-	3,897
5	Fares & Other Oper. Revenues	4	107	26	42	3	-	182
6	System-wide Contributions	(120)	(255)	(183)	(254)	(171)	983	-
7	Adjustments	(0)	-	(4)	4	1	-	(0)
8	Total Sources	1,605	3,339	1,976	3,785	2,423	983	14,112
Uses of Funds								
9	Sounder Commuter Rail	46	-	27	10	151	-	235
10	ST Express Bus	31	-	69	183	74	-	358
11	Link Light Rail	1,375	2,472	1,424	3,024	1,948	-	10,243
	<i>Total Capital Program</i>	<i>1,453</i>	<i>2,472</i>	<i>1,520</i>	<i>3,218</i>	<i>2,173</i>	-	<i>10,836</i>
12	Transit Operations	83	202	126	119	32	-	563
13	System-wide Activities	-	-	-	-	-	983	983
	<i>Total O&M</i>	<i>83</i>	<i>202</i>	<i>126</i>	<i>119</i>	<i>32</i>	<i>983</i>	<i>1,545</i>
14	Debt Service	43	375	176	271	121	-	986
15	Contributions to Reserves	26	290	154	178	97	0	745
16	Total Uses	1,605	3,339	1,976	3,785	2,423	983	14,112

See page A-19 for explanation of methodology and notes to line items.

Note: Columns/rows may not add exactly due to rounding error.



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Snohomish County Subarea

Summary of Estimated ST2 Program Costs and Revenues

Projects

<u>Sounder Commuter Rail</u>			
<ul style="list-style-type: none"> ▪ Mukilteo Station parking garage ▪ Permanent Edmonds station 			
	Capital	O&M	Total
Total Costs (millions of 2006\$)	40	12	52

<u>ST Express Bus</u>			
<ul style="list-style-type: none"> ▪ 12,000 – 15,000 additional annual service hours by end of ST2 ▪ Operating savings in response to rail operation ▪ Contribution to bus fleet expansion ▪ Contribution to bus maintenance capacity expansion 			
	Capital	O&M	Total
Total Costs (millions of 2006\$)	31	11	42

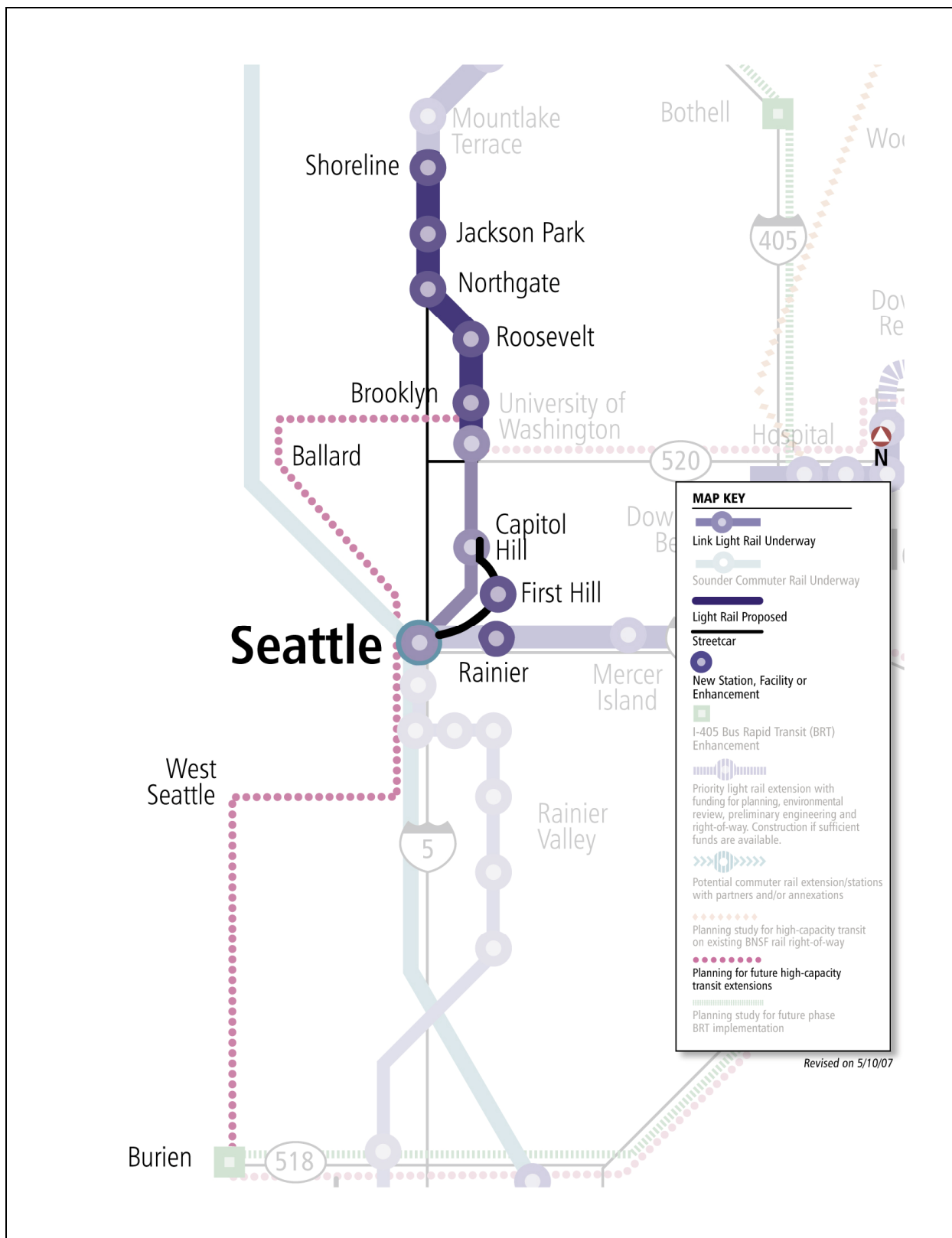
<u>Link Light Rail</u>			
<ul style="list-style-type: none"> ▪ Extension from N 185th St. in Shoreline to 164th/Ash Way, with stations at Mountlake Terrace, Lynnwood Transit Center, Alderwood and 164th/Ash Way ▪ Contribution to system maintenance capacity, fleet and annual operation 			
	Capital	O&M	Total
Total Costs (millions of 2006\$)	1,372	60	1,432

<u>Planning for the Future</u>			
<ul style="list-style-type: none"> ▪ Light rail planning study from 164th/Ash Way to Everett ▪ Snohomish-Renton BNSF corridor HCT study (with East King) 			
	Capital	O&M	Total
Total Costs (millions of 2006\$)	11	-	11

Sources and Uses of Funds (Millions of 2006\$, 2008-2027)

Sound Move Taxes	338
ST2 Taxes	903
Federal Grants	40
Bonds	439
Fares and Other Operating Revenue	4
Systemwide Contributions	(120)
Adjustments	(0)
Total Sources	1,605

Sounder Commuter Rail	46
ST Express Bus	31
Link Light Rail	1,375
Transit Operations	83
Debt Service	43
Contributions to Reserves	26
Total Uses of Funds	1,605



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North King County Subarea Summary of Estimated ST2 Program Costs and Revenues

Projects

<u>Sounder Commuter Rail</u>			
	Capital	O&M	Total
Total Costs (millions of 2006\$)	-	-	-

<u>ST Express Bus</u>			
	Capital	O&M	Total
Total Costs (millions of 2006\$)	-	-	-

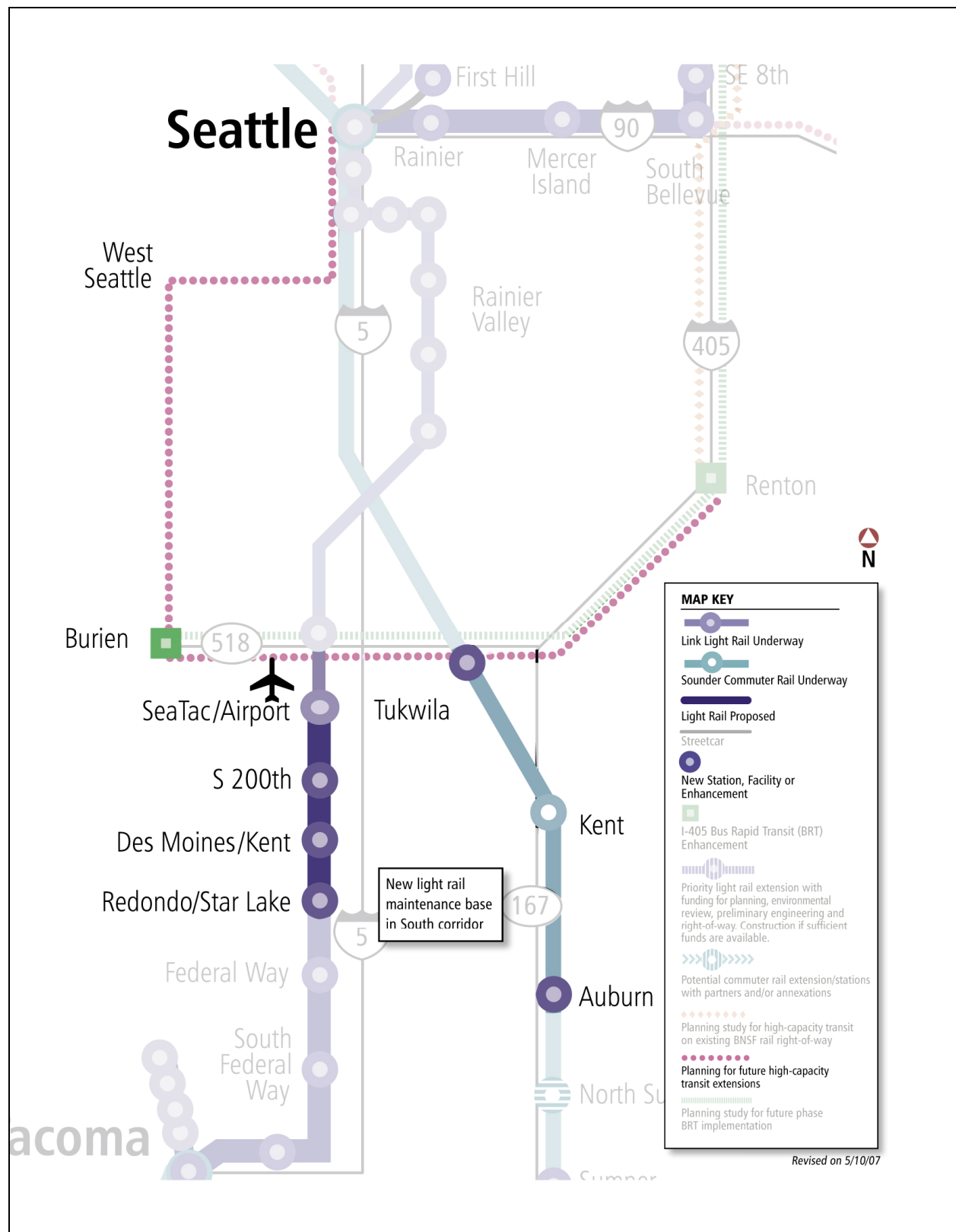
<u>Link Light Rail</u>			
<ul style="list-style-type: none"> Extension from University of Washington station to N 185th St. with stations at Brooklyn, Roosevelt, Northgate, Jackson Park and Shoreline Rainier Ave./I-90 station Contribution to system maintenance capacity, fleet and annual operation International District – First Hill – North Capitol Hill streetcar 			
	Capital	O&M	Total
Total Costs (millions of 2006\$)	2,465	202	2,667

<u>Planning for the Future</u>			
<ul style="list-style-type: none"> Light rail planning study from U District to Ballard to Downtown Seattle Light rail planning study from Burien-West Seattle to Downtown Seattle (with South King) 			
	Capital	O&M	Total
Total Costs (millions of 2006\$)	8	-	8

