

Footnoted version of September 2005 OP ED by Harkness, Paylor, and Popp.

NOTE: Much of the information for this OpEd comes from two documents. One is a 150+ page research report called How Sound Transit Abused the Planning Process to Promote Light Rail, by Harkness. The second is a still unanswered 20-page letter from Harkness to Sound Transit Board Chairman Ladenburg that was written April 2005. For brevity the former will be referred to, in the footnotes below, as How ST Abused... and the latter as Letter to Ladenburg. The reader is encouraged to study them carefully as this story is far too complex to be summarized in an OpEd. Both, plus other related information, can be found at the following web sites.

<http://www.bettertransport.info/pitf/harknessmessage.htm> (for How ST Abused...)

<http://www.bettertransport.info/pitf/issuepaperquestions.htm> (for Letter to Ladenburg)

<http://effectivetransportation.org/> (for How ST Abused...)

The original version of the OpEd appears below. The version in the newspaper is shorter because the newspaper imposed strict size limits.

Restoring Voter Trust in Transportation Planning

The Economist magazine recently said Seattle has the “worst transportation planning in North America”. In addition, 420,000 signatures on an initiative (I-912) to repeal the new State gas tax were gathered in just 32 days. These should be wakeup calls for this region to fix fundamental problems in how we go about transportation planning.

Many who signed I-912 said they didn’t trust government to spend their tax dollars wisely and that there was a lack of accountability. Unfortunately, their concerns are well founded, and unless something is done angry citizens threaten not only the gas tax but also the RTID package of local tax increases needed to finish paying for the viaduct, 520 bridge and other critical projects. Remember a similar package (Referendum 51) was defeated in 2002 largely on the lack-of-trust issue. (a) Initiatives are crude remedies and do collateral damage, but a “starve the beast” approach is about the only way ordinary voters can hope to change things.

(a) Seattle Times, Jan 12, 2003. see How ST Abused....p.108 for the quote

It’s far, far better to address the causes of voter disillusionment before these issues come to vote. Lets take steps to ensure our tax dollars will be spent wisely, and spent achieving what people care about most; namely faster trips for auto and transit users alike. Lets also install accountability and rebuild trust.

There are two high priority targets for reform here at the regional level: Sound Transit (ST) and our official regional transportation-planning agency, the Puget Sound Regional Council (PSRC). ST's a poster child for why people don't trust government to spend tax dollars wisely, and PSRC's asleep on the job.

Sound Transit is doing four major things wrong. First it has built a hugely wasteful commuter rail line called Sounder where every ride requires over \$100 in taxpayer subsidies. (b) Second, it's building a light rail system that will cost billions more than an equally effective bus rapid transit system. (c) Third it's destroying trust by disseminating misleading information. (d) Forth, its management is --for all practical purposes --not accountable for results. Highlights follow but see <http://www.bettertransport.info/pitf/> and <http://effectivetransportation.org> for details.

(b) <http://www.bettertransport.info/pitf/soundercosts.htm> and <http://effectivetransportation.org/docs/SounderNorthAmortized2005.shtml> and personal communication with James MacIsaac, P.E.

(c) How ST Abused... page xxvi and page 81+

(d) Letter to Ladenburg and How ST Abused... page 103+

The full 125-mile regional light rail system ST wants would cost about \$23 billion (in 05\$), or \$10,000 for each adult in the region. (e) (f) Yet ST admits it won't reduce congestion. (g) Ron Sims, light rails main backer, says its intended to offer an "alternative". However for every 100 people paying for the full regional system only 7 would ride it, and most of those would be former bus riders. (h) The other 93 will remain stuck in traffic. Nor is this "alternative" cost effective. The line now under construction will cost taxpayers over \$91,000 per year for each commuter who switches from auto to rail.(i)

(e) The statement ST "wants" regional light rail is the author's opinion based on a close study of ST's documents and behavior. ST will claim there has been no decision to construct a full 125+ mile regional rail system and they are still considering alternatives for all except the 24-mile Central Link. Technically that's correct but ST did describe a 125+ mile rail system in their 1993 FEIS and clearly favored it over the other alternatives, and they described it again in their recent Long Range Plan. ST uses the word HCT but they have limited that to mean light rail, monorail, or BRT on exclusive guideways. ST has already decided HCT means light rail in Seattle. It is clear ST doesn't like monorail and has ruled it out across I-90 and thus for the entire eastside. Eventually they will formally rule out BRT on exclusive busways as not being compatible with the light rail in Seattle, and also as being nearly as costly as light rail. In short, it is certain ST wants a regional HCT system and intends it to be light rail. See How ST Abused... page 97+ for added detail.

