

**Report to the Sound Transit Board:
Improving the Speed of Project Delivery**

Submitted by: Technical Advisory Group

February 2023

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Executive Summary

Delays, scope changes, and cost uncertainty have hampered Sound Transit (ST) 2 projects under construction and have already disrupted ST 3 projects still in the project development phase. When ST3 was approved, it promised to quintuple the existing light rail network, making it larger and more expansive than the still yet to be completed ST2. This report presents recommendations that will allow ST to scale up the agency's capabilities, revamp its internal processes, and take control of its capital program.

The Technical Advisory Group (TAG) was convened by the Board of Directors during the agency's realignment process to expedite capital program delivery and learn how other agencies across the country and globe have delivered similarly scaled transit systems.

The TAG has six primary recommendations. The first two are critical to ensuring the success of the final four. All of the recommendations build on ST's efforts to date and amplify the agency's ability to successfully deliver what it has promised the voters.

The TAG's six primary recommendations are:

- **Rebuild trust and clarify the roles and responsibilities of the ST Board and staff.**

By all accounts, there is a lack of trust between Board members and staff. The TAG heard and observed that this lack of trust causes Board members to insert themselves more deeply into project development by requesting additional information, analyses, or alternative approaches. Staff has at times delayed providing information or delivering bad news to the Board and does not provide specific recommendations for decisions or solutions.

Timely decision-making starts with the board and staff understanding their roles and responsibilities. Board members must be explicit in authorizing and expecting staff to bring forward timely information along with their best recommendations for Board decisions. Staff members must provide information when it is known and utilize their expertise to share the risks and benefits of specific decisions put forward for action. The TAG has seen how Board intervention or staff's unwillingness to make recommendations has wasted time and money in ST2 and ST3 projects. There is simply too much work ahead of the agency to allow these issues to persist.

- **Introduce an experienced megaproject capital program executive team.**

Delivering ST3 is categorically different from what the agency has done previously. The organization must build on the foundation of the current structure and scale up beyond current capacity and expertise if it is going to deliver ST3, including hiring additional experienced executive leaders who have successfully led similarly large and complex programs elsewhere. The TAG recommends hiring a new Executive Director of Capital Programs and two new deputies, to oversee ST2 and ST3, from outside the agency.

This additional talent and experience should be hired to augment current ST staff. More staff resources are needed, not fewer; this recommendation supports bringing in specific experience with programs the size and scale of ST's. ST has one of the largest transit infrastructure programs in the country and needs to attract the best talent to deliver it.

The first two recommendations are critical to ensuring the success of the final four. If the first two recommendations are not implemented, the TAG believes that the agency will continue to face schedule delays, cost increases, and will struggle to deliver ST3 in a timely manner.

- **Implement procedures that push decision-making down to the lowest level practical and foster an environment that encourages decision-making in general.**

Capital construction is by nature fast moving, especially with the implementation of new alternative delivery methods. Experienced staff can assess situations and quickly decide the best recourse, and those working in the field typically have the right information to choose a reasonable course of action and move forward, saving time and money for the agency.

ST's current culture appears to discourage decision-making. Delegated authority levels should be revisited with an eye toward the significant volume of work coming as ST3 projects begin construction and the delays caused by elevating decisions unnecessarily.

More important, staff members reported that even when they have the authority to approve a change, they will elevate decisions for fear of making the wrong one and getting reprimanded. To deliver ST3 efficiently, this has to change. Capital development is inherently risky, and mistakes happen. Staff members must be empowered and encouraged to make decisions at appropriate levels. In construction, where costs may be measured in millions of dollars per day, the consequences of delayed decisions are often worse than the cost of imperfect decisions.

- **Align key procedures with industry best practices, eliminating unnecessary steps and associated delays.**

The Puget Sound region has multiple public agencies embarking on multi-billion-dollar capital programs, and the competition for consulting and contractor expertise is stiff. ST must make a concerted effort to become an "owner of choice," an agency that is seen as fair to its consultants and contractors, to compete in this environment. When invoices and change orders take too long to process and ST partners are not paid promptly, they take on additional, unplanned work expenses. As consultants and contractors decide which projects to bid on, they now have a range of options or add a premium to their bids to cover the risk of delayed payments and other challenges of working with ST. When firms decline to bid on ST projects, it has a material impact both on the commitment to supporting small, disadvantaged, women or minority-owned businesses and to the overall bottom line. The TAG recommends a holistic and robust assessment of contractual processes and their impacts on ST's valued business partners.

- **Strengthen and enforce an agency betterment policy.**

ST has a regional mandate to complete a 116-mile regional light rail system, implement bus rapid transit, and operate commuter rail across its three-county district. Unlike WSDOT, it does not have commensurate legislative authority to execute projects and therefore must negotiate its way through the 53 jurisdictions it serves. It does not have the responsibility, nor should it feel the obligation to build whatever is requested of it by those jurisdictions.

ST is designated as an essential public facility, though this authority has gone largely untested.

The TAG recommends creating a comprehensive betterment policy that outlines what the agency is responsible for providing as part of a capital project, including required mitigation measures, and how to address betterments requested by partner jurisdictions. The policy should also address how to proceed when partner jurisdictions fail to work in good faith or break previously agreed-to agreements. This policy will provide staff and partner agencies with clarity on how ST will scope projects in the future.

- **Engage the Federal Transit Administration (FTA) as a delivery partner equally invested in delivering transit to the region.**

While ST is regulated by the FTA, the FTA is also a partner in delivering the voter-approved ST3 program and has a responsibility to assist ST in meeting project schedules. The agency is under resourced and is juggling multiple significant programs in Region 10, and this has an impact on ST. Some document review times that should take a couple of months are taking a year, and these delays compound those that the agency faces for other reasons.

Recent partnering efforts between the two agencies have seen some results and should be built upon. The TAG recommends ST and its Congressional delegation engage with FTA to find ways to provide necessary resources and to establish agreed-upon approaches and review times for the multiple regulatory processes necessary to deliver ST3.

Background

As demonstrated in Figure 1, the agency is facing a sobering amount of work to deliver the largest capital program in the agency's history and one of the largest in the nation. Facing a significant affordability gap – and the reality of the delays facing each of the projects in the capital development program – the Board embarked on a realignment process. In August 2021, the ST Board passed Resolution R2021-05 outlining the agency's efforts to address the outcomes of the realignment process.

