

Alternative Transit Expansion Program Instead of ST3 Light Rail

By Smarter Transit, August 29, 2024

The Sound Transit agency is operating and building a light rail transit network in central Puget Sound region of Washington State, including the urban parts of King, Pierce, and Snohomish Counties. Not including the Tacoma Link streetcar, phases one and two of the Central Link Light Rail project encompass 38 light rail stations and 58 miles of two-way track moving trains of a length up to four rail cars each.

Sound Transit phase three, abbreviated ST3, encompasses a plan for 28 additional light rail stations and 54 miles of additional two-way track. The construction of ST3 light rail has not yet begun. According to the 2024 Financial Plan & Proposed Budget of the agency covering 2017 to 2046, the capital cost of building ST3 light rail is budgeted at \$35 billion, with other ST3 construction programs totaling \$11 billion. These costs do not include the \$21 billion cost of debt service covering money borrowed via loans and bonds during the life span of ST3. Beyond these amounts, the agency has budgeted another \$81 billion for operations & maintenance of transit services plus \$29 billion capital cost of earlier phases mostly already expended, bringing the total ST budget for 2017-46 to \$148 billion.

Smarter Transit is making the case that the first two phases of the light rail program voted in 1996 and 2008 has built enough railroad track for now. The 58-mile Link light rail network is an expensive infrastructure that should be completed and allowed to show its alleged value over future years just ahead. Light rail running to the stadiums and urban centers within the network defined by the 38 stations including the three end-of-the-line terminus stations to be opened next – Lynnwood, Federal Way, and Redmond Downtown – is likely to be enough and quite sufficient, given the alternative for expanding mass transit described next. It's time to pause light rail expansion and rethink the 1990s design within the framework of newly revealed patterns of trip timing, volumes, and destinations.

Specifically, the third phase of Central Link Light Rail from Sound Transit, that is, ST3 – which includes the climate disaster, the fiscal disaster, and the social equity disaster that come out of the West Seattle light rail extension – could be replaced by a superior alternative mobility system that could carry more people every day, serve more neighborhoods than light rail can ever possibly get near, and cost much, much less. A superior alternative would emit less carbon into the global atmosphere than constructing and operating the proposed new light rail lines of ST3.

Below following this introduction is an outline of an alternative mobility plan for the Sound Transit three-county taxing district and service area that would, could, and should replace the light rail program of ST3. Some would call it ST2.5:

- Core of the alternative is fully funded and readily available electric buses and electric vans from existing public transit agencies, new franchised and regulated providers of small vehicle ride services, private household travel responding to incentives encouraging trip pooling, and vastly expanded public infrastructure for personal mobility wheels such as e-bikes. Making the region’s roads work better and more safely is a required public promise. Electric propulsion of new vehicles would be a standard that is already underway. With less tunneling, less pouring of concrete, and less civil construction overall, taxpayer funding of this alternative program could be managed to be less than 50% of the \$35 billion capital budget for ST3 light rail, with ridership on the expanded bus and van service exceeding ridership resulting from the ST3 light rail expansion by at least 25%. These are feasible design estimates once the expensive requirements in building railroad tracks and stations for ST3 are traded for electric, express bus and flexible, on-demand van infrastructure.



A King County Metro battery-electric bus undergoing tests.
<https://kingcountymetro.blog/2021/01/11/metro-invites-vendors-to-build-battery-electric-bus-charging-facility/>

- Twenty-five percent higher ridership benefit and a 50% lower budgeted cost for the ST2.5 alternative means a ratio of benefit to cost 2.5 times what is achievable with ST3. That’s 2.5 times more mobility value from billions of dollars in public expenditure now funded at six million dollars per day in local taxes. A road-based ST2.5 complemented with new franchised private ride services and expanded carpooling would support a world class mass mobility system for passenger travel that would vastly exceed the geographic reach of Sound Transit’s rail plans, the obvious main reason being the extensive coverage of the region’s road system compared to the obviously limited mileage of the rail network.

The Sound Transit light rail and commuter rail authorized in the 1996 and 2008 tax elections would continue to be in place and operating. Access via park and ride or drop-off to the existing 38 light rail stations with road vehicles of all types – both private cars and public buses – would continue to be supported. The specific routes of ST3 light rail expansions not built would be traded for the high-capacity, high-frequency electric bus service of ST2.5.

