

Feasibility Report Regarding an Aerial Gondola from West Seattle

April 2022



Executive Summary

Purpose

This report assesses the feasibility of using gondola technology as an element of the regional high-capacity transportation system being implemented by Sound Transit (the Central Puget Sound Regional Transit Authority). Sound Transit is responsible for planning, constructing, and operating high-capacity transit within the Sound Transit district boundaries. The Sound Transit district generally covers the areas of existing urban development and planned urban growth in portions of King, Pierce, and Snohomish counties.

The report addresses the West Seattle SkyLink proposal, including technical considerations and other factors. It also describes Sound Transit's prior planning, evaluation, and environmental work. That work includes Sound Transit's Regional Transit Long-Range Plan, its system plans, and associated environmental review.

Key Findings

Three principal conclusions are reached in this report regarding the use of gondola technology to implement Sound Transit's regional high-capacity transit system:

1. Gondola/aerial tram technology is infeasible for this corridor due to significant technical limitations, including:
 - a. Integration and compatibility with the existing Sound Transit light rail system especially as it relates to supporting convenient and seamless passenger trips on the system.
 - b. The capacity of gondolas/aerial trams to serve projected ridership as well as both demand for surge events (e.g., sporting events) and future regional demand;
 - c. The ability to expand regional high-capacity transit from any gondola/aerial tram segment in a manner consistent with Sound Transit's Regional Transit Long-Range Plan.
2. Sound Transit continues to agree with our previous analysis that gondolas/aerial trams are not an appropriate regional high-capacity transit technology "because they operate on a local circulation level, lack regional applications, and each application would require new supporting facilities and services."
3. Sound Transit is not authorized to use the ST3 tax revenue approved to construct a light rail system to instead construct a gondola system without additional voter approval.

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TECHNOLOGY CONSIDERATIONS AND COMPARISON

This section of the report considers the following attributes of gondola/aerial tram technology and service and compares it to light rail transit (LRT) technology, which is the predominant HCT mode of the ST system plans. The following attributes are compared:

- System integration
- Passenger capacity and experience
- Operating speed and travel times
- Station spacing and alignment length
- Reliability
- Implementation, operational, and maintenance requirements
- Regional system compatibility

| <i>System integration</i> | |
|---|---|
| System integration refers to how well the transit technology works with existing transit modes in the region. | |
| <i>Gondola/aerial tram</i> | <i>Light rail (Sound Transit)</i> |
| Different technology from existing public transit systems (LRT, commuter rail, BRT, streetcar, and express/local bus). Connections to transit system would require transfers and co-location of gondola/aerial tram stations with existing/planned LRT station or other transit centers/major stops. | Seamless integration with existing and planned Link LRT lines. LRT stations require transfer facilities at/near stations for connections to other public transit modes. Capacity constraints of existing and planned LRT lines may limit the ability of new lines to share tracks along certain high-frequency sections of the system. |

| <i>Passenger capacity and experience</i> | |
|---|--|
| Passenger capacity and experience refers to the number of passengers that can be accommodated as well as considerations related to passenger experience of each technology. | |
| <i>Gondola/aerial tram</i> | <i>Light rail (Sound Transit)</i> |
| Gondola: Up to 35 people per cabin though typically less in terms of seated capacity. Aerial Tram: Portland Tram cars (2 cars on system) can hold 78 people, mostly standing. Gondola's multiple cabins can be used concurrently, for total capacities typically around 2,000 people per hour per direction and with certain systems seeing higher capacities; tram capacity is more limited. | 150 seated and standing per car under normal conditions. Up to 200 passengers per car during peak demand conditions. 600 to 800 passengers for a consist of 4 cars Maximum (3-minute headways; 4-car consist) has a total capacity 12,500 for normal conditions and 16,000 for peak demand conditions per hour per direction. |