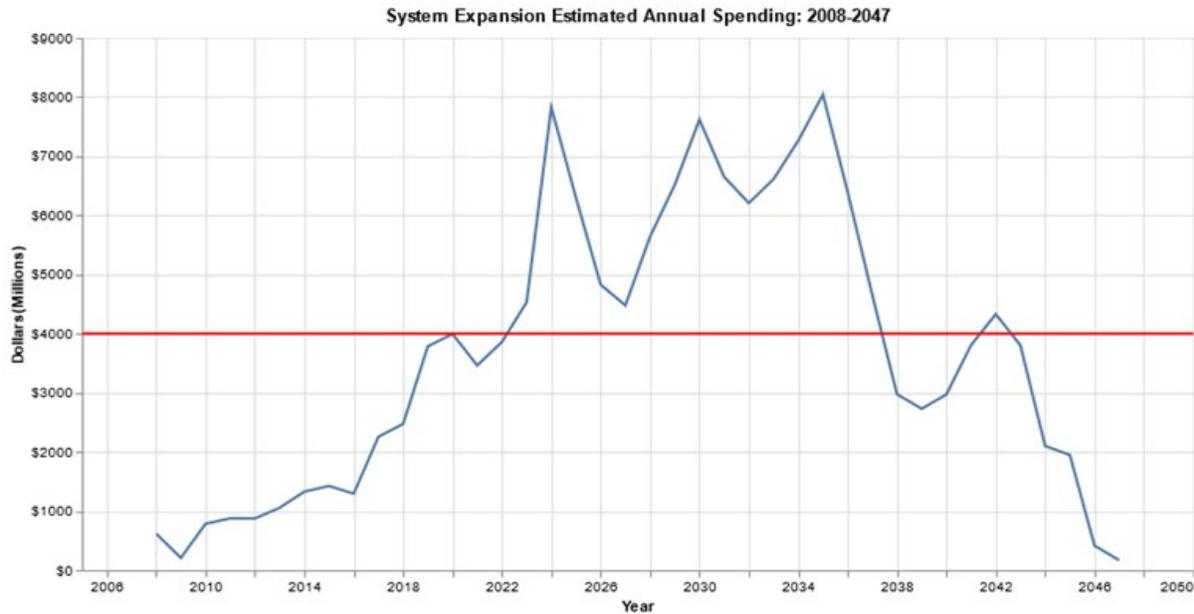


Figure 1 – System Expansion Estimated Annual Spending: 2008-2047. Passed in 2008 (ST2) and 2016 (ST3), the combined estimated annual spending required to deliver the remainder of ST2 and the entirety of ST3 is extremely high over the next couple decades. Actual spending is depicted prior to 2022, with beyond 2022 being projected spending.

One of the cost- and schedule- saving measures within this resolution directed the agency's CEO at the time to convene a group of technical experts with the mission of:

“...looking for all possible ways to accelerate system expansion, highlight schedule risk including current project delivery timelines, and identify opportunities to mitigate risk, streamline third party negotiations, reduce permitting delays and expedite the delivery of said projects.”

This group, to later become known as the Technical Advisory Group (TAG), was convened in June 2022 and consists of eight members: Grace Crunican, Ken Johnsen, Roger Natsuhara, Jim Linthicum, Greg Johnson, Connie Crawford, Eric Goldwyn, and Dennis O'Neill. TAG members bring extensive mega project experience in the US and overseas, as indicated in their bios in Appendix D.

The team was tasked with completing three deliverables:

1. Conduct a comprehensive review of relevant documents that include recommendations for ST (e.g. System Expansion Implementation Plan, Triunity's recommendations, Eno Center for Transportation's 2021 report Saving Time and Making Cents: A Blueprint for Building

Transit Better) and provide an expert opinion(s) of applicability and expected results from incorporating those recommendations for project delivery schedule acceleration.

2. Using at least one ST3 project as a case study (such as EVLE), analyze the project details and affordable/target schedule dates to inform the group's recommendations to accelerate delivery.
3. Prepare a report with specific recommendations for the ST Board to explore in accelerating the expansion program, highlighting schedule risks and identifying opportunities to mitigate risk, streamline third party negotiations, reduce permitting delays and expedite the delivery of projects.

The TAG has conducted more than 50 interviews with ST Board members, staff, consultants, contractors, and other agencies, held two, two-day in-person workshops, and completed and presented their first deliverable to ST's System Expansion Committee (SEC) on October 13, 2022. The [slide deck](#) and a [video recording](#) of the presentation can be found on the ST website.

The first deliverable was to review the recommendations from earlier groups, including Triunity, the Eno Center, and ST's own System Expansion Implementation Plan. TAG members found these earlier recommendations would be beneficial to the agency if followed and managed properly. Of the dozens of recommendations included in those reports, the TAG recommends prioritizing improvements to governance, organizational structure, project controls and third-party management. These changes would yield the greatest return on expediting delivery of the system.

The second deliverable, a case study of a ST project(s), is woven throughout the narrative of this report. The TAG needed to look at both ST2 and ST3 projects to capture projects that have already moved through the planning and construction process. As part of their work, the TAG researched and reviewed planned and current completion dates for ongoing capital development projects. As the table below demonstrates, both ST2 and ST3 projects are significantly delayed.

Sound Transit 2 & 3 Link Projects			
Project	Anticipated Completion Date at Time of Ballot Measure	Anticipated Completion Date	Delay
NORTHGATE LINK EXTENSION	2020	2021	1 year
LYNNWOOD LINK EXTENSION	2023	2024-2025	1-2 years
EAST LINK EXTENSION	2020	2025	5 years
SOUTH 200TH ST LINK EXTENSION	2015	2016	1 year
HILLTOP LINK EXTENSION	2021	2023	2 years
FEDERAL WAY LINK EXTENSION	2023	2025	2 years
DOWNTOWN REDMOND LINK EXTENSION	2024	2025	1 year
EVERETT LINK EXTENSION	2036	Target schedule: 2037 Affordable schedule: 2041	1-5 years
WEST SEATTLE LINK EXTENSION	2030	2032	2 years
BALLARD LINK EXTENSION	2035	Target schedule: 2037 Affordable schedule: 2039	2-4 years
TACOMA DOME LINK EXTENSION	2030	2032	2 years

Table 1 – Total schedule delay of ST 2 & 3 Link Projects from anticipated completion date at time of ballot measure. When measured from the anticipated completion date at the time of the ballot measure put forward to voters, virtually every ST2 and ST3 project is behind schedule. Projects listed in black text are ST2 projects, and projects listed in blue text are ST3 projects.

Note: The Federal Way Link Extension was originally proposed within the ST2 package as an alignment that went from SeaTac to the Redondo/Star Lake area near Federal Way. At that time, it was scheduled to open by 2023, which is the date used here in attempt to capture what was originally promised to voters. However, the 2008 recession resulted in a 2009 program realignment. Design for the entire FWLE alignment continued, along with plans to build only to Kent Des Moines (deferring construction south of Kent Des Moines). ST3 funded completion of construction for the entire alignment, hence its listing as an ST3 project here.

Recommendations

In Task 1, the TAG identified and prioritized the major issues that are impeding ST from efficiently executing its major capital program on time and on budget. In Tasks 2 and 3, the TAG developed the following recommendations to improve agency performance, citing case studies where applicable. Each recommendation shares a specific goal: to streamline project decision-making and execution as the agency faces a monumental increase in its capital program. These

recommendations include:

1. Rebuild trust and clarify the roles and responsibilities of the ST Board and staff.
2. Introduce an experienced megaproject capital program executive team.
3. Implement procedures that push decision-making down to the lowest level practical and foster an environment that encourages decision-making in general.
4. Align key procedures with industry best practices, eliminating unnecessary steps and associated delays.
5. Strengthen and enforce an agency betterment policy.
6. Engage the FTA as a delivery partner equally invested in delivering transit to the region.

Recommendation 1: Rebuild trust and clarify the roles and responsibilities of the ST Board and staff

The Board has specific core responsibilities:

- establishing policy
- providing direction and oversight
- managing the CEO
- identifying ballot measures for voter approval of regional transit projects
- maintaining the Long-Range Plan that identifies potential projects to submit to voters
- adopting budgets, including establishing baselines for project scope, schedule, and budget
- approving major contracts
- making key decisions at critical milestones of every voter-approved project, including:
 - identifying alternatives to include in environmental review
 - selecting the preferred alternative
 - determining the final project to be built

ST staff have the responsibility to implement Board policy, as well as to recommend which alternatives to analyze, recommend a preferred alternative, manage design and construction, and operate a transit system. When the organization is functioning as it should, staff would brief the Board periodically on project activities, without seeking Board direction or approval on what should be staff-level decisions.