Sources and Uses of Funds (Millions of 2006\$, 2008-2027)

Sound Move Taxes	108
ST2 Taxes	1,927
Federal Grants	351
Bonds	1,101
Fares and Other Operating Revenue	107
Systemwide Contributions	(255)
Adjustments	-
Total Sources	3,339

Sounder Commuter Rail	-
ST Express Bus	-
Link Light Rail	2,472
Transit Operations	202
Debt Service	375
Contributions to Reserves	290
Total Uses	3,339



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South King County Subarea Summary of Estimated ST2 Program Costs and Revenues

Projects

<u>Sounder Commuter Rail</u>			
<ul style="list-style-type: none"> Auburn Station parking garage Permanent Tukwila Station 			
	Capital	O&M	Total
Total Costs (millions of 2006\$)	28	3	31

<u>ST Express Bus</u>			
<ul style="list-style-type: none"> Funding contribution to Burien Transit Center parking garage 9,000 - 11,000 additional on-going annual service hours by end of ST2 Contribution to bus fleet expansion Operating savings from service reinvestment in response to rail operation Contribution to bus maintenance capacity expansion 			
	Capital	O&M	Total
Total Costs (millions of 2006\$)	69	13	82

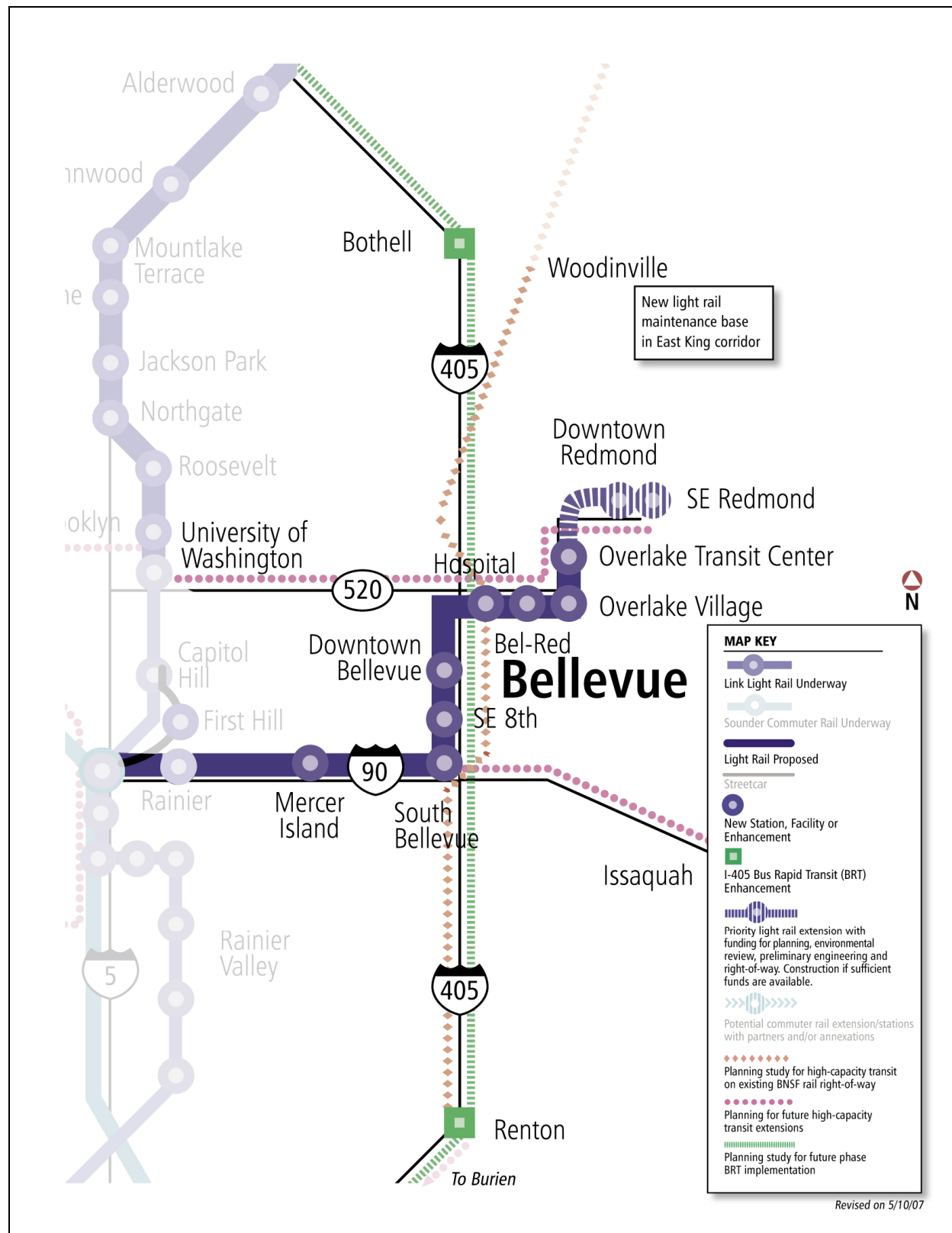
<u>Link Light Rail</u>			
<ul style="list-style-type: none"> Extension from SeaTac Airport station to Redondo/Star Lake, with stations at South 200th, Des Moines/Kent and Redondo/Star Lake Contribution to system maintenance capacity, fleet and annual operation 			
	Capital	O&M	Total
Total Costs (millions of 2006\$)	1,413	110	1,523

<u>Planning for the Future</u>			
<ul style="list-style-type: none"> Light rail planning study from Burien-West Seattle to Downtown Seattle (with North King) Light rail planning study from Burien to Renton 			
	Capital	O&M	Total
Total Costs (millions of 2006\$)	9	-	9

Sources and Uses of Funds (Millions of 2006\$, 2008-2027)

Sound Move Taxes	68
ST2 Taxes	1,377
Federal Grants	53
Bonds	639
Fares and Other Operating Revenue	26
Systemwide Contributions	(183)
Adjustments	(4)
Total Sources	1,976

Sounder Commuter Rail	27
ST Express Bus	69
Link Light Rail	1,424
Transit Operations	126
Debt Service	176
Contributions to Reserves	154
Total Uses	1,976



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East King County Subarea

Summary of Estimated ST2 Program Costs and Revenues

Projects

<u>Sounder Commuter Rail</u>			
	Capital	O&M	Total
Total Costs (millions of 2006\$)	-	-	-

<u>ST Express Bus</u>			
<ul style="list-style-type: none"> Bothell transit center and parking garage North Renton parking garage 35,000 - 44,000 additional on-going annual service hours by the end of ST2 Operating savings from service reinvestment in response to rail operation Contribution to bus fleet expansion Contribution to bus maintenance capacity expansion 			
	Capital	O&M	Total
Total Costs (millions of 2006\$)	182	4	186

<u>Link Light Rail</u>			
<ul style="list-style-type: none"> Extension from International District Station to Overlake Transit Center with stations at Mercer Island, South Bellevue, SE 8th, Downtown Bellevue, Hospital, Bel-Red, Overlake Village and Overlake Transit Center. Costs reflect an aerial alignment through Bellevue. A tunnel alignment would add an estimated \$498 million to the project cost. The Sound Transit Board will select a preferred alternative after completing environmental review. Environmental review, preliminary engineering and strategic right-of-way preservation from Overlake Transit Center to downtown Redmond Contribution to system maintenance capacity, fleet and annual operation 			
	Capital	O&M	Total
Total Costs (millions of 2006\$)	3,017	115	3,132

<u>Planning for the Future</u>			
<ul style="list-style-type: none"> SR-520 high capacity transit study from Redmond to University of Washington I-90 high capacity transit study from South Bellevue to Issaquah I-405 bus rapid transit study Renton-Snohomish BNSF corridor HCT study (with Snohomish) 			
	Capital	O&M	Total
Total Costs (millions of 2006\$)	19	-	19

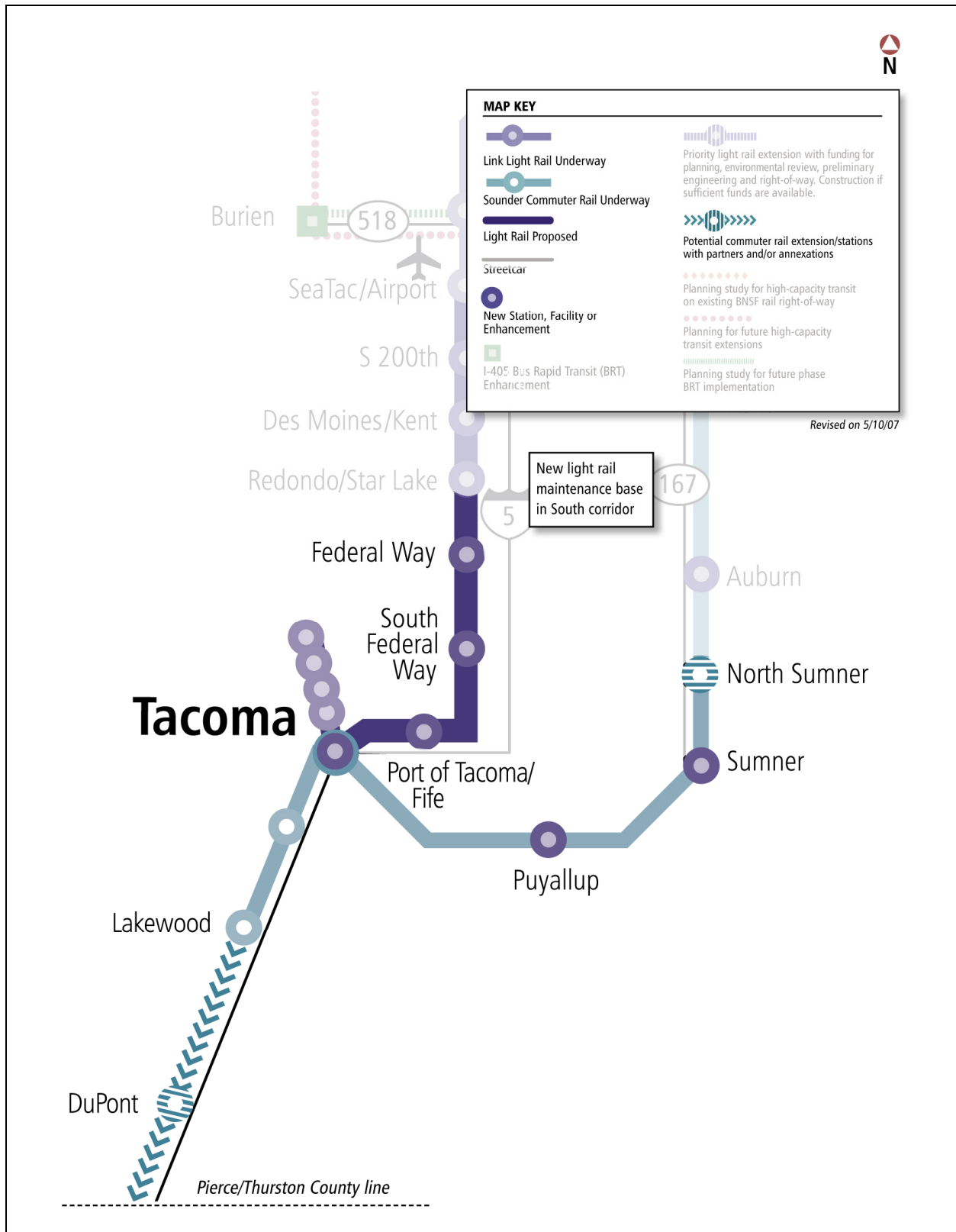
Sources and Uses of Funds (Millions of 2006\$, 2008-2027)

Sound Move Taxes	1,098
ST2 Taxes	1,914
Federal Grants	105
Bonds	877
Fares and Other Operating Revenue	42
Systemwide Contributions	(254)
Adjustments	4
Total Sources	3,785

Sounder Commuter Rail	10
ST Express Bus	183
Link Light Rail	3,024
Transit Operations	119
Debt Service	271
Contributions to Reserves	178
Total Uses of Funds	3,785

<u>Link Light Rail - Priority Extension if Funding Becomes Available*</u>			
<ul style="list-style-type: none"> Extension from Overlake Transit Center to Downtown Redmond with stations at SE Redmond and Downtown Redmond Additional fleet, maintenance facilities and annual operation 			
	Capital	O&M	Total
Total Costs (millions of 2006\$)	684	8	692

*Costs of projects in Priority Extension box not included in the Sources and Uses tables.