| Operating speed and travel times | |
|--|--|
| Operating speed and travel times refer to the speed and time that these modes operate. | |
| Gondola/aerial tram | Light rail (Sound Transit) |
| Average: 10-15 mph. Recent installations can achieve up to 20 mph. Slower speed typically results in longer travel times between destinations. | Average: 20-40 mph. Maximum: 55 mph. Average speed varies depending on operating environment, geometry, and station spacing. |

| Station spacing and alignment length | |
|---|--|
| Station spacing and alignment length refers to the typical distance between stations and the typical length of each technology's system. | |
| Gondola/aerial tram | Light rail (Sound Transit) |
| As needed. Average 0.5 miles for urban systems, with up to 1.5 miles between stations on some installations. Typically, only two stations per line, within a couple miles of each other, principally accommodating short trips. Lines with multiple stations are in operation (e.g., Mexicable has 7) or in planning (e.g., Edmonton and Albany). | From 0.25 miles to 5.5 miles between stations. Current light rail system is ~25 miles long with multiple extensions under construction and in planning/design. The West Seattle extension is 4.7 miles long with four new stations proposed between SODO and West Seattle. |

| Reliability | |
|---|--|
| Reliability refers to the expected consistent schedule performance of each transit technology. | |
| Gondola/aerial tram | Light rail (Sound Transit) |
| Dedicated, elevated running ways avoid congestion. Excessive wind speeds and severe storms have the highest impact to reliability given the aerial operating condition of gondolas/aerial trams. | Grade separation and dedicated right-of-way avoid congestion. At-grade profiles can experience less reliability if adjacent to traffic and/or allow traffic crossings of guideway. All ST3 light rail extensions assume full grade separation. |

| Implementation, operational, and maintenance requirements | |
|---|--|
| Implementation, operational, and maintenance requirements address the needs to bring each transit technology online and support ongoing operations and maintenance. | |
| Gondola/aerial tram | Light rail (Sound Transit) |
| <p>Very few existing urban transit systems in U.S. Few suppliers and manufacturers likely limit choice of specific technology. However, risk factors likely diminishing with experience from international urban installations and North American proposals over the last few years.</p> <p>Vehicle operators are not necessary in cabins but are at stations, as well as station staff to assist passenger loading/unloading. Little experience within the U.S.</p> <p>Lack of need for large, separate operations and maintenance facility contributes to risk reduction.</p> | <p>LRT currently operating in region and in dozens of US cities. Many established suppliers and manufacturers.</p> <p>High number of experienced vehicle operators and mechanics, and guideway and system operations and maintenance personnel, within the U.S.</p> <p>Need for OMF connected to and located at/near system guideway. Size and location of OMF depends on extent of system served. Capacity to store and maintain fleet of 100 or more train cars is normal and requires multiple acres of level land.</p> |

| Regional system compatibility | |
|--|---|
| Regional system compatibility refers to how well each technology will support the existing and planned HCT system as articulated in the LRP and Regional Transit System Plans. | |
| Gondola/aerial tram | Light rail (Sound Transit) |
| <p>Gondola/aerial tram is not considered HCT and so would not be compatible with the system Sound Transit is delivering via Regional Transit System Plan investments.</p> <p>There is no existing gondola/aerial tram system in the central Puget Sound and so would require all new infrastructure to support deployment.</p> | <p>Light rail is one of the HCT technologies identified in the LRP and is already deployed and operating.</p> |

EXPERIENCE WITH GONDOLAS/AERIAL TRAMS AS PUBLIC TRANSPORTATION IN NORTH AMERICA

Within the United States, there are very few examples of gondolas/aerial trams operating as urban public transportation systems. There are many systems in operation across the world, with the closest and newest ones being in the Mexico City region. However, because of the differing laws, economics, and engineering standards that international systems are designed, funded, constructed, and operate under, it is difficult to directly compare certain factors of gondolas/aerial trams that exist outside of the United States with those that exist or could be implemented with the United States.

Proposed Systems

There is one current proposal for constructing and operating gondolas/aerial trams within the U.S. and Canada that bears mentioning in the context of this feasibility report.