(f) \$23 B comes from ST cost information as tabulated below by James MacIsaac, P.E. There are presently about 2.6 million people in the ST taxing district of which about 2.2 million are adults. Population data is from P 4.10-2 in SEIS for ST's Long Range Plan and PSRC staff.

(g) See page 104 in How ST Abused... for one of ST's admissions, and also see page 23+ for the factual data re light rails minimal effect on congestion.

(h) Page 4.10.1 of the FSEIS for ST's Long Range Plan says there will be 3.578 Million persons in the ST taxing district by 2030. All are in essence paying taxes to ST. The total number of people that would use rail is not reported in either the 1993 FEIS or the 2005 FSEIS for the Long Range Plan, nor is total daily rail ridership reported. What is reported is rail boardings. Details on Page 3-23 of Reference 42 in How ST Abused... show that 330,250 rail boardings in 2020 translated into 305,250 one-way rail trips, since some trips involved a rail-to-rail transfer. Assuming that any given person would make just one round trip daily then the rapid rail system in the 1993 FEIS would be serving 152,625 persons per day in 2020. Using the same ratio the 520,800 daily rail boardings in the FSEIS (page 49-31) would translate into 240,000 persons being served by rail per day in 2030. The 240,000 using rail are therefore 6.7% of the 3.578 million paying for it. The fact that most rail riders would be former bus riders is partly indicated by the fact that bus routes that compete with rail are discontinued or rerouted to feed the nearest rail station.

(i) The line now under construction is the so-called "Initial Segment". The \$91,000 (in 05\$) per year figure is an updated version of the \$81,000 (in 02\$) per year estimate on Page 28 in the report How ST Abused... The update uses the newer capital cost estimate by Mr. MacIsaac attached below, but otherwise follows the logic on Pages 25-28 and page 139 in the report How ST Abused...

We do need transit but the current fiasco over the First Hill station -and the fact that light rail here is costing \$203 Million/mile while the national average is just \$40 Million/mile - show light rail is simply the wrong technology for Seattle's terrain and densities. (j)

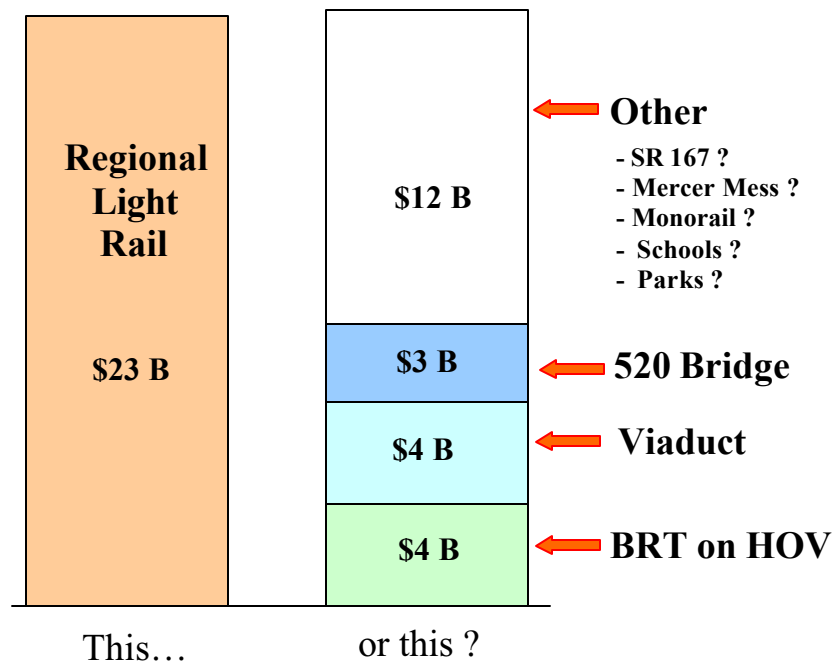
(j) \$203 M/mile (in05\$) comes from Jim MacIsaacs analysis attached below which shows that the 24.3 mile LR from Northgate to South 200th would cost \$4940 in 2005\$. The \$40 million per mile is across 18 light rail systems in 13 cities and comes from page 17 of a US GAO Report called "Bus Rapid Transit Shows Promise". Cost are escalated from 2000\$ to 2005\$. GAO Report is Ref 9 in How ST Abused... Light rail has been relatively inexpensive in other cities where land is flat and light rail can use old railroad rights-of-way.