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Pierce County Subarea

Summary of Estimated ST2 Program Costs and Revenues

Projects

<u>Sounder Commuter Rail</u>			
<ul style="list-style-type: none"> Sumner Station parking garage and pedestrian bridge Puyallup Station parking garage and pedestrian bridge Track & structure upgrades from Tacoma Dome to Reservation Junction North Sumner station (no costs included; provisional if funding from other parties becomes available) 			
	Capital	O&M	Total
Total Costs (millions of 2006\$)	150	14	164

<u>ST Express Bus</u>			
<ul style="list-style-type: none"> 21,000 - 26,000 additional on-going annual service hours by the end of ST2 Operating savings from service reinvestment in response to rail operation Contribution to bus fleet expansion Contribution to bus maintenance capacity expansion 			
	Capital	O&M	Total
Total Costs (millions of 2006\$)	74	(35)	39

<u>Link Light Rail</u>			
<ul style="list-style-type: none"> Extension from Redondo/Star Lake to Tacoma Dome Station with stations at Federal Way, South Federal Way, Port of Tacoma/Fife and Tacoma Dome Contribution to system maintenance capacity, fleet and annual operation 			
	Capital	O&M	Total
Total Costs (millions of 2006\$)	1,948	53	2,001

<u>Planning for the Future</u>			
	Capital	O&M	Total
Total Costs (millions of 2006\$)	-	-	-

Sources and Uses of Funds (Millions of 2006\$, 2008-2027)

Sound Move Taxes	419
ST2 Taxes	1,292
Federal Grants	40
Bonds	840
Fares and Other Operating Revenue	3
Systemwide Contributions	(171)
Adjustments	1
Total Sources	2,423

Sounder Commuter Rail	151
ST Express Bus	74
Link Light Rail	1,948
Transit Operations	32
Debt Service	121
Contributions to Reserves	97
Total Uses of Funds	2,423

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System-wide Costs

Summary of Estimated ST2 Program Costs and Revenues

Projects (Millions of 2006\$)

	Capital	O&M	Total
Fare Integration		22	22
Research and Technology		30	30
ST3 Planning/Engineering		60	60
ST Agency Administration & Other	40	831	871
Total	40	943	983

Sources and Uses of Funds (Millions of 2006\$, 2008-2027)

Sound Move Taxes	(0)
ST2 Taxes	-
Federal Grants	-
Bonds	-
Fares and Other Operating Revenue	-
Systemwide Contributions	983
Adjustments	-
Total Sources	983

ST Express Bus	-
Link Light Rail	-
Transit Operations	-
System-wide Activities	983
Debt Service	-
Contributions to Reserves	0
Total Uses	983

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Methodology for Financial Plan – Sources & Uses Summary for ST2

Sound Transit maintains an integrated long-range financial model that includes two elements:

1. On-going *Sound Move* projects and services funded by tax revenues voters approved in 1996, and
2. ST2 projects and services funded by tax revenues not yet voter approved.

In order to derive a Sources and Uses statement for just the ST2 component of this financial plan, the financial model was first run with only the *Sound Move* projects, services and funding (no ST2 programs or funding).

Then the model was run with both *Sound Move* and ST2 projects, services and funding included. The Sources & Uses table for "ST2 only" on page A-7 was obtained by subtracting the results of the first model run from the second. This technique produces an approximate summary of the Sources and Uses for just the ST2 plan.

Notes to Financial Plan - Sources and Uses Summary for ST2

- 1 Revenue from Sound Move taxes, grants, fare and other miscellaneous revenue, net of interest earnings.
- 2 Revenue from 0.5% Sales and Use Tax Increase.
- 3 Federal grants for capital programs (FTA formula grants and Full Funding Grant Agreements).
- 4 Estimated net issuance of bonds issued to fund ST2 Projects.
- 5 Fares and other operating revenue from ST2 service.
- 6 Funding from subareas for Board identified system-wide costs.
- 7 Net interest on transfers to/(from) other subareas and other adjustments.
- 8 Total sources of funds for all ST2 projects and services.
- 9 Capital costs of Sounder Commuter Rail system.
- 10 Capital costs of ST Express bus system.
- 11 Capital Costs of Link Light Rail system. Includes extensions to 164th/Ash Way, Overlake Transit Center and Tacoma-Dome Station. Does not include \$40 million of capitalizable administrative support costs.
- 12 Includes service enhancement fund for *Sound Move* projects as well as new service in ST2.
- 13 Includes agency administration, research and technology programs, fare integration, ST3 planning. Includes \$40 million of capitalizable agency administrative support costs.
- 14 Debt service on bonds issued for ST2 projects.
- 15 Contribution to O&M reserve and bond reserve and ending net cash balances.
- 16 Total Uses of Funds for all ST2 projects and services.

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Sound Transit 2

**The Regional Transit System Plan
For the Central Puget Sound Region**

Appendix B: Financial Policies

Sound Transit 2 The Regional Transit System Plan

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Sound Transit Financial Policies

**As Adopted May 31, 1996 (Resolution No. 72)
As Amended April 13, 2006 (Resolution No. 72-1)
As Amended _____, 2007 (Resolution No. 2007-05)***

The Sound Transit Board may amend these Financial Policies from time to time; the most current version of the Financial Policies is available at www.soundtransit.org

PURPOSE

The Sound Transit Board (“the Board”) adopted an initial framework for the financing of *Sound Move*, by setting local tax rates, focusing on minimal debt financing, requiring conservative projections for federal and state funding, and establishing a definition by which equity will be measured. The Financial Policies reflect the Board's policy intent for implementing the financial framework for completing *Sound Move* and subsequent System Plans and for providing the tools to the Board to appropriately manage toward and respond to future conditions.

LEGAL RESONSIBILITIES

In adopting these Financial Policies, the Board recognizes certain legal responsibilities. Existing state law grants all legislative and policy authority to the Board, and does not allow the Board to abrogate, transfer or delegate such authority to other agencies or to the five subareas within the Sound Transit District. Consequently, all funds collected by or provided to Sound Transit, including local tax revenues, federal and other government grants, bond proceeds, fare box revenues, interest earnings, and private development revenues, may be disbursed only with approval of the Board. Priorities for disbursements will be determined within Sound Transit's annual budgetary process, which by law requires a favorable vote by two-thirds of the Board.

Similarly, the Board recognizes that bonds issued by Sound Transit will be secured by a pledge of repayment through local taxes. When the bonds are issued, Sound Transit will enter a binding contract with its bondholders that requires a first claim against local tax revenues for repayment. Stated differently, bondholders will have a legal priority to Sound Transit's local tax revenues, above and beyond any commitment Sound Transit may wish to make with its subareas that no subarea will pay another subarea's debt. Therefore, these Financial Policies reflect Sound Transit's commitment to subarea equity while maintaining the flexibility necessary to manage the financing of the System Plan on a consolidated basis and within legal constraints.

* Resolution No. 2007-05 provides that these amended Financial Policies take effect upon the earlier of either the approval of local funding for the ST2 Plan by the voters at an election, currently scheduled for November 2007, or upon Board adoption of the amended Financial Policies by separate Resolution.

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EQUITY

Definition of equity

- a) Equity will be defined as utilizing local tax revenues for projects and services that provide transportation benefits to the residents and businesses in each of the subareas generally in proportion to the level of revenues each subarea generates. Subareas may fund projects or services located outside of the geographic subarea when the project substantially benefits the residents and businesses of the funding subarea. The Financing Plan for Sound Transit activities addresses this equity principle by providing a financial plan for each of the five Sound Transit subareas, comprised of the subarea's share of local taxes, bonding capacity, farebox proceeds and an assumption for federal funding. The five subareas are defined as Snohomish County, North King County/Seattle, East King County, South King County, and Pierce County. While the Financing Plan will be managed by the Board on a consolidated basis, the Board will report annually on individual subarea performance.
- b) The Board agrees, therefore, that the facilities, projects and services identified in all voter-approved System Plans represent a reasonable definition of equity for purposes of satisfying both public policy concerns and statutory requirements. The Financial Plan for voter-approved System Plans will serve as the starting point for evaluating the equity principle.

IMPLEMENTATION POLICY

a) Subarea Reporting:

1. The Financial Plan will provide projections for each of the five subareas, comprised of the subarea's projected share of local taxes, use of bonds, farebox proceeds, an assumption for federal funding and related expenditures.
2. Local taxes will be allocated for subarea reporting based on actual tax receipts collected by subarea and within the Sound Transit District. The annual Financial Plan will incorporate updated forecasts based on these actual receipts. A portion of local taxes from each subarea will be allocated to fund system-wide costs as identified by the Board.
3. For subarea reporting purposes, government funding that is received for a specific project or service will be allocated to subarea(s) on a basis consistent with the allocation of costs for the project or service, unless the board takes action to allocate the funds to other subareas as it deems in the best interest of Sound Transit after consideration of the funding needs to complete, enhance or extend the system plan.

For subarea reporting purposes, government funding that is received that is agency-wide or general in scope will be allocated by the board as it deems in the best interest of Sound Transit after consideration of the funding needs to complete, enhance or extend the system plan.

4. Miscellaneous revenues, such as those generated through private-public partnerships, advertising and terminal concessions will be allocated for subarea reporting based on subarea investment in the facility and/or service from which the revenue is generated.

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5. Debt will be allocated for subarea reporting based on a subarea's share of total long-term bonding requirements or as otherwise directed by the Board as deemed in the best interest of Sound Transit.
6. Subarea expenditures will be allocated for subarea reporting based on facilities and services to be provided, their projected costs and project contingencies, associated operating costs, debt service, reserves for debt service, operations and maintenance and capital replacement. The allocation of expenditures for reporting purposes for facilities and services that cross subarea boundaries will be made by the Board to ensure safe and efficient operation of the system-wide facilities and services after due consideration to subarea benefits and priorities.

b) Monitoring function:

1. Sound Transit will establish a system that on an annual basis reports subarea revenues and expenditures. This monitoring and reporting function will be incorporated into Sound Transit's financial cycle. The Board may at its discretion conduct an independent assessment of the consistency of subarea reporting with Board policy guidance.
2. Sound Transit will appoint an advisory Citizen Oversight committee to monitor Sound Transit performance under these policies (see Public accountability below).

c) Adjustments to subarea projects and services:

1. Subarea capital projects and transit services will be evaluated and adjusted annually as a part of the Board's consideration and adoption of an annual budget which requires a two-thirds favorable vote of the Board. Adjustments to subarea capital projects and services can include additional priority projects and/or services within that subarea should funding be available. This adjustment process recognizes that some fluctuation in revenues and expenditures against forecasts will occur.
2. For those cases where a subarea's actual and projected expenditures exceed its actual and projected revenues and funding sources by 5 percent or greater, and/or where unforeseen circumstances occur which would result in an inability to substantially complete projects within such subarea's plan, the Board shall take one or more of the following actions:
 - Correct the shortfall through use of such subarea's uncommitted funds and/or bond capacity which is available to the subarea; and/or
 - Scale back the subarea plan or projects within the plan to match a revised budget; and/or
 - Extend the time period of completion of the subarea plan; and/or
 - Seek legislative authorization and voter approval for additional resources.
3. For those cases where a subarea's actual and projected revenue to be collected until the system plan is completed will exceed its actual and projected expenditures by five percent or greater, and/or where unforeseen circumstances occur which would result in the

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subarea's ability to fund additional projects and services not identified in the Plan, then Sound Transit may use such surplus funds to complete, extend or enhance the System Plan to provide transportation benefits for the subarea's residents or businesses as determined by the Board.