In Canada, an aerial tram system is being planned by the regional transit authority for the Vancouver metropolitan area (TransLink). This system would connect the regional rail public transit system (SkyTrain) with a public university (Simon Fraser University) that is located on a small mountain top in Burnaby, B.C. Due to the steep terrain and high elevation above the surrounding urbanized area, Simon Fraser is isolated from the regional transit system and relies on buses for transit connections. The bus route operates on only one of two roads that accesses the university community, and this limits its capacity and reliability, factors that the proposed aerial tram would improve upon.

WEST SEATTLE SKYLINK PROPOSAL

The diagram to the right shows the proposed LRT system to West Seattle (at full ST3 system buildout) and a potential route for a gondola line that would provide similar connections to West Seattle. The diagram is taken from the West Seattle SkyLink website. [Note: For purposes of this comparison, an assumption is made (when relevant) that the SODO Station would serve as the eastern terminus of the gondola system. This is to simplify the comparison and reduce redundancy of the transit system between SODO and Chinatown/International District stations.]



There are many factors to consider when comparing two transit technologies for operation along a particular route. Specifically for the Sound Transit proposal to construct light rail to West Seattle, three of the primary considerations include:

- 1) ability to accommodate the expected future ridership demand,
- 2) improvement of overall connectivity to the regional transit system, and
- 3) ability to extend the route consistent with long range plans.

Accommodating Future Ridership Demand

The capacity to carry the peak passenger loads in one direction is a critical factor in selecting a transit technology that can serve multiple generations of travelers. Deploying a technology that does not offer the capacity to carry passenger demands over multiple generations of growth in demand and is challenging to expand can result in future costs and impacts that could have been avoided by an initial choice of a technology that is robust and well-established in the transit industry.

For a high-capacity service between downtown Seattle and West Seattle, the peak passenger

loads are projected to occur on the segment that crosses the Duwamish River (i.e., between the SODO and Delridge stations in the WSBLE extension plan). The highest loads would occur during an hour in the p.m. peak period (roughly between 3 and 7 p.m.) in the westbound direction. To correctly scale a transit technology choice, this peak load should, at minimum, be accommodated by the maximum capacity of the system. However, reserve capacity should also be available or easily added to serve periodic exceedances of the normal peak (such as during special events) and to allow for future demand growth.

The projected 2042 peak load for riders travelling between the International District/Chinatown station and SODO station is 3,000 riders, and between SODO and West Seattle is 2,500 riders, in the outbound direction from downtown during the p.m. peak period. (Similar peak loads would likely occur in the morning in the opposite direction due to regional commute patterns).

The planned WSBLE LRT system can easily accommodate the peak load through its ability to carry 6,000 seating and standing passengers on a four-car consist at 6-minute headways. Occasional surges in demand beyond the peak load could be accommodated by the increases in the number of standing passengers, and/or by temporary increases in the frequency of trains. Growth in future demand beyond the projected peak load may also be accommodated through increases in train frequency.

A gondola system may be able to accommodate the 2042 projected peak load depending on its speed and cabin capacity; however, the ability to handle any increased demand appears very limited given the current state of the technology. While a review suggests the typical gondola system can carry 2,000 passengers per hour per direction (with some examples outside the U.S. exceeding this amount), a gondola system as suggested by West Seattle SkyLink that operates cabins with a capacity of 10 seated passengers, each departing a station every 10 seconds, could theoretically carry 3,600 seated passenger per hour per direction. Additional capacity could be achieved depending on the available space in the cabin for standing passengers, as well as through temporary increases in the frequency of departing cabins. Headways of less than 10 seconds may be difficult to operate when cabin loads are high and boarding passengers can take longer than usual.

Even though a gondola system may be able to accommodate projected peak loads, it is likely that permanent capacity increases to accommodate future demand growth would be extremely difficult without significant changes to the design of the system (e.g., by deploying larger cabins, increasing travel speeds) that could require major reconstruction of stations and the conveyance system.