Fortunately, there's a better alternative called bus rapid transit or BRT. (k) It requires keeping the HOV lanes moving -which will cost money-- but we need to do that anyway for car and vanpools, which carry three times more work trips than does transit. (l)

(k) See Page 41+ and References 9,10,11,12,14, and 48, in How ST Abused... for a full description of BRT.

(l) Seven percent of work trips in Puget Sound are made by transit, 21% are made by car and vanpool according to PSRC. See Letter to Ladenburg for a pie chart of this mode split data. This region has one of the best HOV lane systems in the nation which if maintained give us a virtually free guideway for BRT since BRT requires little of their capacity. The State DOT has a policy of maintaining an average speed of 45 MPH or greater on the HOV lanes during rush hours. Performance has fallen below this in some places at some times but there are a number of remedies starting with better enforcement and going up to relatively expensive capital improvements such as the direct access ramps now being built in several locations. Eventual conversion to HOT lanes makes sense if done equitably. Besides supporting car and vanpooling, keeping the HOV lanes moving maximizes their vehicle moving capacity. In short, a properly maintained/managed HOV network is strategic to the regions transportation future, although that knowledge is not well publicized.

The chart below shows that for the price of regional light rail we could have an equally effective BRT-on-HOV system, AND replace the viaduct, AND replace the 520 bridge, AND still have billions left over for other things like fixing the Mercer mess and SR167. That's the choice this region should be focused on. (m)



(m) This chart shows two alternate ways to spend \$23 Billion in taxpayer money. The \$23 B (in 05\$) cost of light rail comes from the MacIsaac estimate reproduced

below. The \$4 B to replace the viaduct and \$3 B to replace the 520 Bridge comes from the newspapers. The \$4 B for BRT on HOV has a more complex derivation. As explained in How ST Abused... Basically, back in 1993 ST compared a rail+TSM alternative with an all bus TSM alternative that is essentially equivalent to the BRT on HOV system advocated in this OpEd. TSM stood for a package of bus, HOV and park and ride lot improvements. They did this because even with a full rail system they recognized that improvements to the bus, HOV, and park and ride systems were still needed. Therefore there is a basic package of TSM (lets call it Base TSM) that is needed whether we build light rail or BRT. To build a regional BRT on HOV system we need this Base TSM package plus we need a “BRT overlay package” consisting of more buses, bus stations, additional HOV improvements, and perhaps even a second bus tunnel in downtown Seattle. As explained in How ST Abused... a second bus tunnel is probably not needed but to be conservative it’s included and makes up about \$1 B of the \$4 billion. It turns out both packages cost about \$4 B.

To compare apples to apples I could have constructed the chart with the Base TSM cost (about \$4 billion in 05\$) added to the bottom of each bar. But for simplicity I left it off both bars. Thus the \$4 Billion “BRT on HOV” segment in the right hand bar consists just of the “BRT overlay package”. Just to be absolutely clear, if we build regional light rail we will need to spend \$27 B, \$23 for light rail and \$4 B for the Base TSM improvements needed for car and van pools, and for bus routes not replaced by rail. If we build BRT on HOV we will need to spend \$8 B, \$ 4 for the Base TSM improvements and another \$4 billion for the BRT overlay package. These figures are all approximations based on cost data in ST reports. Until and unless ST produces an apples to apples cost comparison between a full regional light rail system and a full regional BRT on HOV system these are the best estimates available. Note also that the BRT on HOV cost estimate shown in this chart is for a BRT system that would have the same ridership as the \$23 B light rail system. That’s part of what’s meant by saying “equally effective”.

Unfortunately Sound Transit has suppressed the BRT alternative by biasing technical studies, and by disseminating misleading information to the public. (n) For example a recent ST report made it appear light rail would cost about the same as BRT-on-HOV in east King County but carry more riders. After challenge by both the state’s Expert Review Panel and this author --in a still unanswered letter to ST Board Chairman Ladenburg--, ST admitted the opposite was true. (o) Nevertheless the Board voted to drop the less expensive BRT-on-HOV option from further consideration. (p)

(n) The biasing technical reports, in particular the 1993 FEIS and Issue Paper E.1 is well documented in How ST Abused... and in the Letter to Ladenburg. Same for the claim that ST has disseminated misleading information.