4. Contributions from other parties, including the State, local governments and private sector can be programmed by the Board to complete, extend or enhance the System Plan, consistent with agreements with the other party.

SYSTEM-WIDE EXPENDITURES

The Board shall fund such system-wide expenditures as necessary to maintain and plan for an integrated regional transit system consistent with voter-approved System Plans. Such system-wide expenditures shall include fare integration, research and technology programs, future phase planning and agency administration and other such expenditures as determined by the Board to be appropriate. Properties authorized for purchase by the Board to preserve required right-of-way will be funded as a system-wide cost until such time as the right-of-way is utilized by a subarea(s), at which time the cost will be allocated to the subarea(s) consistent with Board approved allocation. System-wide expenditures, not funded by dedicated system-wide agency interest earnings, revenues or other specific funding sources, shall be allocated to subareas proportional to the subarea's share of total local tax revenues, population, benefits received, or on another basis as deemed appropriate by the Board.

DEBT MANAGEMENT

Legal definition of SOUND TRANSIT debt financing capacity

Sound Transit's enabling legislation defines Sound Transit's capacity for issuing general obligation debt at one and one-half percent of the value of the taxable property within the boundaries of the Sound Transit District (and with approval of three-fifths of voters voting within the Sound Transit District, up to five percent of the value of the taxable property within the district's boundaries). There is no dollar limit for revenue indebtedness.

Debt Service Coverage Requirements

The Board recognizes that its future bondholders will hold first claim against taxes pledged as repayment for outstanding bonds. However, Sound Transit's debt financing capacity will be calculated on a more conservative basis, by evaluating all revenues and deducting total operating expenses for net revenues available for debt service.

For long-term planning purposes, Sound Transit agency debt service coverage ratio policy will be set at an average coverage ratio of 2.0x for net revenues over annual debt service costs, not to fall below 1.5x in any single year. However, as voter-approved plans are implemented, prudent changes to coverage ratios may be made by the Board as appropriate. Prior to bond issuance, Sound Transit will establish the appropriate debt service coverage ratio to incorporate into its bond covenants.

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Uses of Debt Financing

1. Debt financing for capital projects covers two distinct types of borrowing, the first related to long term debt financing, and the second related to short term debt financing.
2. Short-term debt financing (with terms of ten years or less) is expected to be used primarily to bridge the gap between the necessary timing of expenditures and the anticipated receipt of revenues.
3. The use of long term financing (with terms of more than ten years) is expected to be limited to capital and related costs for portions of the program that have a useful life in excess of the term of the debt. Long-term financing should be preserved for those aspects of the program for which other sources of funds are not likely to be available.

Allocation of Sound Transit Debt

1. For reporting purposes, the amount of long-term debt financing used to benefit each of the subareas will be based on each subarea's ability to repay debt after covering operating costs. The Board may determine appropriate debt service limits by subarea.
2. While the above policy prescribes the use of debt financing for subarea reporting, the Board will manage the agency's debt capacity on a consolidated basis so as to maximize resources between subareas.

SETTING PRIORITIES FOR EXPENDITURES

The Board will adopt expense budgets for transit operations and agency administration and maintain a multi-year capital improvement plan. A two-thirds vote of the Board is required for budget adoption. Sound Transit will establish guidelines for its budgeting process and criteria by which to establish priorities for expenditures.

FINANCIAL MANAGEMENT

Sound Transit shall maintain policies for debt and investment management, risk management, capital replacement, fares and operating expenses and grants management so as to effectively manage voter-approved revenues and efficiently operate the regional public transit system.

PUBLIC ACCOUNTABILITY

To ensure that the construction program development and implementation occurs within the framework and intent of these policies, Sound Transit will:

1. Conduct an annual independent audit of its financial statements in compliance with state and federal requirements;
2. Appoint and maintain an advisory citizens' oversight committee, charged with an annual review of Sound Transit's performance and financial plan, for reporting and recommendations to the Board.

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FUTURE PHASES

Voter approval requirement

The Board recognizes that the voter-approved taxes are intended to be used to implement the System Plan and to provide permanent funding for future operations, maintenance, capital replacement and debt service (“permanent operations”) for voter-approved programs and services. The Board has the authority to fund these future costs through a continuation of the local taxes authorized by the voters. However, as a part of its commitment to public accountability, the Board pledges that the local taxes will be rolled back to the level required for permanent operations after the System is completed and implemented. The Board further pledges that any subsequent phase capital programs that would continue local taxes after the System is completed at tax rates higher than necessary for permanent operations will require approval by a vote of those citizens within the Sound Transit District.

Sales tax rate rollback

Should voter approval for a future phase capital program not be forthcoming, the Board will initiate two steps to roll back the rate of sales tax collected by Sound Transit.

1. First, Sound Transit will initiate an accelerated pay off schedule for any outstanding bonds whose retirement will not otherwise impair the ability to collect tax revenue and complete the System plan, or impair contractual obligations and bond covenants. Sound Transit will implement a sales tax rollback to a level necessary to pay the accelerated schedule for debt service on outstanding bonds, System operations and maintenance, fare integration, capital replacement, and ongoing system-wide costs and reserves.
2. Once all debt is retired, Sound Transit will implement a tax rollback to a level necessary to pay for system operations and maintenance, fare integration, capital replacement and ongoing system-wide costs and reserves.

Financial policies review

These Financial Policies may be amended from time to time as the Board deems necessary to implement and complete the System Plan. These policies, as they may be amended, will apply to future capital programs. The Financial Policies will be reviewed for applicability prior to any submittal of a future capital program to the Sound Transit District voters.

-end-

Sound Transit 2

**The Regional Transit System Plan
For the Central Puget Sound Region**

Appendix C: Benefits, Costs, Revenues, Capacity, and Reliability

Sound Transit 2 The Regional Transit System Plan

Sound Transit 2

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Introduction

Voters in the central Puget Sound region are being asked to make a major financial investment in transportation improvements proposed in the Sound Transit 2 Plan. This report provides the region's citizens with an assessment of various benefits the region can expect from the fully implemented ST2 plan.

Transportation improvements are clearly linked to the growth, development, quality of life and economic vitality of a region. ST2 proposes a range of transit improvements building on the investments Sound Transit has already made, with major extensions of Link light rail to serve more of the central Puget Sound region's urban centers, along with improvements in Sounder commuter rail and enhancements of ST Express bus. These improvements add major new capacity in the region's most congested corridors, to help serve the transportation demands of the people and businesses already here, as well as anticipated growth.

Since improved transportation is such an important part of maintaining the livability and vitality of the region – and because the ST2 plan provides such a major extension of rail services throughout the region – this analysis goes a step beyond an ordinary approach to analyzing benefits.

In addition to looking at the travel benefits that can be thoroughly documented or conservatively projected, this report provides a broader discussion of the community and regional benefits that can be expected from the ST2 investment.

As with road and highway construction, transit investments create value within a community that goes beyond where projects are built and how much concrete is poured. Personal mobility, regional connections, the

availability of transportation alternatives, and impacts on growth patterns, quality of life and the economic well-being of the region are all tangible outcomes that must be considered in deciding on transit investments, as they typically are in decisions on road investments.

Table 1 shows a set of broad performance measures, some of which can be projected and measured, and others that are more difficult to quantify but which are important benefits of investing in transit infrastructure.

When the citizens of our region total both the direct and quantifiable benefits of transit investments, along with the indirect and qualitative benefits, and compare them to the costs of the plan, they will have the information necessary to make an informed decision. Already, the region is reaping the early benefits of the transit investments made as a part of *Sound Move*, Sound Transit's initial plan. Many benefits, however, such as the region's ability to achieve its land use vision, and the shifting travel patterns that support dense, mixed-use development in walkable regional centers, will only be fully realized over the decades to come. Meanwhile the direct and quantifiable benefits, such as more riders on transit, savings in travel time and travel costs, will continue to grow as more investments come on line and more people arrange where they live, work and shop, and how they travel, to take advantage of greatly expanded high-capacity transit options.

Data and methodology used to analyze direct benefits of the transportation improvements in ST2 have been prepared in accordance with nationally accepted standards and procedures, and have been subject to review by an independent Expert Review Panel appointed by and accountable to the state of Washington.

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Table 1: Measures of Performance by Type		
Transit Measures	Other Measures	
Transit ridership	Achievement of Vision 2020, the region's land-use plan	Vehicle miles reduced
Additional transit passenger trips	Development of dense, walkable urban centers	Vehicle ownership and operating cost savings
Time savings to transit riders in hours	New businesses attracted to the region	Reduced parking demand and cost savings
Value of travel time savings to transit riders in dollars	Increased economic activity	Improved connections between regional centers
Subsidy per passenger trip and per passenger mile	Reduction in highway delay for private and commercial vehicles	Avoiding sprawl outside the urban growth boundary
Farebox recovery ratios (operating revenue/operating expense)	Construction and related employment	Preserving rural and natural land
Transit system productivity	Permanent employment in operations and maintenance	Improved human health from increased walking and cycling
Transit system reliability	Increased rail freight mobility	Transportation benefits during special events (sports, fairs, etc.)
	Attaining Commute Trip Reduction Act Goals	Tourist spending

Benefits of ST2 investments in the regional transit system

Background

According to the Puget Sound Regional Council, between 1999 and 2005, transit ridership in the region grew over one and a half times as fast as daily vehicle miles traveled. These numbers cap a slow reversal of trends that started in the 1980s, when transit ridership could not keep pace with the explosive growth of travel by personal vehicle.

For a few years in the 1980s, as women entered the workforce in unprecedented numbers, employment in the region grew about twice as fast as population. At the same time, rising family incomes, the travel demands of two-worker families, and the continued patterns of suburban sprawl in the region, fueled a growth in travel by personal vehicle that outpaced by four times the growth in population.

This imbalance, though somewhat less pronounced as the years passed, continued through the 1990s and became deeply embedded in people's expectations about traffic and gridlock, present and future. At the same time, even though transit ridership continued to grow, it did not keep pace with the overall increase in traffic.

Looking at the new century, transit ridership grew slightly in 2000 and 2001 but then, during the worst of the economic slowdown, actually declined in 2002 and

2003. As the economy picked up, however, people chose transit in increasing numbers and ridership rebounded sharply. At the same time, the trends of the previous decades reversed as more people decided to ride transit instead of drive.

In 1996, the year Sound Transit's *Sound Move* plan was approved by the voters, about 75 million individual trips were made on buses and trains in the Sound Transit service area. By 2006 that number had grown to 98 million trips.

By 2030, the completed projects in *Sound Move* and ST2, along with continued growth in people riding local buses, means that public transit in the Sound Transit district will be carrying about 167 million trips a year, more than twice as many as in 1996. Over 100 million of these trips will be on Sound Transit. Most importantly, these new transit trips will be concentrated in the region's most congested corridors on bus routes and rail lines serving the region's densest downtowns and urban centers, adding critical capacity where it is most needed to support the region's economy and preserve its quality of life.

This section details the benefits to transit riders of ST2's major expansion in high-capacity transit throughout the region.

Transit passenger trips

The most important measure of any transit investment is whether it attracts riders and serves them well. The most direct way to measure this factor is the numbers of people riding transit. With the ST2 plan, transit ridership in the region is projected to grow by 70% over today.