Moreover, a gondola system that serves West Seattle as a line that is separate from the larger light rail system will not create the system-wide capacity needed to accommodate future peak demands to/from and through the central, highest-demand portion of regional high-capacity transit network (downtown Seattle).

Construction of the WSBLE project will include a second parallel LRT route to serve downtown Seattle and its environs. Providing this second route (mostly in the form of a tunnel through downtown) will add roughly the same capacity of the existing tunnel and essentially double the light rail capacity through the central, highest-demand area of the regional system. This additional light rail capacity will be available to accommodate future peak loads into, through, and out of downtown Seattle.

Light rail service to/from West Seattle is an integral component of this expanded system through its connection to the existing line that serves downtown (via the existing tunnel stations) and points north along the existing line to Northgate and its future extensions to Lynnwood and Everett. By splitting the ridership demand to, from, and through downtown between the West Seattle – Everett line and the new line from Ballard, which will serve downtown via a new tunnel and will connect to the existing line to Angle Lake station and an extension to Tacoma, enough capacity is created to meet 2042 demand and well beyond. Without the West Seattle and Ballard extensions, the system would not have the capacity to carry 2042 peak hour demand. Hence, the West Seattle light rail extension is a critical element of the ability for the regional light rail system to serve future populations for generations.

Overall Connectivity to the Regional Transit System

Like all travelers, transit passengers generally prefer to minimize the time taken to complete a trip while maximizing comfort and convenience. If a trip can be made without transfers, this tends to increase comfort and convenience. However, if the overall time to complete a trip can be reduced, even if it involves a transfer, then passengers will likely be attracted to that trip if the impacts to comfort and convenience are minimal.

Compared to a gondola line that runs between West Seattle and downtown Seattle, the WSBLE LRT system would require fewer transfers by passengers travelling to/from West Seattle. This is due to the light rail line from West Seattle providing travelers a continuous, one-seat ride to the existing downtown Seattle stations, and to significant destinations north such as the University of Washington, Northgate, and Everett. Transfers to/from destinations along the LRT system to the south or east would still require transfers to another LRT line, at SODO or other shared-line stations, but because the transfer would occur between the same modes, the transfer can be designed for efficiency by reducing or eliminating the need to move between separate stations.

A gondola line would require a transfer to the LRT system at the SODO station (or at Stadium or Chinatown/International District stations if a gondola were to reach those stations), thus adding time to a passenger's journey and reducing the convenience and comfort. The transfer "penalty" could be somewhat minimized due to the extremely high frequency of cabin departure/arrival (multiple seconds versus minutes for LRT) and in turn reduces the duration of the transfer. Speed of the individual transit lines taken along a trip that includes a transfer can also mitigate the penalty by reducing the end-to-end time for the trip.

However, in this case, the travel time via gondola between West Seattle and the LRT stations in SODO does not appear to provide any advantage over trip via light rail (e.g., approximately seven minutes between SODO and Alaska Junction stations via LRT versus an estimate of 14 minutes via gondola).

Line Length and Future Extension

Light rail lines theoretically have no limits to their physical length and can be built and operated for tens of miles. That said, from an operational and maintenance standpoint, light rail lines encounter greater challenges as their length increases. Many transit agencies across the U.S., including Sound Transit, have experience with successfully planning, constructing, and operating extensions of a light rail line many miles beyond a terminus.

Worldwide, the existing gondola lines are not nearly as long as light rail systems and contain vastly fewer stations along the line. As a reference, the recently opened Zlatibor Gold gondola lift in Serbia is the longest in the world, with a length of 5.6 miles and only two stations (a third intermediate station is planned). The gondola connects a tourist center with a ski area, passes over a lake, can carry 1,200 passengers per hour, and has a travel time of approximately 27 minutes.