In recent years, there has been a breakdown of trust between Board members and staff. Board members have not been told of critical information about projects in a timely manner, and this lack of information has led some to feel they must engage more deeply in the technical and operational details in order to fulfill their duties. Staff members have noted real concern and hesitation about the consequences of bringing difficult news to the Board, so they delay reporting challenges or bad news, thereby reinforcing the lack of trust.

Since 2021, ST has replaced its CEO, undergone realignment, invited outsiders to examine internal practices, disclosed several significant delays to ST2 projects, and hosted difficult conversations about ST3 projects. This has revealed a significant lack of trust between Board and staff, resulting in delayed and inefficient decision-making.

For the recommendations in this report to be effective, this situation must be rectified for ST to deliver on its promise to provide a comprehensive regional public transportation network.

This lack of trust delays decision-making in a way that is unsustainable. As ST3 projects enter construction and contracts are tendered, the volume of information coming to the Board will increase exponentially. The TAG heard that bringing items to the Board for review or approval requires a minimum of four weeks and 23 steps, taking a significant amount of staff time and attention. Calendaring logistics sometimes result in further delays of two to three months due to limited space on a particular Board agenda. Limiting the type and number of items that require Board action will reduce project delays, free up staff to focus on project delivery, and allow the Board to focus on overall policy, direction, and oversight.

Delays to the NEPA process, especially on larger projects like the West Seattle and Ballard Link Extensions project, can result in hundreds of millions of dollars in cost increases. The TAG strongly recommends that if the Board decides to extend a comment period or delay a decision for further study, the costs of such a delay be quantified and acknowledged by the Board with an amendment to the project budget.

The TAG also recommends that the Board focus on ST3 programmatically, freeing up needed capacity for policy debate and decision-making. The volume of actions going to the Board has increased beyond what can be accomplished in a reasonable Board calendar and will continue to grow. As a result, decisions needed to advance projects are delayed for months pending Board access, impacting overall project schedules and budgets. To avoid this bottleneck, the Board should set overall project budgets (including contingency), and leave project direction and spending decisions to staff, within Board-approved project and budget definitions.

As an example, once a project budget is authorized, ST's Real Property team should be authorized to acquire the properties it needs in the sequence that makes sense rather than seek approvals section by section with the exception of condemnations. Currently, Real Property can only bring 50 property acquisitions to the Board at a time. While that may have been appropriate for U Link, ST estimates that between 500 and 700 properties will need to be acquired to construct West Seattle and Ballard. By breaking up this process into multiple visits to the Board, ST forgoes opportunities to streamline the process, save money on purchases, and pursue joint developments at stations and along corridors, and duplicates outreach and workflows. While there have been previous concerns highlighted about the accuracy of property cost estimates, that should be considered as a separate issue from the mechanism to bring the items before the Board. The TAG recommends that staff have the authority to acquire any parcel needed and only bring forward condemnations.

The Board of course must be informed about projects regularly and hear from staff any issues that impact cost or schedule or point to a fault in ST processes or decisions. Rebuilding trust takes time and a willingness to offer it, if the culture and relationship between Board and staff is going to change.

Recommendation 2: Introduce an experienced megaproject capital program executive team

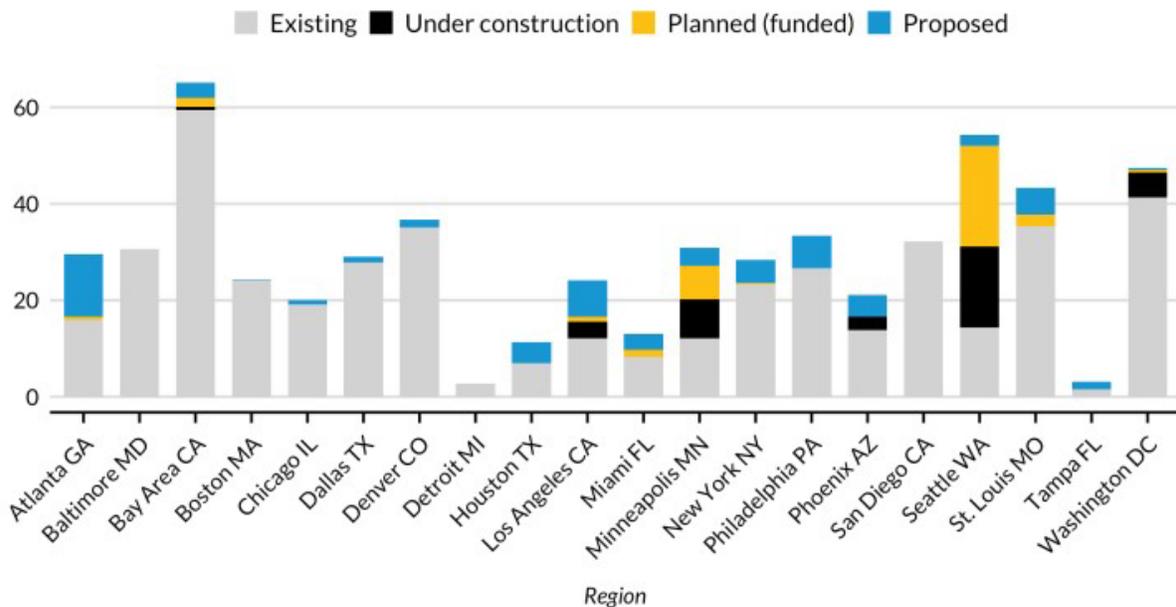
Capital expenditures will stay above \$4 billion annually until at least 2037. This six-fold increase in spending since 2012 shows ST's commitment to lead one of the largest capital programs in the country (see Figure 2), but it also presents an enormous organizational challenge. To deliver the ST3 program and remaining ST2 projects still under construction, the capital program needs executive leadership that has successfully delivered billion-dollar capital programs the scale of ST3. Those experts need autonomy to make decisions appropriately coupled with the expectation to give timely visibility into challenges to project budgets and schedules. This is especially critical when delays pile up and avoidable cost increases accumulate.

The organization must build on the foundation of the current structure and scale up beyond current capacity and expertise if it is going to deliver ST3. As ST2 projects come online over the next two years, ST will need more focus on operations, but capital construction remains central to ST's present and future success. Current capital program leadership has large portfolios of responsibility and leading a program of this size and scope requires a focus solely on delivery. Additional resources are needed to augment current staff, and the organization structure must reflect the priority of this effort.

Over the course of interviews with ST staff, consultants, contractors, and outside experts, it became clear to the TAG that ST needs to create and hire an Executive Director of Capital Program who reports directly to the CEO and is solely responsible for the capital program, with other corporate responsibilities kept to a minimum. This new leader must have significant experience successfully delivering multi-billion-dollar transportation programs in other programs, and is preferably a licensed professional engineer or has similar credentials. This new position is critical to guiding ST2 and ST3 capital delivery and to keeping the CEO and Board accurately and effectively informed about program delivery.

Atlanta, Los Angeles, Minneapolis, and Seattle Have Big Transit Expansion Plans

Kilometers of light or heavy rail lines per million residents by status, 20 most populous US regions



Source: Yonah Freemark; Transport Explorer (2023) Note: Tramway, streetcar classified as light rail.

Figure 2. Comparison of volume of transit agency expansion plans across the nation. Seattle ranks second in total light or heavy rail kilometers per million residents (combination of existing, under construction, planned (funded) and proposed), but first in the nation in total planned kilometers per million residents.