Expansion of mass passenger transport in the central Puget Sound region should also encompass a wide variety of public and private road vehicles on the existing ubiquitous road network that recognizes a wide variety of road modes, increasingly electric powered and with automated controls in the 2030s and beyond, moving travelers safely and reliably from all origins to any destination with road access, wherever those happen to be without regard to zoning. This approach would support a transit mode share in 2050 that is at least 25% higher than the 8% mode share for public transit forecast by PSRC in its most recent long-range plan, issued in 2022.



Left: Zoox mapping Seattle streets for future robotaxi service
 Right: Zoox automated, driverless vehicle providing early robotaxi service in Foster City, California
 Left hand photo by Levi Pulkkinen / The Seattle Times | <https://www.seattletimes.com/business/amazons-self-driving-unit-zoox-puts-driverless-taxi-on-the-road/>
 Right hand photo from Zoox | <https://zoox.com/journal/publicroads/>

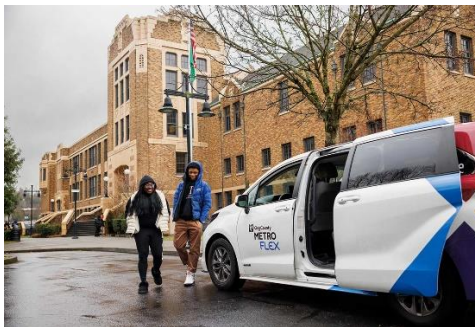
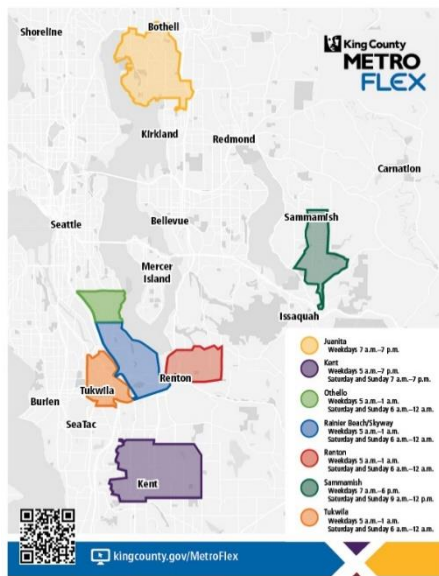
- Public transit integrated with franchised private ride service modes – the Lyft and Uber TNCs of today and the Waymo and Zoox robotaxis of tomorrow – would be authorized and incentivized to drop off and pick up travelers at all of the 38 light rail stations existing or under construction as a result of the first two phases of Sound Transit's light rail program, as well as at the bus stops of the advanced bus programs -- RapidRide, Swift, Stream, and Stride – already underway from three county bus transit agencies and ST.



Left: Community Transit Swift bus rapid transit in service
 Right: Electric double deck buses ordered by Sound Transit for Stride BRT service
 LH photo | <https://www.communitytransit.org/swift>
 RH photo | <https://www.alexander-dennis.com/sound-transit-orders-33-alexander-dennis-enviro500ev-electric-double-deckers-with-next-generation-technology-for-stride-brt/>

Of special importance in this alternative mass mobility plan: regulations, incentives, and subsidies should be targeted to support affordable transit access and other ride services that serve the mobility needs of those citizens without access to driving or riding in private vehicles.

On-demand, flexible paratransit meeting ADA requirements, non-emergency-medical transport (NEMT), and general special needs transportation of those who do not have access to private rides could be integrated into the alternative mass passenger transport system envisioned here: contracted, subsidized TNC trips, evolving to be served with Waymo and Zoox style robotaxis, plus private ride pooling pushed up with financial incentives. The central Puget Sound region can take advantage of work underway worldwide on these kinds of services.



Photos show King County Metro Flex on-demand van service offered within a service zone, such as Renton Highlands
 RH top: https://www.youtube.com/watch?v=YD1w_LU-k00
 RH bottom: <https://kingcounty.gov/en/legacy/elected/executive/constantine/news/release/2023/february/28-metro-flex>
 Service zone map: <https://kingcountymetro.blog/2023/02/28/metro-flex-on-demand-transit-services-now-even-better-united-under-one-name/>

Those citizens seeking a much higher level of mobility performance and environmental quality from the six million dollars per day that Sound Transit is pulling from the accounts of citizens and businesses throughout the region are asked to please send additional mobility-enhancing concepts to Smarter Transit’s New Mobility Concepts team working to refine the alternative mass transit plan described here.

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