An example of an urban public transit gondola system in operation is “Cablebus” in Mexico City. The system has two separate lines, with two additional lines planned. The longest existing line is 6.5 miles long and has 7 stations. However, to travel the length of this line requires a transfer at a mid-point station where passengers must disembark their cabin and board another. Extending these and other existing gondola lines may be possible from an engineering standpoint, but in practice there are no known current proposals to do this, and past extensions of any relevance have not been found.

Overall, a regional urban high-capacity transit system on the scale of that planned by Sound Transit – one that envisions new LRT lines and extensions of existing ones of several miles in length – does not appear feasible using current experience with gondola systems and technologies as a guide.

Other Factors to Consider

Equity and System Integration Considerations

The West Seattle SkyLink proposal would replace light rail from West Seattle with a gondola that would integrate with the existing regional light rail system at SODO and International District/Chinatown Stations. The replacement of light rail with West Seattle SkyLink would require at least two transfers to access the regional light rail system for passengers who would otherwise have accessed the West Seattle light rail stations on local transit. This would effectively increase the travel times for these passengers in moving first from a bus trip to a gondola trip that would include potential street crossings and vertical conveyance and again from a gondola trip to a light rail trip.

According to the WSBLE Station Planning Progress Report that was issued along with the WSBLE Draft Environmental Impact Statement, bus access is forecast to account for 52% of passengers at Alaska Junction Station, 32% of passengers at Avalon Station, and 87% of passengers at Delridge Station. Many of these passengers would be arriving from points further south that currently have higher relative proportions of Black, Indigenous, and people of color than the Sound Transit district average.

Cost, Constructability, and System Impacts

The proposal by West Seattle SkyLink states that a gondola can be operational between West Seattle and the International District by 2026 for a cost of “below \$1 billion.” There is little additional information that supports this claim, and it is beyond the scope of this feasibility report to determine the validity of the cost estimates.

Furthermore, West Seattle SkyLink also asserts that construction would be complete in only two years suggesting that gondola construction has little to no impacts. While it is again beyond the

scope of this report to determine the validity of this, it must be noted that considerations like safety, capital and operating costs, and impacts to the built and natural environment and to the function of the general transportation network would need to be addressed before proceeding with gondola technology.

Staffing

Light rail vehicles require a single operator to drive each train while gondola cabins are carried along the line without the need for an operator. This apparent lower level of needed staffing for a gondola system is offset by the need for station attendants to assist with the boarding/deboarding of passengers (particularly passengers with mobility challenges) and the coupling/decoupling of cabins as the need arises. For security and fare compliance, a gondola system may have some advantages over a proof-of-payment LRT system in that fare payment can be checked by station attendants prior to cabin boarding and on-board security for each cabin can be managed remotely through cameras and direct emergency communications.

Reliability and Emergency Operations

Both LRT and gondola systems offer high levels of reliability. Since gondolas by design are completely separated from interference and conflicts with other modes, they rarely experience delays if operated and maintained adequately. LRT systems can avoid interference and conflicts (if their alignment is grade-separated) but such alignments may require greater capital infrastructure and maintenance costs. All ST3 light rail alignments are fully grade-separated and so will avoid these conflicts.

Weather conditions can detrimentally affect the operations of both technologies, with heavy snow and ice impeding LRT operations greatly while heavy winds can do the same to gondolas. Emergency evacuations procedures are quite different between the technologies, with gondolas requiring the lowering of passengers from disabled cabins to the ground via cables, while LRT systems can be designed to allow for direct dis-embarkment of passengers from disabled vehicles along established secure routes.

LRT trains that are unable to move can be pushed out of the operating path by a separate vehicle, thus allowing other in-service trains to be affected by the disablement for relatively short period of time. For a gondola system, problems with the conveyance system can affect the movement of all the cabins on the line resulting to delays for all the passengers travelling on the line, and emergency evacuation of a single cabin can have the same results.

SOUND TRANSIT PLANNING BACKGROUND

Regional Transit Long Range Plan

Sound Transit has an adopted Regional Transit Long-Range Plan (LRP), (December 2014) and implements the elements of this plan through voter-approved system plans: Sound Move (1996); Sound Transit 2, or “ST2,” (2008); and Sound Transit 3, or “ST3,” (2016). Financing for these system plans is also approved by the voters in the Sound Transit district.