Table 2 compares regional transit ridership today with ridership projections for 2030, with and without the ST2 investments.

Highlight

If the region's daily transit trips were all made by car, the line of cars would extend about 800 miles. The 2030 daily ridership represents a line of cars nearly 1,500 miles long.

Table 2: Regional Transit Ridership and Transfer Rate

	Existing in 2006	2030 without ST2	2030 with ST2
Daily			
Transit Trips	329,000	482,000	556,000
Transit Boardings	424,000	661,000	818,000
Annual			
Transit Trips	98 million	145 million	167 million
Transit Boardings	127 million	199 million	247 million
Percent Using ST	12%	40%	65%
Transfer Rate	1.29	1.37	1.47

Definitions

Transit passenger trips are counted with regards to *boardings*, *trips*, *transfers* and *passenger miles*. These terms are defined here.

- **Boardings:** Transit *boardings* are the number of times a passenger steps into any transit vehicle.
- **Passenger trips** (or transit trips) – *Trips* represent a completed journey made by a person from an origin to a destination (such as home to work). Because people may transfer from one route to another to complete such a journey, *trips* can consist of more than one transit *boarding*.
- **Transfer** – A *transfer* is when a passenger changes from one transit

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vehicle to another (bus-to-bus, or bus-to-train for example) to complete their trip. *Transfers* explain why the average transit trip consists of more than one *boarding*, and are a good measure of the effective integration of the individual routes that make up the overall transit system.

Transfer rates are an indication of how the individual elements of a transit system complement each other, that is how complete the coverage is, and the range of trips that can be made on the network. Nationwide and worldwide, higher *transfer rates* are strongly and positively correlated with higher transit ridership.

- Passenger miles – *Passenger miles* are a measure of service that a transit line, route or system is providing to its riders. For example, 100 passengers traveling ten miles each, results in 1,000 *passenger miles* of travel.

Highlight

In 2030, with the ST2 plan, the region's residents and visitors will travel over a billion miles a year on Link light rail, Sounder commuter rail, and ST Express bus.

Transit ridership on ST by service type

Table 3 summarizes the annual boardings and passenger miles projected for Link light rail, Sounder commuter rail and ST Express bus in 2030 with the ST2 Plan.

Table 3: Summary of Projected Sound Transit Ridership by Mode in 2030

	<u>Annual Riders</u>	<u>Annual Passenger miles</u>
Link light rail	95 million	856 million
Sounder commuter rail	4 million	99 million
ST Express bus	9 million	70 million
Total	108 million	1,025 million

Forecast Methods

Sound Transit's ridership forecasts that form the basis for this report were prepared for the year 2030. The forecasts are based on:

- The Puget Sound Regional Council's adopted population and employment forecasts.
- A well-documented modeling/forecasting methodology reviewed by local and national experts and approved by the Federal Transit Administration, specifically designed to avoid over-forecasts of transit ridership.

Sound Transit wants to ensure that its forecasts are appropriate and do not overstate system benefits. Accordingly, Sound Transit's forecasts do *not* consider other factors that have been shown to affect rail and overall transit ridership positively but which are not easily quantified. These include:

- Rail bias: *Rail bias* is the demonstrated willingness of people to make urban transit trips on trains that they would not make on equally fast buses. Researchers have documented this preference, and link it to passengers' perceptions of rail's speed and reliability, as well as a confidence factor related to the ease of understanding inherent in rail routes – passengers know trains can take them only where the tracks are laid and that if they go in the wrong direction backtracking is easy. Sound Transit's modeling, does *not* take rail bias into account, and assumes buses and trains with the same service characteristics would have the same ridership.
- Land use changes resulting from transit investments: Sound Transit's modeling

also does not assume that land use will change because of improvements in high-capacity transit. However, the experience of other cities confirms that rail, in particular, has the potential to shape land use both because of its ability to bring large numbers of people into dense urban centers without taking up the space required for freeways, streets and parking lots, and because developers have confidence in rail's permanence and so are willing to build their projects around rail stations.

The 2030 transit ridership forecast includes the effects of population and employment growth, and the transportation and transit projects included in the Puget Sound Regional Council's Metropolitan Transportation Plan. The ST2 projects assumed to be implemented by 2030 include:

- Light rail north from the University of Washington to 164th/Ash Way, south from SeaTac to Tacoma, and east to Overlake Transit Center on the Microsoft campus.
- Expanded parking and improved Sounder stations at Puyallup, Sumner, Auburn, Tukwila, Edmonds and Mukilteo.
- Redeployment of ST Express bus service as the rail system expands, new ST Express facilities in Bothell and Renton, and an ST Express service enhancement fund to add service on the most heavily used routes.

Travel Time Savings

Table 4 and Table 5 illustrate the expected travel time savings for the region's drivers and transit riders, achieved by the investments included in the ST2 plan.

Looking ahead to 2030, after ST2 investments are completed, the region's transit riders are projected to save over 20 million hours a year. For the regular transit rider, this means a travel time savings of about 72 hours a year.

This analysis is based on two scenarios for traffic in 2030: one with ST2 projects and one without ST2 projects. Accordingly, the numbers are estimates based on best practices. In the simplest terms, every car not driven because the driver chooses to

travel by transit either reduces congestion or leaves space for another vehicle.

Highlight

The estimated combined annual travel time savings for drivers and transit riders is approximately 62 million hours.

Table 4:

Projected Travel Time Savings for Drivers and Freight

	Drivers & Freight 2030 with ST2
Reduction in Annual Vehicle Miles Traveled (Switched to Transit)	339 million
Annual highway delay reduced	40 million hours

Table 5:

Projected Travel Time Savings for Transit Riders

	Transit Riders 2030 with ST2
Daily Hours Saved	71,000
Total Annual Hours Saved	22 million

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Travel times and number of transfers between selected centers

Looking at specific trips between the region's centers is one way to understand how ST2 will benefit riders who are taking the bus today, as well as future riders who will be attracted to transit because of the improved speed and reliability they will experience on ST2 services.

Buses get slower every year: Within the Sound Transit district, bus travel times slow by about 1% per year, mostly due to more congestion on roads and increased pedestrian activity in centers (vehicles making right and left turns at intersections block other traffic while they wait for people crossing the street). Without improvements in transit, therefore, existing bus travel times would be expected to be about 23% slower by 2030.

For example, the Bellevue-to-Airport existing bus travel time is 53 minutes for ST Express route 560 via I-405 and I-5. Without the light rail investment the bus travel time using Route 560 would be expected to increase from 53 minutes today

to about 65 minutes by 2030. After light rail is extended across Lake Washington, however, the same trip is expected to take 55 minutes, with a transfer in Seattle. While that's two minutes longer than it takes today, it's a savings of ten minutes over the time it would otherwise take to make the trip by bus in 2030.

Table 6 compares existing transit travel times to future transit travel times after implementation of ST2. The existing times are actual measured travel times, not the travel times shown on the bus schedules, which cannot be relied on from hour to hour and day to day because of traffic congestion on the roads.

Shorter wait times are not included in travel time estimates. These travel times *do not include* the effect of higher frequencies for rail systems. Typical train frequencies on all branches in 2030 will be at least every 10 minutes. Shorter wait times and transfer times also reduce total trip times for riders.

Table 6 : Projected Transit Travel Times & Transfers Between Selected Centers

	Existing Transit Time	Expected 2030 time w/out ST2*	2030 ST2 Plan Time	Expected Time Savings
Lynnwood - UW	39 min	49 min	21 min	28 min
Lynnwood - Seattle	42 min	45 min	28 min	17 min
Bellevue - Airport	53 min	65 min	55 min (1)	10 min
Bellevue - Seattle	31 min	34 min	20 min	14 min
UW - Bellevue	32 min	37 min	31 min	6 min
Overlake - Airport	80 min (1)	96 min (1)	66 min. (1)	30 min
Capitol Hill - Overlake	55 min (1)	63 min (1)	38 min	25 min
Tacoma - Airport	55 min	66 min	37 min	29 min

() = number of transfers

*Bus travel times can vary greatly. The times shown for 2030 are expected averages, after accounting for continuation of historic trends in bus speed degradation, as reflected in PSRC 2030 traffic forecasts.

Transit trips to selected centers

Table 7 presents the percentage of work and college trips made by transit riders to a selected set of regional centers.

The existing transit share data is from the 2000 U.S. Census Journey-to-Work survey as compiled by the Puget Sound Regional Council (PSRC).

Percentages include ridership on fixed route, fixed schedule transit service. Excluded are paratransit, dial-a-ride, carpools and vanpools, etc.

Table 7: Projected Activity Center Mode Splits			
	Existing Transit Share of Work & College Trips	ST2 2030 Share of Work & College Trips	Percent Change from Existing to ST2 2030
Lynnwood	3 %	4 %	+ 33%
Northgate	6 %	9 %	+ 50 %
University District	20 %	33 %	+ 65 %
Bellevue CBD	8 %	12 %	+50 %
Seattle CBD	40 %	50 %	+ 25%
Federal Way	2 %	4 %	+ 100 %
Tacoma CBD	4 %	5 %	+ 25 %
Average	15 %	21 %	+ 40%

Other benefits of ST2

Cost savings for transit riders

According to the U.S. Census Bureau, in 2003 the average family in our region spent 18% of its disposable income on transportation, more than any other expenditure except housing. The average household has 2.3 people, owns 2.4 cars, and spends \$9,350 a year on transportation.

The most expensive cost of driving is the cost of owning and insuring a vehicle. A family that can own one less car because of better transit service can save thousands of dollars a year on transportation. Even a family that owns the same number of cars, but drives less, stands to save on vehicle operating costs – gas, oil, parking, tires and maintenance.

For those commuting by transit to places with high parking costs, the savings in parking alone are substantial. For example, a monthly Puget Pass good for unlimited \$2.00 rides (the two-zone peak hour fare on King County Metro) costs \$72. According to the PSRC, the average cost of parking in the region's downtowns in 2006 was \$138 a month -- \$66 more than bus fare. For the average transit commuter to downtown Seattle, savings in parking alone would be approximately \$800 a year, on top of the savings on gas and other vehicle operating costs.