The TAG also recommends creating and hiring new ST2 and ST3 deputy directors who report to the Executive Director of Capital Programs. These two deputies will manage project directors who will lead projects from start to finish, supported by ST staff from Planning, Environment, and Project Development (PEPD), Design, Engineering, and Construction Management (DECM), Operations, and other relevant departments. The current cross-functional project teams, which rotate leadership based on project phase, undermine project momentum and muddy accountability for project progress.

The ST2 and ST3 deputy directors should be licensed engineers or equivalent with extensive experience managing other successful multi-billion-dollar transportation capital projects. Ideally, they will bring to ST the cultural changes necessary to transform project delivery and make ST an "owner of choice."

The Executive Director of Capital Programs and ST2 and ST3 deputy directors should regularly brief the CEO and the Board. Their involvement will help the CEO and Board have a better grasp on ST2 and ST3 projects and foster more transparent communications.

The TAG observed that staff believe they do not have the authority or standing to reject after cursory review project alternatives that have significant flaws or impose unacceptable constraints. Studying improbable alternatives suggested by the Board, the public or others during the planning and design phase wastes time and distracts the project team from its goal of advancing progress.

It is the TAG's recommendation that these new positions would be empowered and expected to give a clear yes or no to changes during the planning stages and subsequently empower other staff to lead consultants effectively during the design stage.

Recommendation 3: Implement procedures and foster an environment that pushes decision-making down to the lowest level practical

Successful capital programs of all sizes have one common characteristic: clear, efficient decision-making. Delays to multi-billion-dollar projects can cost millions of dollars per day, and failure to make timely decisions can therefore result in both delays to project completion and higher costs that constrain funding.

Project decisions should be made by staff, with a hierarchy of decision-making authority that promotes and supports decisions to be made at lower levels, as appropriate. At present, private sector construction contractors reported that their resident engineers in the field have decision-making authority of up to five million dollars, while their agency counterparts only have decision-making authority up to \$50,000. As a result, the contractor's resident engineer can make decisions quickly to match the needs and pace of the project while the agency's resident engineer is required to run any changes over \$50,000 up the chain, which inevitably takes time. Additionally, the TAG heard feedback that agency resident engineers often pass decisions up to their superiors even if they fall within their authority. Given the volume and scale of work related to ST3 delivery, this hesitancy to share information and make decisions must be fixed, or delays and cost increases will continue.

The TAG recommends ST develop a robust "lessons learned" process that assesses all decisions - good and bad - and uses that experience to promote better outcomes in the future. Risk is inherent in capital development, and things will go wrong; the key is to incorporate lessons and adapt quickly, and to share information quickly and appropriately with the Board to build trust. Staff need to be trained and supported in taking risks and making decisions that are appropriate for their level of responsibility, and executive leadership must show their commitment to transparency.

Recommendation 4: Align key procedures with industry best practices, eliminating unnecessary steps and associated delays

The TAG recommends that ST work to become viewed as an "owner of choice" in the business community. However, in conversations with firms responsible for delivering ST2 and ST3, the TAG heard that firms prefer to work for other public agencies if given the choice. In fact, two reputable firms who worked on ST2 projects indicated to the TAG they will stop bidding on future ST projects. This negative perception of the agency will only hinder ST's ability to deliver ST2 and ST3 projects on schedule and within budget as work from other regional agencies and the state becomes available. For example, a small, minority-owned business owner said he often waited months to receive approval for a change order, though he was expected to continue working at risk, which is a substantial roadblock for his business. Some delays were related to the recommendation three - ST staff members not wanting to make decisions but rather to continue to elevate the discussion so as not to be responsible for the final outcome. The lack of timely payment or approvals while expecting contractors to continue working has severely degraded ST's reputation in the contractor community. Given the significant capital programs underway at other regional public agencies, this puts ST at a competitive disadvantage.

The TAG recommends that the CEO champion a disciplined baseline evaluation of current processes, such as invoice processing, change order management, and project close out, and assess against industry best practices. While piecemeal improvements have been made, the agency needs a more holistic approach to stripping out unnecessary steps and establishing industry-accepted norms for each process (e.g., 120 days for contract close-out, 60 days for processing a change order, 30 days for processing invoices). After setting a performance goal for each process, every step and every party involved should be evaluated as to whether that involvement is essential and contributes to success.

Equally important, ST needs to assess what data is tracked and how. The DECM team attempted to map out the change order process, but because of current data recording practices, namely having the consultant construction managers from each project determine how to input data, there are inconsistencies that undermine trust in it. As a consequence, it is not possible to compare processing times between projects (such as Federal Way and East Link). Without a standardized approach to data management, it is difficult to develop lessons learned, apply those lessons learned to future projects, and determine whether ST has improved from project to project.

The functions included under Portfolio Services Office are well suited to take on this task. Benchmarking against other agencies that are considered owners of choice is recommended.

ST should make more effective use of standardized unit costs to facilitate more efficient change order processing. Adhering to the unit cost price of materials or the construction cost of a cubic yard of concrete and including these costs in construction contracts can reduce administrative burden, facilitate negotiations with contractors, and minimize processing times. This approach is used successfully in Spain, Italy, Turkey, and by many domestic departments of transportation.

Recommendation 5: Strengthen and enforce an agency betterment policy

ST's multi-billion-dollar capital plans are often viewed as an opportunity for municipalities to extract improvements or upgrades from ST. The TAG received conflicting answers as to whether ST has an existing approach for addressing these situations; if there is a full policy, it is not widely known or understood.

The TAG recommends that ST establish or strengthen and adhere to the betterments policy that limits ST expenditures to the cost of essential transit improvements in accordance with ST3 based on design standards established by the agency, along with any mitigation measures required as a result of formal environmental review. Any betterments requested by a local jurisdiction that exceed ST's standards should be wholly or largely the responsibility of the local jurisdiction. ST must work with regional partners in a collaborative

ST service extends into 53 different municipalities, and each municipality can withhold permits and seek betterments in exchange for closing a street during construction or allowing a light rail station in its jurisdiction. ST is especially vulnerable to these tactics because it was committed to building ST3 as approved by voters in 2016 prior to securing these agreements. Betterments above the required mitigations should be greatly scrutinized for the value they add to the transit project and the reasonableness of the request from the local jurisdiction.

way, and partners must return the favor. When agreements are reached, they must be honored, and negotiations around necessary rights of way and permitting needs should be considered in this light of partnership and greater good for the region.

To facilitate reviews and expedite permitting, the TAG understands that ST may provide resources to municipalities that need it. The TAG commends this collaborative approach.

In interviews, the TAG heard examples where an under-resourced municipality rejected a contractor's construction plan because the consulting engineer for the local jurisdiction did not understand a routine WSDOT concrete standard. Resolving this misunderstanding, which consisted of educating the consulting engineer about the standard, added a 12-week delay. In other cases, municipalities have wrongly asked ST to cover the costs of road widenings adjacent to a new right of way, pay exorbitant mitigation costs to get permits to shut down traffic lanes and roadways, or use more expensive materials than required by code.

Underlying the betterment policy, ST needs to develop standard station designs and set acceptable standards for sidewalk restorations, pipe replacements, backfill aggregate, and other common, predictable third-party issues that have arisen during ST2 projects. LA Metro has such a policy in place, and through their existing partnership with ST, could provide helpful feedback as to how the agency could implement a similar policy.