(o) ST’s admission that BRT would have the same ridership as rail was reported in the Seattle Times on June 23,2005 and also in a handout given to the States Expert

Review Panel at a meeting attended by the author. (See Letter to Ladenburg for details.) ST's later admitted in the papers that they had gotten the cost estimate for BRT wrong and reduced it by \$2 Billion. The combination of these two admissions was to admit the "opposite was true".

(p) This was done when on July 7, 2005 ST formally adopted their Long Range Plan, which contained the following statement:

"Light rail transit is included in the plan to connect and serve the four major regional centers – Everett, Seattle, Tacoma, and Bellevue. Light rail is the highest capacity mode included in the plan, and is a cost-effective way to serve the core of the regional system where transit ridership is the highest." (This is copied from the Long Range Plan on ST's web site.)

This adopted plan is consistent with the "Plan Alternative" which was evaluated in the SEIS and calls for light rail from Seattle to Bellevue, Issaquah, Redmond and Totem Lake. (SEIS Page 1-6)

Clearly by adopting a plan, which calls for light rail linking Seattle to Bellevue, ST has effectively ruled out BRT-on-HOV as the HCT transit solution on I-90 and for the eastside, except perhaps in a support role. This was done despite the fact that ST admitted BRT on HOV would attract equal ridership and be at least \$2 billion less expensive than light rail. (See Letter to Ladenburg for further detail.)

ST Board members lack any meaningful accountability. Their pay isn't docked if the budget runs over. There's no financial incentive for them to choose the least costly alternatives. Nor is there any room on the ST Board for internal questioning. County Exec Ron Sims appoints 10 of the 18 members and when former board member and now State Attorney General Rob McKenna questioned the wisdom of rail some years ago Mr. Sims removed him from the board. (q) Finally, local voters have no control over ST. It takes the legislature or a statewide initiative.

(q) The King County Exec. is automatically a member but he appoints 9 others. Thus Mr. Sims is largely responsible for ST's plans and behaviors.

The PSRC has a competent staff but they are totally bogged down by politics at the management level and have for years avoided doing Least Cost Planning, as state law requires. (r) Implementing LCP, honestly and professionally, is probably the single most important thing this region could do to help ensure transportation tax dollars are spent wisely.

® LCP is a methodology that requires planners to first identify the main goal (such as reducing travel delay, then identify and evaluate a broad range of alternative projects or policies that could achieve that goal using objective quantitative cost-benefit techniques. For more detail see How ST Abused... page 135+.

Our recommendation: The State Legislature and/or the Governor should take dramatic steps to fix transportation planning in the Puget Sound area in order to help restore voter

trust before the November election. (s) One idea to consider: Replace the mayors and other elected officials currently managing Sound Transit and PSRC with a Team of full time transportation experts with no other job but improving transportation. Let the Governor appoint these folks but subject them to voter recall if they don't perform. Require them to use Least Cost Planning to identify --and recommend to voters-- those projects that would have the most bang for the buck in reducing congestion and improving mobility. Give Team members strong financial rewards tied to how well these projects actually perform in future years.(t)

(s) When this was first drafted there would have been enough time for the legislature or governor to at least propose specific reforms before November. Now there may only be time for them to express their intent to do so at the next legislative session.

(t) These “financial rewards” are a radical concept in the government context but are analogous to stock options given to corporate executives. These options may not be exercisable for years and their value then depends on how well the stock is doing at this later date. They motivate executives to make decisions that benefit the corporations in the long term, or at least medium term, future.

In this case the “team” of experts will get a large cash “bonus” in their retirement years if the projects they recommended earlier actually reduce congestion from what it would otherwise be. And, the bonus will be larger if the recommended remedies are very cost-effective, or smaller if they are not very cost-effective. (The author has worked out the concept of an algorithm to do this.) In short, the objective is to have these officials more motivated to find and recommend ways to reduce congestion at the least cost (in other words work for us), than to have them motivated to seek favors or future employment elsewhere.