O&M costs, fare revenue and operating subsidies

Operating Revenue / Operating Expense Ratio (OR/OE)

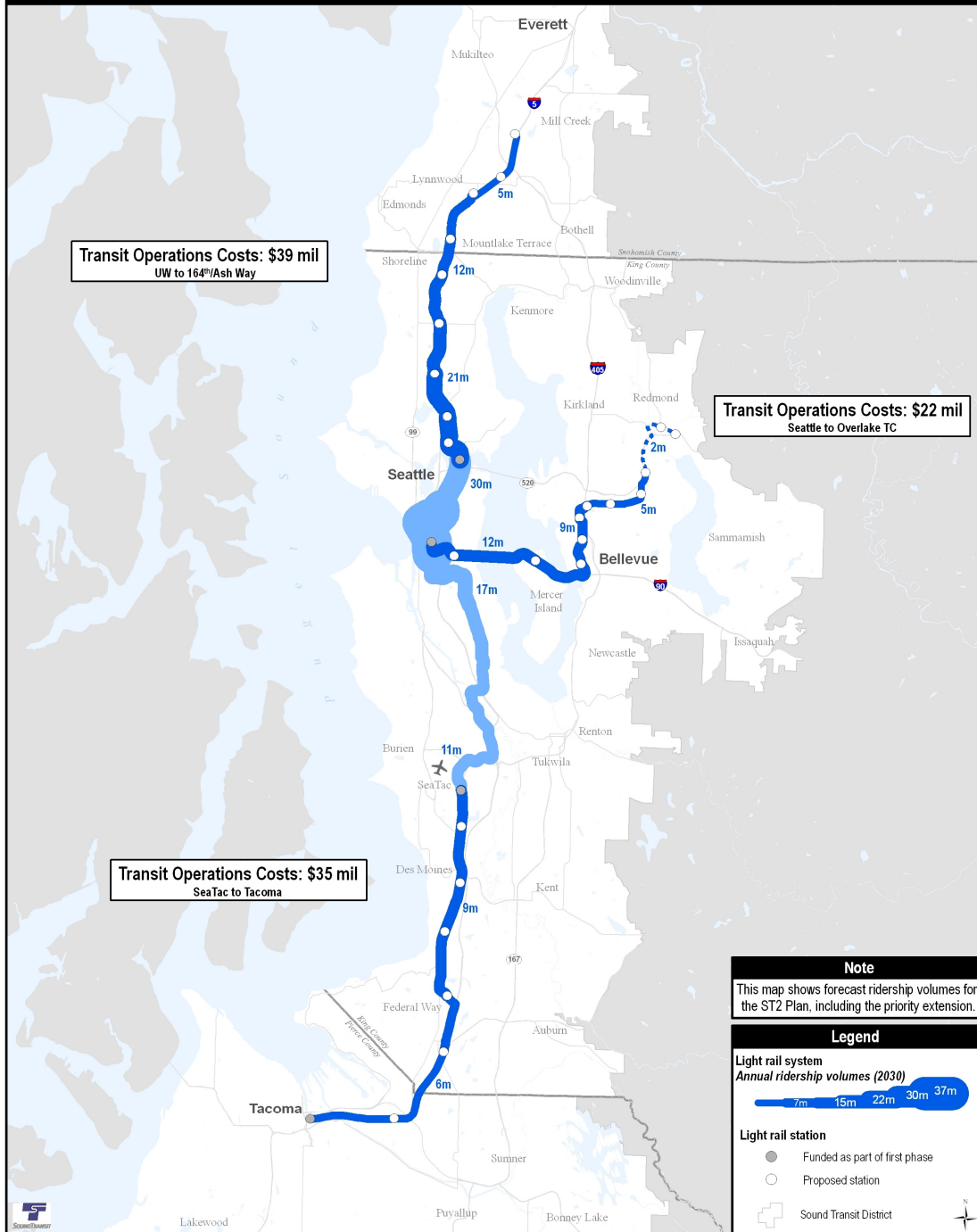
Table 8 shows the forecast ratio of operating revenue to operating expense by service in 2030. This ratio is the operating revenue (primarily fares) divided by the costs of operating Sound Transit's services.

Table 8: Sound Transit's Total Forecasted Operating Revenue/Operating Expense Ratio in 2030				
	Annual Riders (millions)	Transit Operations Cost (2006 \$millions)	Operating Revenue (2006 \$millions)	Farebox Recovery (OR/OE)
Link light rail	95	\$183	\$ 87	47%
Souder commuter rail	4	\$ 39	\$ 9	23%
ST express bus	9	\$ 67	\$ 11	16%
Sound Transit Total	108	\$289	\$106	37%

Operating Costs and Ridership on each ST2 Light Rail Extension

Map 1 illustrates the annual transit ridership volumes in 2030 on each of the three light rail extensions proposed in ST2. The annual system operating costs allocated to each of these ST2 extensions is also shown.

Map 1: ST2 System Plan - Annual Rail Ridership and Transit Operations Costs (2006\$)



Cost effectiveness

Table 9 reflects the annual O&M cost of the ST2 plan per additional rider over the cost of the existing system.

Table 9: Annual Projected Cost Per ST2 System Rider & New Rider (all in 2006\$)	
	With ST2 in 2030
ST2 transit operations cost (millions)	\$96
ST2 capital cost (millions)*	\$468
ST2 riders (millions)	51.0
New transit riders (millions)	22.2
ST2 transit operations cost per ST2 system rider	\$1.88
ST2 capital cost per ST2 system rider	\$9.18
ST2 transit operations cost per new transit rider	\$4.32
ST2 capital cost per new transit rider	\$21.08

* Note for Table 9: Annualized ST2 capital cost is the \$10.84 billion total capital cost discounted at 3 percent over 40 years.

Possible Extension to Downtown Redmond

Table 9 costs do not include a possible extension from Overlake to Redmond. If an extension into downtown Redmond were to be completed within the time frame of this plan, the annual ridership in Tables 2 and 3 would increase by about one million and annual transit operations costs would increase by about \$7 million. The measures shown in the remaining Tables 4 through 9 would not significantly change.

Comparing the capacity of rail systems and highways

Highway capacity

The capacity of a single highway lane is defined as the highest number of vehicles that can pass a single point in an hour in a lane experiencing a stable flow of traffic.

The Washington State Department of Transportation calculates that maximum freeway capacity – about 2,000 vehicles per hour per lane – is achieved at speeds of about 40-45 mph. When the speed falls to 30 mph, capacity can be reduced to as few as 700 vehicles per lane per hour.

Because the number of people per car is generally lower during commute hours than at other times, averaging about 1.1 people, the theoretical capacity of a single lane in the peak hour is 2,200 people. However this assumes traffic moves at about 40-45 mph with perfect free flow conditions. At higher speeds the longer distances between vehicles reduce the capacity of the freeway, and at slower speeds the conflicts between vehicles – that is stop-and-go traffic – also reduce capacity.

Other factors affecting capacity include collisions, disabled vehicles, spills and other events that impede the normal flow of traffic, as well as poor weather conditions that reduce visibility.

WSDOT tracks peak period highway performance in central Puget Sound for 35 different city-to-city commutes. Between 2003 and 2005 travel times worsened for 33 of these 35 commutes. Ironically, the slower the travel speeds due to congestion the lower the capacity of the freeway links on which the congestion occurs; that is, the greater the demand for travel, the more

likely it is that fewer vehicles will be able to use the roadway. According to WSDOT annual system performance reports, particularly bad locations include:

- I-5 at I-90 which operates at less than 40% capacity for over 10 hours a day
- I-5 near Northgate which operates at about 70% capacity for almost 10 hours a day
- I-405 at SR 169 in Renton which operates between about 50% to 60% capacity for 14 hours a day

Bellevue-based commutes are the worst

The worst congestion problems in 2005 were for people commuting to and from Bellevue for work. During the average evening, the Bellevue to Tukwila commute experienced congestion and loss of capacity for five hours and 35 minutes, and the Bellevue to Seattle SR-520 commute experienced congestion and loss of capacity for four hours and 50 minutes.

Highlight

For the first time, between 2003 and 2005, WSDOT found that on several freeways in the central Puget Sound region, peak period vehicle volumes are dropping because the freeways are so congested and travel speeds are so slow that peak freeway capacity is declining.

Link Light Rail Capacity

The capacity of rail transit is a combination of the size of the vehicles, how frequently they run, and a practical consideration of how many people choose to ride.

As with highway capacity, when speaking of rail capacity the important measure is the number of passengers that can be carried during the peak period, when the service is most in demand. This is usually referred to as “peak passengers per hour in the peak direction.” Looking at projected ridership for Link light rail in 2030, three years after ST2 system build-out, we see that it will have the capacity to continue to meet growing demand well into the future.

The per-hour and all-day passenger moving capacity of the ST2 light rail system is quite large, especially in comparison to a roadway of similar width with mixed traffic. While no rail transit system runs fully loaded 24-hours a day, the difference between the ultimate system capacity and the ridership forecast shortly after opening represents the a reserve of capacity for accommodating a large amount of future ridership demand in the decades after the system is built. Table 10 below presents the hourly passenger capacity of the ST2 light rail system at points in the system with varying frequencies of train service, at three different loading standards: all passengers seated, a comfortable level of standing passengers and a “crowded” load that might only be accommodated during peak times for short segments such as a major event situation.

Table 10: Light Rail System Capacity (passengers per hour per direction)				
Peak Frequency (Minutes)	4-Car Trains per Hour	Seated Capacity (74 per car)	Comfortable Capacity, (150 per car)	Crowded Capacity (200 per car)
2	60	8,880	18,000	24,000
4	30	4,440	9,000	12,000
6	20	2,960	6,000	8,000
8	15	2,220	4,500	6,000

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As Link is extended to Northgate, and then to 164th/Ash Way, the number of riders adding to peak ridership will increase with each additional station served.

Leaving downtown Seattle going south, half the trains will be routed east across Lake Washington to Bellevue and Redmond, and half the trains will be routed south to

SeaTac, Federal Way and Tacoma. The downtown tunnel can support train headways as low as two minutes, but the 2030 ridership would only require headways in the 3 to 4 minute range. Table 10 shows the capacity of the system, but ridership is not expected to reach that level until well beyond 2030.

System reliability

Reliability means arriving at the same time every time, regardless of gridlock on the roads or snow on the ground. Reliability is a critical factor in how people plan their travel and budget their time. Transportation system reliability has continued to decline in the Puget Sound Region for several decades, both for car drivers and for transit riders. This is primarily related to increases in the severity of traffic congestion, and in the greater likelihood of congestion occurring at any time of day or on any day of the week.

When a person needs to arrive somewhere by a specified time, whether to be on time for work, or to catch a plane or to watch a child's soccer game, they know that if the trip involves one of the region's most congested corridors at peak hours they should allow a great deal of extra time to get there.

Increasingly, the problem of congested peak hours has spread to all hours of the day and even to the weekends. Buses are caught in the same traffic as cars and trucks. Freeway HOV facilities speed buses, but even these ramps and lanes often break down in the crush of peak period traffic and bad weather. Sounder commuter rail and Link light rail, however, although they share some grade crossings with vehicles, operate on their own rights-of-way free from conflicts with other traffic.

Highway reliability

Reliability on streets and highways is affected by many things including crashes,

stalled vehicles and weather conditions, but the most important factor in the central Puget Sound region is the volume of traffic and delays caused by congestion.

WSDOT tracks reliability on the freeways for major commutes between pairs of cities, and calculates "95% reliable travel times," that is the amount of time a driver needs to plan for to be sure of arriving on time 19 times out of 20.

WSDOT data, compiled annually in major corridors, shows reliability on the regions highways to be steadily declining.

Highlight

Between 2003 and 2005, the duration of afternoon peak period congestion stretched from 2 hours to 3 hours and 15 minutes between Seattle and Redmond. Between Bellevue and Redmond it grew from 1 hour and 45 minutes to 3 and half hours.

Transit reliability

Transit reliability is related to a number of factors, but most significantly to the portion of the transit trip that occurs on a transit-only facility, that is rail or bus operating in its own right-of-way, away from interference with other traffic. **Chart 1** illustrates the change in reliability that will be experienced by the region's transit riders with ST2.