Other jurisdictions have used different approaches to address the challenge of containing betterments. MetroLinx in Ontario has master permitting authority within 50-feet of its approved right of way, which shifts the permitting responsibility from jurisdictions to Metrolinx. In New York, there is proposed legislation that would establish a maximum 30-day review period for utility relocations and hold the utilities liable for any contractor impact costs resulting from delay. Other models exist globally. In Italy, the *Conferenza di Servizi*, or Conference of Services, brings one representative from each third party - in this instance, only government entities - together over a fixed period to meet and determine mitigations. All parties must agree to the final Declaration of Public Utility. If a third party fails to send a representative or that representative doesn't participate, it is assumed that the silent third party approves the project as specified by the agency's project documents.

Recommendation 6: Engage the FTA as a delivery partner equally invested in delivering transit to the region

Slow reviews by the FTA, the federal agency responsible for managing the environmental review process in accordance with the National Environmental Policy Act (NEPA), are compounding delays of ST projects. In the System Expansion Implementation Plan, ST planned to move projects through the development phase within four to four and a half years. West Seattle and Ballard and Tacoma Dome Link extensions have already surpassed the four-and-a-half-year mark in the Draft EIS phase. Some FTA reviews that are scheduled to take a couple months are taking a year or more. Thanks to efforts within PEPD, some of the drivers of these delays are abundantly clear and can be compared against other ST projects (Appendix C).

FTA shares the commitment to transit delivery, but to better serve the region, the role must be seen as project partner, not simply oversight. The TAG recommends that ST support efforts to gain additional resources for the FTA as required to meet NEPA review timelines. The TAG recommends the following approaches:

- Work with FTA to identify firm agreed-upon review times and establish an accountability protocol so that if FTA cannot meet that guideline, they must provide options for regaining time or use of alternative pathways including utilizing Section 139j, which is already utilized by ST, or other resources in more aggressive ways.
- Continue partnering efforts currently underway, acknowledging that if FTA is not adequately resourced, ST cannot meet their commitments to the region.
- Work jointly with FTA, supporting recent efforts to streamline reviews and to fully resource the agency in a way that recognizes the scope of work in coming years.
- Engage Congressional delegation to support better funding and resourcing for Region 10.

Conclusion

The recommendations in this report will be challenging to implement and will take a focused and steadfast commitment by all parties tasked with delivering ST2 and ST3 projects. Transit in general, and ST in particular, play a pivotal role in the region's ability to address multiple public policy needs. A functioning transportation system; climate resiliency; a thriving workforce; affordable housing – a dense urban environment relies on public transportation to facilitate all of these and more.

ST's work to date benefits thousands of riders every day. Without significant investments in change, the sheer volume of work associated with ST3 will overwhelm the agency as it is currently structured and functioning. But with its recommended changes, the TAG believes ST3 can be delivered more quickly than currently envisioned, and that the agency, along with current and future riders, will reap the benefits for decades to come.

Appendices

Appendix A: Implementation of Recommendations

	Challenge	Recommendation	Implementation	Outcomes	Timeline	Lead	Oversight
1	Trust is broken between Board and staff, leading to delayed decision-making.	Rebuild trust and clarify the roles and responsibilities of the ST Board and staff.	<ul style="list-style-type: none"> • Explicitly identify why trust has broken between Board and staff and how it can be rebuilt. • Review and revise Board bylaws and procedures to focus on policy and major programmatic decisions. • Limit the type of actions that require Board input and approval. • Include staff recommendations on all actions going to Board. • Identify cost and schedule impacts of alternatives coming to Board for decision, as well as the monthly cost of a delayed decision. Amend project schedules and budgets accordingly. 	<ul style="list-style-type: none"> • Board capacity is reserved for policy-level discussions and decisions. • Board calendar limitations do not cause project delays and cost increases. • Staff morale is improved. • Staff members provide information when it is known and utilize their expertise to share the risks and benefits of specific decisions put forward for action. 	2 months	SEC Chair	Board Chair

	Challenge	Recommendation	Implementation	Outcomes	Timeline	Lead	Oversight
2	ST2 projects are behind schedule, and ST3 has already experienced delays across multiple projects.	Introduce an experienced megaproject capital program executive team.	<ul style="list-style-type: none"> • Create three executive positions: Executive Director of Capital Programs, ST2 Deputy Director and ST3 Deputy Director. • Recruit executives from outside the agency with successful mega transportation program experience for the roles. • Vest the executive team with authority to make decisions. 	<ul style="list-style-type: none"> • Cultural change is achieved through infusion of new experienced leadership team. • Board gains confidence in staff reports and recommendations. 	4 months	CEO	SEC Chair
3	Project level decision making is inefficient, commonly taking several months to resolve questions resulting in project delays and increasing fees.	Implement procedures that push decision-making down to the lowest level practical and foster an environment that encourages decision-making in general.	<ul style="list-style-type: none"> • Modify procedures to authorize project decisions at lowest level possible. • Conduct training and coaching program to promote staff-level decisions. 	<ul style="list-style-type: none"> • Construction managers in the field are empowered to make decisions. • Project delays due to prolonged decision-making are reduced. • Staff feel empowered. 	6 months	Executive Director of Capital Programs	CEO

	Challenge	Recommendation	Implementation	Outcomes	Timeline	Lead	Oversight
4	Contractors charge ST a premium to cover the financial risks of unforeseen delays, slow decision making, and administrative burden.	Align key procedures with industry best practices, eliminating unnecessary steps and associated delays.	<ul style="list-style-type: none"> • Establish timeline goals for key procedures, such as invoice processing (30 days), change order processing (60 days) and contract close-out (120 days) based on industry best practices. • Revise procedures to meet the goals by eliminating unnecessary steps and parties. • Clarify how procedures are measured (e.g., when does a change order start), and ensure consistency across the program. • Train staff on the new procedures. • Monitor performance, recognize successes and assess failures for improvement. 	<ul style="list-style-type: none"> • Key procedures are aligned with best industry practice. • Staff time is available to perform other tasks. • ST is considered an “owner of choice” which attracts bidders and results in competitive pricing. 	6 months	CEO	SEC Chair

	Challenge	Recommendation	Implementation	Outcomes	Timeline	Lead	Oversight
5	Agency is facing increasing costs and schedule delays associated with betterments.	Strengthen and enforce an agency betterment policy	<ul style="list-style-type: none"> • Establish ST design standards (e.g., stations and parking structures) • Establish protocols to address requests by Authorities Having Jurisdiction (AHJs), including cost allocation and schedule constraints. • Take full advantage of agency’s designation as an Essential Public Authority. 	<ul style="list-style-type: none"> • ST expenditures are limited to legitimate transit purposes. • Project budgets and schedules are not subject to prolonged 3rd party delays. • Authorities Having Jurisdiction (AHJs) understand limits and consequences of Betterment requests. 	3 months	CEO	SEC Chair
6	FTA permitting review times have grown, causing schedule delays and cost increases.	Engage the FTA as a delivery partner equally invested in delivering transit to the region.	<ul style="list-style-type: none"> • Engage with FTA to set reasonable timelines and alternatives to be studied. • Engage Congressional delegation to press FTA to prioritize and deploy sufficient resources for the ST program. 	<ul style="list-style-type: none"> • FTA NEPA reviews are conducted on schedule 	4 months	CEO	SEC Chair

Appendix B: Supplemental Information

The following section outlines additional recommendations that were not included in the main body of the report, but that the TAG nonetheless views as important for the agency to implement.