The Sound Transit Board of Directors updates and adopts the LRP to guide the agency's

development of regional transit system plans, which in turn guide a phased creation of the region's high-capacity transportation system.

“The Regional Transit Long-Range Plan represents Sound Transit’s goals, policies, and strategies to guide the long-term development of the HCT system.” [LRP, pg. 2]

As stated on page 6 of the LRP, “State law charges Sound Transit with planning, building, and operating a high-capacity transportation system for the Central Puget Sound region. Sound Transit’s plan for the region’s HCT system – and an essential tool for the region’s healthy growth – is a combined rail and regional express bus system.”

High-Capacity Transit Technologies Issue Paper

As part of the most recent update to the LRP, Sound Transit developed the High-Capacity Transit Technologies Issue Paper. Updates to the LRP allow Sound Transit to update the HCT technologies considered for inclusion in the LRP and in subsequent regional transit system plans. The purpose of the Issue Paper was to review and provide a qualitative assessment of various technologies, and to evaluate their appropriateness for inclusion in the LRP and potential implementation by Sound Transit.

The Issue Paper examined 13 types of transit technologies, including gondolas/aerial trams. Seven of these technologies were not carried forward because “they were less suitable for Sound Transit to maintain, operate, and expand regional HCT services in an efficient manner or where they did not support or build upon the existing regional HCT system.” Sound Transit did not carry forward gondolas/aerial trams because we found them not suitable for Sound Transit’s HCT system “because they operate on a local circulation level, lack regional applications, and each application would require new supporting facilities and services.” [Regional Transit Long-Range Plan Update, High-Capacity Transit Technologies Issue Paper, pg. 15]

Environmental Documentation Supporting LRP Decision-Making

We prepared a supplemental environmental impact statement (SEIS) to support the review and adoption of the LRP (Regional Transit Long-Range Plan Update, Final Supplemental EIS, November 2014). The SEIS defined and evaluated various high-capacity transit technologies, including the following:

- Light rail
- Commuter rail
- Regional express bus/bus rapid transit
- Streetcar

Other transit technologies were considered but were screened from further evaluation in the SEIS based on an assessment of a range of technologies. The technologies not carried forward for evaluation in the SEIS were:

- Monorail

-
- SkyTrain (as operated in Vancouver, B.C.)
 - Heavy rail
 - High-speed rail/Maglev
 - People movers/airport circulators
 - Gondola/aerial tram
 - Personal rapid transit

For the transit technologies that were not carried forward, the SEIS addressed their suitability for application as non-HCT components of the regional transit network in the LRP:

“Technologies were carried forward if they allowed Sound Transit to maintain, operate, and expand regional HCT services in an efficient manner, or if they supported and built upon the existing regional HCT system. The technologies that failed to do so were not carried forward for further consideration. Several of the technologies that have moderate to high HCT capabilities, but are generally less suitable for Sound Transit, could be considered for some service if that service would operate on principally exclusive rights-of-way and is not intended to interline (i.e., share the same tracks) with the light rail “spine,” which extends from Everett to Tacoma, and from Seattle to Redmond.

“Other technologies could also be considered, in some situations, as HCT supportive services. In either case, consideration should be given to whether these other technologies provide the cost-effectiveness, flexibility, and reliability to meet future needs. New transit technologies for Sound Transit, especially non-standard or unconventional technologies, likely have different operations, power, and other requirements, and would likely require additional separate operations and maintenance facilities as described previously. In addition, using a different technology for off-spine service could preclude options for interlining transit lines with the spine as the system is modified or expanded in the future.” [Final SEIS, Regional Transit Long-Range Plan Update, Chapter 2 Alternatives Considered, November 2014, pg. 2-36]