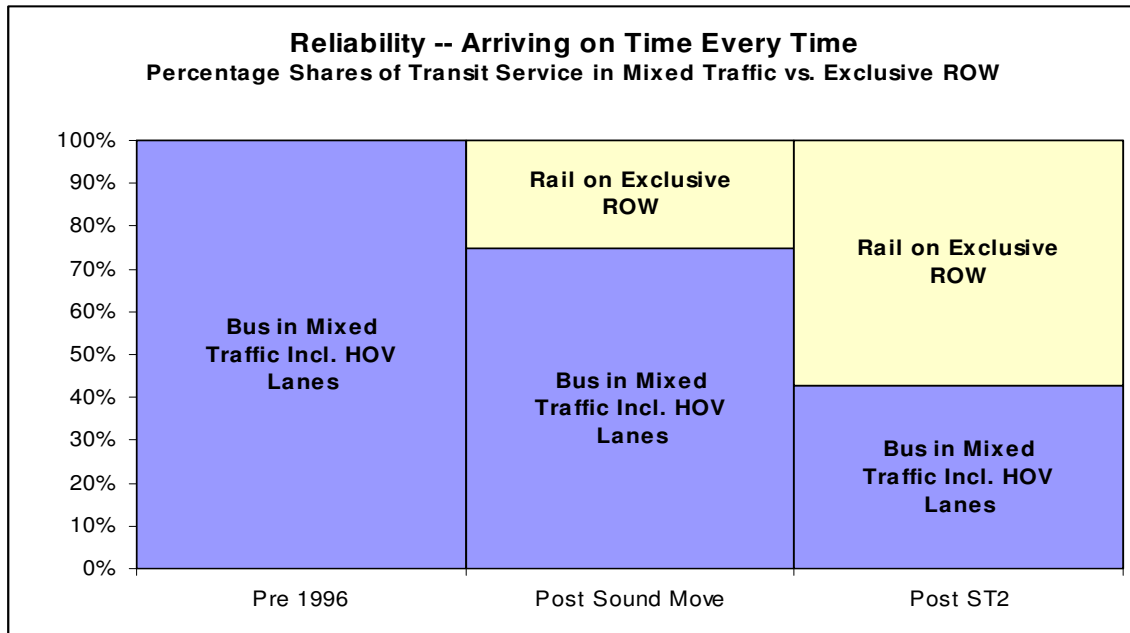
Sound Transit's Link light rail operates entirely on exclusive right-of-way. In addition, most of the right-of-way is grade separated with no interference from traffic. Even where there is no grade separation, Link light rail operates in exclusive right-of-way with signal preemption. This allows the

service to maintain a very high level of reliability, at all times of the day.

Prior to *Sound Move*, 100 percent of the region's transit travel occurred on buses operating in mixed traffic. When the Sound Move investments are completed, 25 percent of the region's transit travel will occur on high reliability rail lines.

Looking ahead to the completion of ST2, the share of all transit riders in the region who are on Sound Transit services grows from 12 percent today to 65 percent in 2030. This means that over five times as many of the riders will travel on vehicles that don't get stuck in traffic, regardless of the time of day, day of the week, weather conditions, or other factors.

Chart 1: ST2 Transit Reliability



Sound Transit 2

**The Regional Transit System Plan
For the Central Puget Sound Region**

*Appendix D: Social, Economic and
Environmental Impacts; Performance
Characteristics by Mode; and
Integration with Regional Land Use*

Sound Transit 2 The Regional Transit System Plan

Sound Transit 2

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Environmental, social and economic impacts

Environmental Impacts

In June 2005 Sound Transit issued a supplemental final environmental impact statement (SEIS) on the Regional Transit Long-Range Plan. The 2005 SEIS builds on and supplements the 1993 EIS prepared for the Regional Transit System Plan. It addresses newly available information on existing environmental conditions, and it evaluates the environmental impacts of and potential mitigation measures for adopting and implementing an updated Regional Transit Long-Range Plan, including specifically the development of the ST2 Plan investments.

The ST2 Plan investments will have a positive impact on the region's environment, including reduced energy consumption and air pollution and improved water quality. Sound Transit's Supplemental Environmental Impact Statement (SEIS) for the Long-Range Plan details these impacts for different ranges of long-term investments; the ST2 Plan represents the aggressive end of these investment ranges. An overview of the impacts for air quality, water quality and energy use are presented here. In addition, the SEIS details impacts in the areas of transportation (see Appendix C of this plan), environmental health, ecosystem, aesthetic quality, parks and recreation, historic and cultural resources, and other areas.

The transportation sector represents over 50% of the regional carbon footprint, significantly more than the

national average. Overall, the ST2 Plan represents an important step towards addressing the challenge of global warming by offering a reliable alternative to motor vehicle travel. The ST2 Plan will reduce vehicle miles traveled on our region's roadways which in turn reduces greenhouse gas emissions such as carbon dioxide. Internal estimates predict that implementation of the Sound Transit System Plan will result in a 1.0% reduction in Vehicle Miles Traveled (VMT) in 2030, or about 330 million vehicle miles per year from baseline,¹ by providing an alternative to single occupancy vehicle use.

In addition, the ST2 plan fosters transit-oriented development around stations, helping provide for compact, urban, sustainable communities that have relatively smaller carbon footprints.

Furthermore, the Sound Transit Board is committed to exploring ways to reduce to the maximum extent practicable the greenhouse gas emissions during construction and operation of the ST2 Plan.

¹ This is not the total savings due to all transit, just the net difference between the 2030 Plan and the 2030 Baseline (where Baseline = Sound Move with the UW-Airport line and the 2 Sounder lines).

Air Quality

Forecasts for increased 2030 ridership and resulting changes in travel by all modes indicate that ST2 Plan improvements would reduce total regional vehicle miles traveled and vehicle hours traveled in 2030 with a corresponding reduction of motor vehicle emissions. With the ST2 Plan, both the number of vehicle miles traveled and the level of congestion, as measured by hours of vehicle delay, would be reduced. As a result, overall mobile source pollutant emissions, including carbon monoxide, nitrogen oxides, volatile organic compounds, hazardous air pollutants, and greenhouse gases, within the plan area are expected to be lower compared to the No Action Alternative that was evaluated.

Sound Transit's light rail is electric powered and the use of electric vehicles will reduce transit vehicle emissions.

Sound Transit's regional transit providers are retrofitting their older bus fleets with particulate filters that remove approximately 90 percent of the diesel particulate that the buses previously released.

Sound Transit uses modern diesel commuter rail locomotives that produce substantially less air pollution than the majority of locomotives in use today. Sounder trains would produce approximately 30 percent less aggregate air pollutants per rider than three person carpools.

When compared to taking no action to improve the transit system, the ST2 Plan will result in reductions of carbon monoxide, volatile organic compounds,

and nitrogen oxides compared to the no action alternative that was evaluated.

Water Quality

Potential water quality impacts include: (1) new impervious surfaces, (2) new pollutant-generating impervious surfaces, (3) flood plain fill, and (4) culvert extensions. The overall impact of ST2 projects on increasing the amount of pollutant-generating impervious surfaces will be relatively minor compared to the current amount of pollutant-generating impervious surfaces in the region, as well as compared to possible alternate investments in road capacity to carry the same number of trips.

Energy Use

When compared to taking no action to improve the transit system, the ST2 Plan will result in a reduction in regional energy use for transportation.

Mitigating Local Impacts

In developing the projects for the ST2 Plan, the costs of environmental impact mitigation were included in the cost estimates for each project. For example, the Link extension from Seattle to Bellevue cites potential parkland, historic and wetland impacts and the need for environmental mitigation. For those projects in the early stages of development, detailed analysis of impacts and potential mitigation measures will be finalized in project environmental documents.

In addition to mitigating specific project impacts, ST2 projects also have the potential to mitigate some of the major impacts of other anticipated regional transportation projects. In the

North Link corridor, for example, there is a major resurfacing (and possibly lane reconfiguration) project planned for I-5. Depending on the schedules of the two projects, Link to Northgate could provide an alternate route for travelers who might otherwise be caught in the additional congestion associated with this construction.

Environmental Management System

Sound Transit adopted a comprehensive Environmental Management System (EMS) in April, 2004. The EMS consists of proactive management processes and procedures to document, assess and improve environmental compliance and performance. It incorporates environmental ethics into business operations and identifies environmental stewardship as a responsibility of all employees. Sound Transit's Environmental Policy, which serves as the foundation of the EMS, commits the agency to being an environmental leader in the State of Washington and to "the protection of the environment for present and future generations as we provide high-capacity transit to the Puget Sound region."

Social Impacts

The ST2 Plan will reduce our reliance on automobiles by improving average citizen's ability to use mass transit to travel through the most congested corridors during rush hours.

Mobility and Accessibility

Mobility and accessibility is a challenge for everyone, and particularly so for people who do not own cars or for whom the daily costs of driving are a financial hardship. The addition of 49

miles of light rail, plus enhanced Sounder and ST Express systems, will expand opportunities for low income workers to commute to their jobs, and for those who are unable or who prefer not to drive to travel to and from a variety of destinations throughout the region. Workers living along or near Link, Sounder, or ST Express routes and stations and traveling to jobs in the off-peak direction, for example at SeaTac Airport, Northgate Mall, or other locations, will have the same frequent reliable service as travelers to downtown Seattle or downtown Bellevue.

For low income households, ST2 investments may make it possible to reduce the number of cars per household, and/or to reduce the annual miles driven and costs of operations and maintenance. For those who are unable to drive or cannot afford an automobile, ST2 investments will greatly expand their ability to travel quickly and reliably throughout the region, whether they live along a Sound Transit route, or connect via local transit or demand-response services.² Mobility and accessibility can be a particular challenge for elderly people and people with physical disabilities or limitations. For many senior citizens and persons with disabilities, transit often offers the only

² About 9 percent of the region's households are classified as low income, and of these households 26 percent do not have access to a car. (Of all households in the region only 7 percent do not own or have access to a car.) About 17 percent of the population is disabled, and by 2040 almost 17 percent will be seniors. Compared to others, all of these individuals tend to have lower auto ownership rates, lower incomes, and be less likely to have a car available to them for their trips.

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option for getting around. Increasing the extent of the light rail system can significantly improve mobility for these citizens.

Other social impacts of ST2 include support for the urban centers developed in Vision 2020 and now contained in county and local government comprehensive land use plans and policies in the region. While the urban centers concept was developed primarily to reduce traffic congestion and air pollution growth, it also has potentially beneficial social impacts in promoting pedestrian-oriented neighborhoods throughout the region, which in turn will increase social contacts within communities and strengthen community spirit.

Economic Impacts

The central Puget Sound region is not unique in its dependence on transportation to fuel its economic engine. What sets the central Puget Sound region apart from many other urbanized areas, however, are the extreme constraints that geography and topography place on the development of transportation corridors. For example, about a quarter of a million people cross Lake Washington every day using the only two routes available, I-90 and SR-520. Here, as elsewhere, the most congested sections of the freeway system experience gridlock for hours every day.

The investments planned as part of ST2 will not end congestion on the freeways. However, they will provide an alternative for drivers caught in traffic, free up road space for those with

no other alternatives (including freight), and provide new high capacity alternatives for those who are unable, unwilling or who can't afford to drive.

ST2 will provide major new rush hour capacity to and from the region's most congested destinations, as well as all-day, two-way reliable connections for commuters, shoppers, and other travelers.

The economic benefits of the ST2 plan will be realized in many ways, some of which can be quantified and others of which are more difficult to measure. Taking into account the full costs of the ST2 Plan, Sound Transit estimates that the readily quantifiable benefits will be about 2.7 times the costs.

Quantifiable benefits

ST2 Plan quantifiable economic benefits include:

- Travel time savings for transit riders;
- Mobility benefits for non-transit users including commercial vehicles;
- Reductions in vehicle operating costs, including parking costs; and
- Reductions in accident costs and in pollution, noise and energy use.

Highlight

A benefit-cost analysis prepared for the light rail element of the Plan shows an expected rate of return of about 9% with cumulative benefits likely to exceed costs by over \$16 billion.

Travel time savings

Travel time savings are shown in Appendix C (see page C-9) for both transit riders and non-transit users. These benefits constitute the largest share of the benefits of the ST2 Plan.

Vehicle cost savings

In addition to saving time, the region will save in vehicle ownership, operating, and parking costs.

Savings in environmental costs

The ST2 investments can create environmental benefits by reducing air, noise, and water pollution associated with auto travel. In addition, transit travel is more energy efficient than auto travel, creating economic benefits associated with energy conservation.

Benefits Difficult to Quantify

Job Creation and Retention

Improving the capacity and reliability of the transportation system directly supports the region's economy. It gives employers access to a broader base of workers, and gives individuals greater choice in where to live, work, recreate,

shop and conduct personal business. It gives businesses better access to goods and services, and increases the ability of people to connect with each other and conduct business.

A 1999 study done for the American Public Transit Association concluded that business gains in sales are 3 times the investment in transit capital – a \$10 million investment yields \$30 million in sales.