Most of our primary recommendations in this report are intended to help make ST an “owner of choice.” Additional focus points for improvement include:

- Commit to open communication and frequent outreach meetings with AGC and ACEC members to establish a forum of partnering and trust.
- Well defined and consistent Quality and Environmental Programs for both Construction Management and Prime Contractor teams.
- Established Construction Manual and Standard Specifications.
- Commit to effective partnering and use of Dispute Resolution Board, if necessary
- Implement a clear and consistent process for tracking nonconforming work (NCRs).
- Establish auditing, training and materials tracking programs.

The TAG recommendations provide a path for minimizing risks, namely schedule and scope uncertainty, which in turn affect a contractor’s bottom line and resulting bid pricing. ST capital spending is ramping up at the same time that infrastructure money is flooding into the region, with WSDOT and the Port of Seattle both launching multi-year, multi-billion-dollar capital plans. If other agencies are more attractive to bidders, there will be reduced competition on ST bids, resulting in higher prices.

The TAG also recommends that ST continue to improve its communications with contractors and its payment processing times. We further recommend that the CEO engage with contractors directly, just as the WSDOT Secretary of Transportation does, in order to hear from them directly.

FOCUS ON WHAT’S ALREADY ON ST’S PLATE

ST2 is a huge program and with the passage of ST3, ST has one of the largest transit capital programs in the nation. The focus of the agency in particular and the region in general should be on delivering the current program by maximizing other federal or grant funds that can be matched by local funds currently available. Discussion of any future local tax measures at this time will only distract and disrupt from the delivery of ST2 and ST3.

CONTINUE TO INVEST IN PARTNERING

As detailed in Appendix H, the TAG spoke to a diverse cross-section of ST employees ranging from higher level management to field staff responsible for project delivery. The group also interviewed several contractors, as well as a panel of AGC members. In conducting these conversations, the group found an impressive partnering framework at ST. ST’s best practice of employing an expert partnering provider indicates that the agency recognizes the importance of this tool in effective project delivery.

However, one theme the TAG heard from several contractors is that partnering efforts at ST are becoming less effective. The common agreement on reasons for this diminishing effectiveness are:

- lack of commitment to the process at the highest levels of the agency
- lack of involvement at those critical senior executive levels
- rejection of partnering by some front-line staff members

- slow or delayed action on recognized issues
- abandoning partnering charter when issues become controversial or potentially expensive

The East Link project was brought up as a prime example of partnering at ST that faltered when issues reached a level of unexpected complexity.

Traditionally, formal partnering is undertaken with construction contractors. However, a partnering attitude should reside in the agency’s culture and be informally implemented with consultants, local agencies, utilities, and project stakeholders in general.

With a large program looming and multiple delivery methods being employed, partnering can and should play a significant role in the future of project delivery at ST. The TAG recommends the following measures be taken to ensure partnering remains a priority for the agency moving forward:

1. ST should reinvigorate its commitment to robust partnering at all levels of the agency.
2. ST senior managers should demonstrate the commitment to partnering by participating in partnering sessions and committing to, and signing, the agreed charter.
3. ST should reinforce prompt decision making, and decisions being made at appropriate levels, by having a clear chain of command and empowering staff to carry out partnering charter provisions.
4. ST should continue the use of partnering specialized resources.
5. ST should use results from successful partnering to implement best practices to its delivery standard operating procedures.

The TAG spoke to ST staff regarding the status of Dispute Resolution Boards (DRB) at the agency. There is general agreement that when deployed and supported by the agency, its use has been successful. However, the tool seems to have limited use and has had one panel dismissed.

DRB are not decision-makers. However, they do make recommendations to the parties on the contractual merits of construction disputes. Although ST may not agree with a DRB recommendation, it should seriously consider the risks of not resolving the dispute at that time. Under no circumstances should a contractor whose claim has full or partial merit be denied payment because of project budgetary pressures.

EXPLORE OPTIONS TO EXERCISE POWER AS AN ESSENTIAL PUBLIC FACILITY

From discussions with staff, we believe the rights and powers of ST as an “essential public facility” under the law have not been clearly defined. The TAG recommends that ST’s General Counsel determine the maximum extent of the agency’s authority.

This may sound contrary to a partnering culture (as discussed above) but it is in fact complementary. Just like a partnered construction project has a detailed contract and roles and responsibilities as its basis for decision making, so should every agreement with local agencies, utilities, or other stakeholders.

CONTINUE TO COLLABORATE WITH OTHER TRANSIT AGENCIES AND FEDERAL PARTNERS

Across the country there is great interest in building infrastructure faster and cheaper. The MTA in

New York recently made a presentation to its Board about why it is so expensive to build transit projects in New York. LA Metro created an Early Intervention Team to investigate how to improve project delivery. At the federal level, the White House has convened roundtables about how to build infrastructure projects more affordably. This is a moment to reach out to other agencies and federal partners to see how ST can help and learn from others experiencing similar challenges.

Appendix C: Project Development Milestones and Durations

“Project Development” for ST light rail expansion projects is typically structured as three phases of work, conducted under one large A/E contract that provides engineering, planning, environmental analysis, technical documentation, and community engagement support.

Phase 1. Alternatives Development: project level planning and screening analysis; robust engagement with public, stakeholder groups, elected officials, and inter-agency and Tribal government coordination. Culminates in an environmental scoping process and the Board of Directors identifying a preferred alternative and other alternatives to study in a Draft Environmental Impact Statement (EIS).

Phase 2. Conceptual Engineering & Environmental Review (Draft EIS): for LRT extensions, typically involves development of a Draft EIS that evaluates multiple alternatives. Culminates in Draft EIS comment period and subsequent Board of Directors action to confirm or modify the preferred alternative and other alternatives to study in a Final EIS.

Phase 3. Preliminary Engineering & Environmental Review (Final EIS): typically involves advancing design and engineering for the preferred alternative and preparing a Final EIS. Culminates in issuing a Final EIS and Board of Directors action to select the project to build, including route/alignment and station locations. Following Board action, the FTA typically issues its NEPA Record of Decision. This establishes readiness for the project to be implemented (final design, property acquisition, construction, operations).

The graphic and table below outline these three key milestones within the planning/project development phase of a typical light rail extension project. It also identifies critical “predecessor” tasks or milestones that inform decision making by the Board of Directors. The ideal or target durations for each phase per the System Expansion Implementation Plan (SEIP) is shown. The three large light rail extension projects under ST3 that are currently in project development are then shown, with initial schedule targets and the status or actual durations for milestones achieved. The initial schedule targets were established prior to the COVID-19 pandemic; and prior to the Board of Directors’ action to adopt a realigned capital program.

