

# PERFORMANCE AUDIT

## Report Highlights



Office of the  
Washington  
State Auditor  
Pat McCarthy

## Improving Sound Transit's Project Planning and Design to Reduce Costs

### Note on independence

From 2009 to 2016, State Auditor Pat McCarthy was a member of Sound Transit's Board of Directors. Auditor McCarthy recognized that the appearance of independence could be jeopardized if she were involved in this audit in any way. Once the audit was initiated, Auditor McCarthy recused herself from all meetings and decisions pertaining to this audit. The team conducted this audit with complete independence.

Created in 1993 by King, Pierce and Snohomish counties, Sound Transit is building and operating a high-capacity transit system for the Puget Sound region. Sound Transit has received most of its funding through three voter-approved measures that provide the agency with portions of local sales and property taxes and car tab fees. The most recent measure, called ST3, is one of the largest in the country. It funds an estimated \$54 billion for construction, operations and maintenance over the next 20 years. When complete, Sound Transit's system will connect 16 cities by light rail, 12 cities by commuter rail, and 30 cities by bus in the three counties.

Because Sound Transit has one of the most significant transportation funding packages in the country, some lawmakers have sought to increase accountability and oversight around how Sound Transit uses tax dollars. For example, lawmakers have sought to increase public accountability by mandating direct elections of Sound Transit's Board of Directors. Cost increases and equipment failures on high-profile Sound Transit projects have also raised concerns. Estimates for two light rail extensions increased by \$1.1 billion, 27 percent more than originally estimated. On another light rail project, the station's escalators were not designed for heavy use and broke down repeatedly.

Also of concern to some lawmakers and members of the public is the increase in car tab fees after voters passed ST3 in 2016. In 2019, voters approved Initiative 976, which caps the fee at \$30. If the initiative survives legal challenges, Sound Transit could lose \$328 million annually, nearly 15 percent of its annual budget. Given this funding uncertainty and concerns about cost increases, controlling costs is imperative if the agency is to deliver its construction program on time and on budget. This audit examined how Sound Transit can improve project planning and design to reduce costs.

## Sound Transit could improve project planning and design with more upfront planning and a formal lessons learned process

Though change orders are expected in large, complex construction contracts, they can be costly and their use should be minimized. Change orders are costly because they sometimes involve redoing work and do not take advantage of competitive bidding. Sound Transit could reduce remedial work and other change orders with additional upfront planning. Although striking the right balance is difficult, other transit agencies and leading practices suggest Sound Transit could do more upfront planning to reduce overall project costs.

The agency has spent millions on change orders in part because of design deficiencies and unexpected soil and groundwater conditions. It could strengthen its design review process by double-checking key areas and adopting standard review checklists. In addition, more underground exploration could have uncovered unexpected soil and groundwater conditions and saved Sound Transit money.



Testing underground conditions sometimes involves working in city-center locations.

Photo source: Sound Transit.

### **A formal lessons learned process could help Sound Transit avoid repeating similar mistakes**

An agencywide program to learn from past projects would likely result in a consistent use of best practices and fewer repeated mistakes on future projects. Best practices in project management include capturing lessons learned in a database and reviewing them before beginning new projects. Sound Transit collected some lessons from previous projects, but currently lacks a formal process to ensure the lessons learned inform future projects. Sound Transit is in the early stages of renewing an agencywide program to collect and use lessons learned from past experiences.

## Recommendations

We made a series of recommendations for Sound Transit to improve aspects of its planning and design processes and develop a systematic way to learn from past experiences. Our recommendations to improve planning and design processes include strengthening the design review process to catch more deficiencies and performing more underground exploration to avoid costly change orders when the risk of adverse conditions is high. We also recommended Sound Transit develop an agencywide lessons learned program to learn from past projects and avoid repeating mistakes.