Signed:

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Revised LRT Master Plan Capital Cost Estimates

Maclsaac -- May 25, 2005

Estimates in \$1000s	PSRC 2003 App 9 ¹	2005 Update ²	Complete Year ³	YOES ³ Estimate ³	Update source:
LRT Phase 1:⁴	785,400	2,493,000	< 3.17x	2,523,000	
Initial Segment North (1C,1D)	514,300	1,750,000	2009	1,770,000	2005 Financial Plan
Initial Segment South (1E)	195,500	660,000	2009	670,000	2005 Financial Plan
Tacoma Link	75,600	83,000	2004	83,000	2005 Financial Plan
LRT (HCT) - Phase 2:⁵	3,383,700	9,133,400	< 2.70x	11,615,600	< 1.27 x 2005\$
Sno SR-526 - Everett (2A1)	125,700	1,120,000	2018	1,420,000	2005 Middle Estimate
N.King Northgate - U-Dist (1A)	523,600	730,000	2020	1,100,000	2005 Factored Estimate
U-Dist - Westlake (1B)	950,700	1,890,000	2015	2,200,000	2005 ST est in 2002\$
S.King Boeing Acc Station	9,200	18,400	2009	20,600	2003 App A x 2.0
Tukwila - SeaTac (1F)	232,700	425,000	2012	490,000	ST 2002 & 2005 Est
SeaTac - Fed Way (2G) ⁷	436,400	1,350,000	2020	1,940,000	Based on IS cost/mile
E.King Seattle - S.Bellevue (2C)	197,800	410,000	2009	447,000	2005 Upper Estimate
S.Bell to Bell CBD (2D)	197,800	1,100,000	2012	1,332,000	2005 Upper Estimate
Bell CBD - Microsoft (2E)	325,800	740,000	2016	986,000	2005 Upper Estimate
Pce Fed Way - Tac Dome (2H)	384,000	1,350,000	2017	1,680,000	Based on IS cost/mile
LRT PHASES 1+2	4,169,100	11,626,400	< 2.80x	14,138,600	< 1.22 x 2005\$
LRT (HCT) - Phase 3:⁶	4,831,200	11,350,000	< 2.35x	22,436,100	< 2.00 x 2005\$
165th SW - SR-526 (2A2)	293,200	1,180,000	2030	2,419,000	2005 Middle Estimate
Northgate - 164th SW (2B)	855,200	2,170,000	2030	4,448,500	2005 Middle Estimate
Microsoft - Red CBD (2F)	349,100	1,100,000	2030	2,255,000	2005 Upper Estimate
Burien - Renton (3A) ⁷	663,300	1,400,000	2020	2,027,200	2006 Upper Estimate
Renton - S.Bellevue (3B) ⁸	680,700	1,100,000	2030	2,257,300	Based on IS cost/mile
S.Bellevue - Issaquah (3C) ⁸	581,800	1,200,000	2030	2,462,500	2005 Middle Estimate
U-Dist - Overlake (3D)	197,800				Post-2030
Bell CBD - Totem Lake (3E) ⁸	552,700	1,100,000	2030	2,257,300	2005 Upper Estimate
Totem Lake - Swamp Cr (3F) ⁸	657,400	2,100,000	2030	4,309,300	Based on IS cost/mile
LRT PHASES 1, 2 AND 3	9,000,300	22,976,400	< 2.55x	36,574,700	< 1.6 x 2005\$

¹ Source: PSRC *Destination 2030*, Appendix 9 - Projects; Revised May 22, 2003. Estimates in 2002\$.

² Based upon 2005 Financial Plan for Phase I projects. Phase II estimates based upon 2005 Issue Papers.

³ Completion year estimate based upon Maclsaac cash flow estimates using the Sound Transit financial models. YOES estimates prepared by future year cash and bond spending ability year by year to completion year.

⁴ Phase I has been reduced to fit 1997-2009 cash and bond revenues. Segments 1A, 1B and 1F go to Phase II.

⁵ Phase II requires a sales tax increase of 0.5% beginning in 2007, assumes \$80 million/year in federal New Start grants from 2007 thru 2020 (\$1.1 billion), and bonding to new maximums in order to complete by 2020.

⁶ Phase III will require another tax increase beginning in 2017.

⁷ The Burien-Renton line is a Phase II alternate to extending Central Link to Federal Way by 2020.

⁸ The I-405 LRT segments attract poor rider estimates and likely will be replaced by BRT per the corridor plan.