PROJECT	0 YEARS	.5 YEARS	1 YEAR	1.5 YEARS	2 YEARS	2.5 YEARS	3 YEARS	3.5 YEARS	4 YEARS	4.5 YEARS
West Seattle and Ballard Link Extensions										
<i>Planned</i>	ALTERNATIVES DEVELOPMENT			DRAFT EIS				FINAL EIS		
<i>Actual</i>	ALTERNATIVES DEVELOPMENT			DRAFT EIS						
Tacoma Dome Link Extension										
<i>Planned</i>	ALTERNATIVES DEVELOPMENT			DRAFT EIS				FINAL EIS		
<i>Actual</i>	ALTERNATIVES DEVELOPMENT			DRAFT EIS						
Everett Link Extension and OMF North										
<i>Planned</i>	ALTERNATIVES DEVELOPMENT			DRAFT EIS				FINAL EIS		
<i>Actual</i>	ALTERNATIVES DEVELOPMENT									

	Phase 1. Alternatives Development	Phase 2. Conceptual Engineering & Environmental Review (Draft EIS)	Phase 3. Preliminary Engineering & Environmental Review (Final EIS)	Total Duration
Key Milestones (Board Actions at beginning and end of Phase)	<p>START: Board Authorizes Consultant Contract</p> <p>FINISH: Board Identifies Preferred Alternatives and other alternatives to Study in a DEIS</p>	<p>START: Board authorizes Phase 2 of Consultant Contract</p> <p>FINISH: Board Confirms or Modifies Preferred Alternative and other alternatives to study in the FEIS</p>	<p>START: Board authorizes Phase 3 of Consultant Contract</p> <p>FINISH: Board Selects the Project to Build</p>	-
Interim tasks or milestones leading to Board Action(s)	<ul style="list-style-type: none"> Consultant Procurement Conduct “Early Scoping” to solicit input on alternatives to consider relative to ST3 “representative project” (>= 30-day comment period) 	<ul style="list-style-type: none"> Design alternatives sufficiently for environmental analysis (i.e., “footprint”) Confirm/complete technical analysis methods Prepare technical reports for EIS (transportation, historic and cultural resources, ecosystems, 	<ul style="list-style-type: none"> Prepare responses to Draft EIS comments from Tribes, agencies, community organizations, public Advance preliminary design (~30% design level), depending on delivery 	-

	Phase 1. Alternatives Development	Phase 2. Conceptual Engineering & Environmental Review (Draft EIS)	Phase 3. Preliminary Engineering & Environmental Review (Final EIS)	Total Duration
	<ul style="list-style-type: none"> Evaluate alternatives against screening criteria (3 rounds: initial screening, "Level 1" screening, "Level 2" screening with engagement from Stakeholder Advisory Committee, Interagency Working Group, and Elected Leadership Group nearly monthly) Conduct "EIS scoping" under NEPA and SEPA (45-day comment period) Complete design to less than 5% 	<p>visual quality, noise and vibration)</p> <ul style="list-style-type: none"> Advance conceptual design to approximately 10-15% design Select delivery method Prepare and revise Draft EIS ST staff and legal review FTA staff and legal review Cooperating Agency and Tribal review (Administrative Draft) (30 to 45-day review period) Revised analysis and finalize EIS for publication Publish Draft EIS (45-day review) 	<p>method, for the preferred alternative</p> <ul style="list-style-type: none"> Update / refine design of alternatives as needed (in response to DEIS comments; to avoid or minimize impacts; etc.) Prepare mitigation plan to address unavoidable adverse environmental impacts Prepare and publish Final EIS and Technical Reports/Appendices ST staff and legal review FTA staff and legal review Publish Final EIS (30-day "no action" period) Prepare draft NEPA Record of Decision (finalized after Board selection of project to build) 	
SEIP Target Durations	Not defined in SEIP Typical target ~18 months	Not defined in SEIP Typical target ~2 years	Not defined in SEIP Typical target ~1 year	4-4.5 years

West Seattle and Ballard Link Extensions

	Phase 1. Alternatives Development	Phase 2. Conceptual Engineering & Environmental Review (Draft EIS)	Phase 3. Preliminary Engineering & Environmental Review (Final EIS)	Total Duration
Schedule (as of Nov 2022)	<ul style="list-style-type: none"> ● Board Motion M2017-119: 9/28/2017 (consultant contract award) ● “Early Scoping” notice: 2/2/2018 ● Early Scoping comment period: 2/2/2018-3/5/2018 (30 days) ● Level 1 Evaluation – ELG Recommendations: 5/17/2018 ● Level 2 Evaluation – ELG Recommendations: 10/5/2018 ● Level 3 Evaluation – ELG Recommendations: 4/26/2019 ● Notice of Intent (NOI) to prepare and EIS in Federal Register: 2/12/2019 ● Scoping Comment Period: 2/15/2019-4/2/2019 (45 days) ● Board Motion M2019-51: 5/23/2019 (identify preferred and other alternatives for EIS) 	<ul style="list-style-type: none"> ● Board Motion M2019-52: 5/23/2019 (authorize consultant work) ● Board Motion M2019-104: 10/24/2019 (Identify additional alternatives for EIS) ● Annotated EIS outline approved by FTA: 11/12/2019 ● Initial Design “Footprint” delivered to EIS team: ~12/16/2019 ● Prepare Draft EIS ● ST and legal review of Admin Draft EIS: 2/3/2020-7/7/2020 ● FTA staff and legal review of Admin Draft EIS: 3/20/2020 – 3/12/2021 ● Coop Agency and Tribal review of Admin Draft: 3/24/2021-5/13/2021 (45-day comment period) ● Revisions through FTA approval to publish: 7/29/2021 – 12/21/2021 ● Draft EIS: Issued 1/28/22 with 90-day comment period ● Board Motion M2022-57: 7/28/22 (confirm or modify preferred alternative) 	<ul style="list-style-type: none"> ● Board Motion M2022-73: 8/25/22 (partially authorize consultant work) 	5 years, 2 months (so far)
Actual Duration	20 months	3 years, 2 months	TBD	TBD

Tacoma Dome Link Extension

	Phase 1. Alternatives Development	Phase 2. Conceptual Engineering & Environmental Review (Draft EIS)	Phase 3. Preliminary Engineering & Environmental Review (Final EIS)	Total Duration
Schedule (as of Nov 2022)	<ul style="list-style-type: none"> ● Board Motion M2017-159: 12/21/2017 (consultant contract award) ● “Early Scoping” notice: 3/28/2018 ● Early Scoping comment period 4/2/2018 – 5/2/2018 (30-days) ● Level 1 Evaluation – ELG Recommendations: 10/12/2018 ● Level 2 Evaluation – ELG Recommendations: 6/14/2019 ● Notice of Intent in FR: 3/26/2019 ● Scoping comment period: 4/1/2019 – 5/1/2019 (30 days) ● Board Motion M2019-75 and M2019-77: 7/25/2019 (identify preferred and other alternatives for EIS) 	<ul style="list-style-type: none"> ● Board Motion M2019-76: 7/25/2019 (authorize consultant work) ● Initial Design “Footprint” delivered to EIS team: 2/12/20 ● Prepare Draft EIS ● Tech Reports (initial drafts to FTA): July-September 2020 ● ST and legal review of Admin Draft EIS: March 2020 – April 2021 ● FTA staff and legal review of Admin Draft EIS: July 2020 – November 2021 ● Coop Agency and Tribal review of Admin Draft: 11/10/2021 – 12/30/2021 (50 days) ● TARGET Draft EIS Publication: Spring 2024 	TBD	4 years, 11 months (so far)
Actual Duration	19 months	3 years, 4 months (so far)	TBD	TBD

Everett Link Extension and OMF North

	Phase 1. Alternatives Development	Phase 2. Conceptual Engineering & Environmental Review (Draft EIS)	Phase 3. Preliminary Engineering & Environmental Review (Final EIS)	Total Duration
Schedule (as of Nov 2022)	<ul style="list-style-type: none"> ● Board Motion M2020-60: 10/8/2020 (consultant contract award) ● “Early Scoping” notice: 11/01/2021 ● Early Scoping comment period 11/1/2021 – 12/10/2021 (40-days) ● Alternatives Screening Evaluation – ELG Recommendations: 4/19/2022 and 9/28/22 ● TARGET: EIS Scoping Notice 1/9/2023 	TBD	TBD	2 years, 1 month (so far)
Actual Duration	2 years, 1 month (so far)	TBD	TBD	TBD