In Portland, Oregon, Tri-Met estimates that over \$6 billion in development has occurred within walking distance of the MAX light rail stations since 1980.

In Dallas, property values near light rail stations are 13% higher than elsewhere, and in San Diego they are 17% higher.

While these types of calculations are difficult to replicate for a project that is not yet built, in city after city across the United States, the economic benefits of past investments in transit infrastructure are clear.

ST2 projects will create thousands of jobs in project management, design and construction, as well as ongoing jobs in operations and maintenance. If the dollars invested in ST2 were spent elsewhere it would also create jobs, but the portion of the project costs that will be covered by federal grants would not otherwise come to the region. In 2006, USDOT estimated that 47,500 jobs are created for every one billion dollars invested in transportation.

Sound Transit's Guiding Principles provide for: workforce diversity reflective of the region; maximum use of

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local businesses; maximum use of small businesses; and maximum use of minority, women and disadvantaged businesses. There is also a requirement that a minimum percentage of labor on Sound Transit projects to be performed by apprentices, with requirements for minority and female workers.

Transportation System Reliability

Recent research on travel reliability shows an increased awareness of the importance of the reliability of transportation systems in large metropolitan areas. That awareness is heightened as existing transportation systems suffer increasing frequency of breakdowns when operating at capacity. As the importance of reliability grows, so does transit ridership, yielding even greater travel time savings to even more people.

Added capacity for travel

Whether going to work, school or shopping, or simply to visit friends, the ability to travel has economic benefits. ST2 adds major new travel capacity in some of the region's most congested corridors in all three counties. The added capacity for trips throughout the region will benefit individual travelers and the region as a whole. Additional

information on transit capacity is shown in Appendix C.

Mobility for all

Improvements in transit provide broad benefits to those who cannot afford to own and operate a car, or who cannot or do not wish to drive, expanding opportunities for work, education, medical care, shopping, and other opportunities that require travel. These benefits also accrue to other taxpayers.

Performance characteristics by mode

System and service philosophy and impacts

Sound Transit's role is to provide the central Puget Sound with a regional network of high-capacity transit services. As defined by Sound Transit's enabling legislation, high-capacity transit means service operating principally on exclusive rights-of-way and providing a substantially higher level of passenger capacity, speed and service frequency than public transit operating on highways and city streets in mixed traffic.

This role is further defined by the Puget Sound Regional Council's land use plan, Vision 2020, and the Metropolitan Transportation Plan, which together define a goal to establish a region-wide transit system that connects regional growth centers, provides seamless connections with local transit and ferries, and supports concentrated development at and around stations.

Within this framework, the ST2 Plan proposes to continue and expand the regional high-capacity network established in Sound Move. The Link light rail will add 49.5 miles extending to Snohomish and Pierce counties and across Lake Washington to King County's eastside. The ST2 plan will add new or improved Sounder commuter rail stations and parking facilities. The ST2 plan also includes new or expanded ST Express bus facilities in Bothell, Renton and Burien. Consistent with the major expansion in rail services, some existing express bus routes will be replaced with rail.

Service characteristics for Sound Transit's three modes are consistent with the mandate to operate high-capacity transit with frequent, fast service.

ST Express Bus

ST Express operates frequent, all-day bus service on major corridors between centers, with half-hour headways or better, from about 6:00 in the morning or earlier until about 10:00 at night. ST Express buses operate on freeway HOV facilities where they are available, including a series of freeway direct access ramps built as part of Sound Move, which improve speed and help ensure reliability.

ST Express buses serve major urban centers as well as outlying park-and-ride lots and transit centers, and they connect to Sounder and existing and future Link stations. All buses carry bicycles; some serve mixed-use transit centers with commercial and residential development integrated into the center.

Sounder Commuter Rail

Sounder commuter rail currently operates between Everett and Tacoma and, when the Sound Move investments are completed, will extend to South Tacoma and Lakewood.

By the end of 2007, Sounder commuter rail will operate six daily round trips between Tacoma and Seattle and three daily round trips between Seattle and Everett. Eventually, trains will operate approximately every half

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hour during the morning and afternoon weekday peaks. Special service also serves Mariners baseball and Seahawks football Sunday home games.

Fifty-eight bi-level passenger cars seat 140 passengers each, with room for bikes and wheelchairs. Amenities include work tables, power outlets, cup holders and overhead storage. Maximum speed is 79 mph, and the travel time from Everett to Seattle or Seattle to Tacoma is about an hour. There are currently 9 stations in service; when Sound Move is completed there will be 12 stations in service. ST2 investments will improve some stations and add parking.

Link Light Rail

Tacoma Link currently operates electrically-powered single-car trains between the Tacoma Dome station and downtown Tacoma. At the Tacoma Dome station it connects with Sounder, ST Express, Greyhound and Amtrak, and in downtown it connects with Pierce Transit's local bus service. Tacoma Link serves the University of Washington, the Washington State History Museum, the Museum of Glass, the Convention Center, the downtown business district and the Broadway Theater District. Trains operate every ten minutes.

Central Link, now under construction between downtown Seattle and Sea-Tac International Airport, is a 15-mile electric light-rail line with 13 stations, predominantly on exclusive right-of-way. Initial service will be with two-car trains, but the station platforms can accommodate up to 4-car trains for

future service expansion as demand grows.

When service begins operating in 2009 it is expected that trains will run approximately every 6 minutes during peak hours and every 10 to 15 minutes off-peak and at night. The trip between downtown Seattle and Tukwila will take about 30 minutes. A planned extension to the University of Washington is expected to begin operating in 2016. By 2030 the ridership on Central Link is expected to exceed 110,000 riders a day.

As part of ST2, Link will be extended north to Snohomish County, south to Pierce County, and east across Lake Washington into East King County. The technology will be the same as Central Link, with exclusive and largely grade-separated rights-of-way.

Integration with regional land use planning and transit oriented development

Regional Land Use Planning

ST2 investments are consistent with the vision and goals in the region's land use, growth management, and transportation plans. Light rail, commuter rail and express bus services will carry thousands of people in the region's most dense, most highly congested corridors, and these transit services will deliver people to and from the hearts of the region's downtowns and other activity centers.

Achieving Vision 2020

VISION 2020, adopted by the PSRC in 1990 and updated in 1995 to meet the requirements of the State's Growth Management Act, establishes a regional growth management strategy for central Puget Sound based on defining urban growth boundaries, containing growth within those boundaries, and concentrating new development in multiple centers linked by a high quality transportation network, including high-capacity transit in major corridors.

ST2 will provide an important piece of the transportation components necessary to implement Vision 2020. ST2 supports the Vision's strategy of concentrating growth within urban growth boundaries and supporting that growth with robust mass transportation alternatives such as light-rail, express bus, and commuter rail services. For example, the urbanized portions of Pierce, King, and Snohomish Counties

are within a defined urban growth boundary whose population is expected to increase by one million people by 2030. The employment within that boundary is expected to increase by about 600,000 jobs. ST2 includes high-capacity transit service that will serve over 75 percent of the employment in PSRC designated urban centers in 2030.

Looking ahead to 2030, by which time the region will need to accommodate more than one million new residents, successfully confining growth within urban growth boundaries will depend on the region's ability to develop adequate infrastructure to support more dense development. High-Capacity Transit (HCT) is central to this effort.

Since the initial adoption of Vision 2020, the region has repeatedly affirmed its growth management strategy in adopted regional, county, and city comprehensive plans. The most recent Metropolitan Transportation Plan, Destination 2030 (PSRC 2001), calls for the region's HCT system to continue to develop and expand to help meet growing demand, together with the expansion of all forms of transportation—local transit, carpools and vanpools, ferries, airplanes, automobiles, freight, bicycling, and walking.

Sound Move, Sound Transit's initial phase of regional HCT investments, is already addressing many regional mobility needs. The investments of

Sound Move will continue to provide benefits for decades to come. However, Sound Move was intended to be the first phase of a more extensive regional high-capacity transit investment. Growth has worsened the region's transportation problems and there is a continued need to address HCT planning and investment.

Between now and 2030, population is expected to grow approximately 30 percent, with a projected 35 percent growth in employment and a 30 percent increase in vehicle miles traveled. In recent decades, miles traveled has grown twice as fast as population and four times as fast as employment. Fortunately, future projections show the relative growth in travel moderating compared to the recent past, largely because of the leveling off of certain demographic trends such as the increase in numbers of workers per household.

The region's transportation capacity for all modes has not kept pace with growth, and new growth means that transportation conditions will worsen even further. Many of the region's roads and freeways are already operating at capacity for many hours during the day. With more vehicles on the road, congestion and delay will be more severe and trips will be slower and more unpredictable.

The expanded HCT system in the ST2 Plan will provide an effective and reliable alternative to driving and an efficient way for people to move throughout the region. The expanded HCT system implements an integral transportation component of Vision 2020 and Destination 2030.

Reducing Land Area Devoted to Parking

Extending the regional mass transit system to more of the region's employment centers will enable many more employees to travel to jobs in those centers by high quality transit instead of by car. This will, in turn, reduce the demand for parking in those employment centers. Parking cars in structures requires 300 to 400 square feet per car, which means that a single worker with a car requires about twice as much space as a worker without a car. By reducing demand for parking in urban centers, more land can be devoted to productive economic activity and less to storing vehicles.

Transit Oriented Development

During Sound Move implementation Sound Transit has had a transit-oriented development program. The purpose of this program has been to encourage easy access to high-capacity transit and easy transfers between commute modes, including walking, bicycling, other transit service and, where appropriate, driving. Sound Transit has worked with public and private partners to promote such connections. Sound Transit expects to continue its transit-oriented development program in the ST2 Plan.

Sound Transit and its partners have effectively located transit stations to support and generate transit-oriented development during Sound Move implementation. Notable examples are the Sumner Town Center, the Tacoma Dome District, the Newberry Square Project at the Ash Way Park and Ride

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lot, the Othello Station development in Seattle, and new development and redevelopment around Sounder stations in Kent and Auburn. Virtually every city with Sound Transit projects worked with Sound Transit to develop station area plans. These plans intend that development in and around stations maximize the value of the transit investment to the communities it is designed to serve.

The purpose of Sound Transit's Transit Oriented Development (TOD) program is to promote pedestrian-friendly development around transit stations in order to increase transit ridership, enhance communities, and facilitate complementary development.

The ST2 plan includes 25 new light rail stations and six new or improved Sounder stations. Sound Transit will work with local jurisdictions, partner agencies and private interests to encourage mixed-used, pedestrian oriented development around stations.

Sound Transit will prioritize efforts in communities that are already encouraging increased density through locally-developed zoning and comprehensive plans.

Sound Transit will encourage public-private partnerships on a voluntary basis. Where a partnership cannot be achieved, Sound Transit will, to the extent practicable, incorporate TOD into station planning.

Properly implemented, TOD can reduce auto use, traffic congestion, energy consumption and pollution and reduces the emission of greenhouse gases. TOD can help promote a

sustainable environment while diversifying a community's economic base.

Sound Transit TOD program goals are intended to calm traffic, manage parking demand, and include streets designed to promote a sense of community within the station area. Project design emphasis will be focused on facilitating station access for pedestrians, bus riders, bicyclists, station drop-offs, and where appropriate, parking.

Sound Transit typically begins the TOD process early in the project development process, usually during the planning and environmental phases.

Sound Transit has a variety of tools it can use to encourage TOD. One is facility design and location. Another is through real estate transactions. A third is through service planning. All of these tools necessitate active cooperation with stakeholders and partner agencies.

In the case of real estate transactions, it is important to note that Sound Transit does not have authority to purchase property and engage in speculative development. All property transactions involving Sound Transit must follow a rigid set of procedures designed to protect the rights of property owners.

Where a willing seller is present, Sound Transit may acquire additional property in order to facilitate TOD opportunities consistent with local land use plans and regulations.