Definition of High-Capacity Transit

State law defines a high-capacity transit (HCT) system as “a system of public transportation services within an urbanized region operating principally on exclusive rights-of-way, and the supporting services and facilities necessary to implement such a system, including interim express services and high occupancy vehicle lanes, which taken as a whole, provides a substantially higher level of passenger capacity, speed, and service frequency than traditional public transportation systems operating principally in general purpose roadways.” [RCW 81.104.015]

Consistent with this definition, the LRP describes high-capacity transportation as follows:

“High-capacity transportation simply refers to a transit system, including necessary infrastructure and supporting services, that carries large numbers of people between regional growth centers faster and more frequently than a basic, conventional local transit system. To do this, the type of transit used in the system (express buses, rail, or both) usually needs to run in

its own right-of-way, separated from general traffic (and general traffic jams).” [LRP, pg. 2]

The LRP further describes the elements of the high-capacity transportation system:

“The long-range plan includes a mix of transportation improvements: bus rapid transit, regional express bus routes, commuter rail, and light rail. The plan includes community ‘gateways’ connections in urban and suburban areas for communities to connect to the rest of the region. The long-range plan also includes the supporting services and facilities needed to put such a system in place.” [LRP, pg. 6]

For the purposes of this report, HCT refers to the transit modes that Sound Transit plans, constructs, and operates as guided by the LRP.

All of Sound Transit’s system plans (Sound Move, ST2 and, ST3) include only light rail, commuter rail, regional express bus and bus rapid transit service, and certain operational forms of streetcar as the HCT modes for implementation by Sound Transit in coordination with other state and local agencies and jurisdictions.

The LRP includes a plan map (right) that depicts Sound Transit’s envisioned network of services – including the identified HCT mode – as the regional transit system is built out. The map shows what was already built and operating at the time of LRP adoption, as well as what types of future regional services should be provided, and where. The lines on the map representing future service investments are intended to show general corridors that would be served, and do not represent specific routings or alignments. Those choices are refined during system plan development and determined during project-level planning and environmental review.



Regional Transit System Plans

To create a Regional Transit System Plan that goes before voters for approval, Sound Transit must select HCT transit improvements directly from the LRP. The last Regional Transit System Plan (ST3) spelled out a set of HCT investments in specific corridors with defined modes (i.e., light rail, commuter rail, or bus rapid transit) and general station locations.

ST3 authorizes Sound Transit to build the regional light rail spine connecting Everett, Tacoma, and downtown Redmond. In addition, ST3 specifically identified a project that provides a light rail connection from downtown Seattle to the vicinity of West Seattle’s Alaska Junction neighborhood. Given the distance between Everett and Tacoma and in consideration of other

light rail investments, the ST3 system planning process established expectations for an operating plan that would “split the spine” and tie Seattle termini to the regional light rail spine. This plan anticipates three such operating lines: the 1 Line (Ballard-Tacoma), the 2 Line (Mariner-Redmond), and the 3 Line (Everett – West Seattle).

The ST3 plan includes projects that will study the expansion of the HCT system as defined in the LRP to anticipate development of a future Regional Transit System Plan for voter approval. We have identified specific study corridors that are consistent with the LRP. Among these is an HCT study that will examine an extension of light rail beyond the planned terminus in West Seattle, extending light rail from West Seattle to Burien, connecting to Renton via Tukwila, and in coordination with local transit partners to examine a variety of options for service provision and to maximize opportunities for regional integration. [Sound Transit 3 template, HCT Planning Studies, July 2016]

LEGAL CONSIDERATIONS

Under Chapters 81.104 and 81.112 RCW, Sound Transit is authorized to use tax revenue exclusively to construct the high-capacity system approved by voters in the Sound Move, ST2, and ST3 Transit Plans. Among other projects, the voter approved ST3 Transit Plan authorized a tax increase to construct a light rail line serving West Seattle with four stations at identified locations. Sound Transit is not authorized to use the ST3 tax revenue approved to construct a light rail system to instead construct a gondola system without additional voter approval.

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