Appendix D: Interview Log

Name	Organization(s)	Role(s)
ST BOARD & STAFFERS		
Dow Constantine	ST Board, King County	ST Board Chair, King County Executive
April Putney	King County Executive Office	Deputy Executive
Calli Knight	King County Executive Office	Director of External Relations
Claudia Balducci	ST Board, King County Council	ST Board Member and Chair of the System Expansion Committee, King County Council Chair
Blake Trask	King County Council	Communications Director and Transportation Lead
Kent Keel	ST Board, City of University Place	ST Board Vice Chair, City of University Place Councilmember
Bruce Dammeier	ST Board, Pierce County	ST Board Vice Chair, Pierce County Executive
Catherine Rudolph	Pierce County	Strategic Advisor, Community and Regional Affairs
Dave Somers	ST Board, Snohomish County	ST Board Vice Chair, Snohomish County Executive
Josh Dugan	Snohomish County	Executive Operations Officer
Nancy Backus	ST Board, City of Auburn	ST Board Member, Mayor of City of Auburn
Roger Millar	ST Board, Washington Department of Transportation	ST Board Member, Secretary of Transportation
ST STAFF		
Julie Timm	ST	CEO
Kimberly Farley	ST	Deputy CEO

Name	Organization(s)	Role(s)
Karen Kitsis	ST	Deputy Executive Director, Capital Project Development
Ryan Fisher	ST	Deputy Executive Director, Financial Planning, Analysis, and Budget
Stephanie Ball	ST	Deputy Director, Financial Planning, Analysis, and Budget
Joe Gildner	ST	Deputy Executive Director - Project Management
Q'Deene Nasagawa	ST	Public Records Officer
Desmond Brown	ST	General Counsel
John Weston	ST	Director of Corridor Operations
Jon Lebo	ST	Deputy Project Director, East Link
Luke Lamon	ST	Manager of Government Relations, East Corridor
Sandra Fann	ST	Acting Director of HCT Corridor Development
Ariel Taylor	ST	Government & Community Relations Officer
Stephen Mak	ST	Manager of HCT Development
Emily Yasukochi	ST	Manager of HCT Development for WSBLE
Ted Lucas	ST	Chief Procurements & Contracts Officer
Eric Beckman	ST	Director of Portfolio Services Office
Faith Roland	ST	Director of Real Property
Don Billen	ST	Director of Planning, Environment, and Project Development
Ron Lewis	ST	Director of Design, Engineering, and Construction Management
Peter Rogoff	N/A	Former CEO

Name	Organization(s)	Role(s)
Brooke Belman	ST	Chief of Staff, former Acting CEO
Matt Preedy	ST	Director of Construction Management
Pat McCormick	ST	Deputy Director of Construction Management
Kent Hale	ST	Deputy Executive of Environmental Planning
Bria Knowles	ST	Acting Executive Director of Planning, Environment, and Project Development
Perry Weinberg	ST	Deputy Executive Director of Environmental Affairs and Sustainability, Senior Legal
ST PARTNERS		
John Marchione	City of Redmond	Mayor, former ST Board Member
Marshall Foster	City of Seattle	Interim Director, Seattle Center
Sara Maxana	City of Seattle	ST3 Program Director
Tim Ceis	Ceis Bayne East, on behalf of City of Seattle	Consultant
Elliot Helmbrecht	City of Seattle	Senior Transportation Advisor, Office of the Mayor
ST CONSULTANTS		
Dave Peters	N/A	Independent Consultant to the ST Board of Directors
Jonnie Thomas	Triunity	Consultant
Jane Donovan	Triunity	Consultant
Andrew Kean	Triunity	Consultant
Neil Flesner	N/A	Consultant

Name	Organization(s)	Role(s)
GROUPS		
Members (7)	Associated General Contractors of Washington	ST contractors, projects varied
Members (5)	Association of Engineering Consultants	ST consultants, projects varied
Staff (5)	Seattle Metropolitan Chamber of Commerce	-
Staff (4)	LA Metro Early Intervention Team	-

Appendix E: TAG Selected Members PPT

Connie Crawford



Consultant with national and international experience in transit and transportation infrastructure projects and was the Chief Engineer for the New York City Transit Authority for 8 years. Currently Director of Rail and Transit for ASTM North America, responsible for rail and transit projects in North America.



Expertise includes:

- Megaprojects
- Working with elected officials
- Transit agency leadership
- Multiple transit modes
- International projects
- Expert panel participation
- Tunneling
- Community engagement
- Construction
- Environmental/planning

Grace Crunican



Former General Manager of BART and Director of SDOT with expertise in obtaining funding for major transportation infrastructure and providing strategies for managing capital programs. Currently working as an independent consultant focusing on financial and project management services.



Expertise includes:

- **Financial management**
- Megaprojects
- Working with elected officials
- Transit agency lead
- Multiple transit modes
- Community engagement
- Construction
- Environmental/planning

Eric Goldwyn



Clinical Assistant Professor and Director of the Transportation and Land-Use Program at New York University; was a contributor to ongoing research efforts on transit-infrastructure costs at the Eno Center and consulted the Governor of New York on congestion pricing.

Expertise includes:



- **Financial management**
- Megaprojects
- Megaprojects with transit
- Working with elected officials
- Multiple transit modes
- International projects
- Expert panel participation
- Community engagement

Ken Johnsen



Consultant experienced in Pacific Northwest large, one-of-a kind, transformational civic projects including Climate Pledge Arena. Currently working as a Strategic Advisor with Shiels Obletz Johnsen consulting firm.



Expertise includes:

- Megaprojects
- Megaprojects beyond transit
- Working with elected officials
- Multiple transit modes
- Prior work with ST
- Expert panel participation
- Community engagement
- Construction
- Environmental/planning

Greg Johnson



Engineer with over 20 years of service as a senior executive in various leadership positions at state-level, public transportation agencies. Currently working as the bi-state ODOT-WSDOT Interstate Bridge Replacement Program Administrator.



Expertise includes:

- Megaprojects
- Megaprojects beyond transit
- Working with elected officials
- Transit agency leadership
- Multiple transit modes
- Expert panel participation
- Community engagement
- Financial management
- Construction

Jim Linthicum



Recently retired engineer from the San Diego Association of Governments where he was the Chief of Project Implementation and Regional Services. Currently working as an independent consultant specializing in alternative delivery methods, environmental clearances, and alternative dispute resolution.



Expertise includes:

- Megaprojects
- Working with elected officials
- Transit agency leadership
- Multiple transit modes
- Tunneling
- Community engagement
- Construction
- Environmental/planning

Roger Natsuhara



Retired Navy Captain and currently serving as Chief Engineer and Development Officer for the Metropolitan Washington Airports Authority.



Expertise includes:

- Megaprojects
- Megaprojects beyond transit
- Working with elected officials
- Transit agency leadership
- Multiple transit modes
- International projects
- Expert panel participation
- Community engagement
- Construction

Dennis O'Neill



Managing Principal and Principal Engineering Geologist of O'Neill Service Group specializing in managing and construction of large transportation and infrastructure projects, including extensive Sound Transit experience.*



Expertise includes:

- Megaprojects
- Heavy civil light rail
- Design-Build/GCCM
- Quality control programs
- Construction risk analysis

****Dennis is one of two candidates endorsed by the AGC.***