AUDIT OF THE SEATTLE CENTRAL LINK LIGHT RAIL PROJECT'S INITIAL SEGMENT

Federal Transit Administration

Report Number: MH-2003-046
Date Issued: July 7, 2003

Memorandum

U.S. Department of Transportation
Office of the Secretary of Transportation
Office of Inspector General

Subject: ACTION: Audit of the Seattle Central Link Light Rail Project's Initial Segment MH-2003-046

Date: July 7, 2003

From: Alexis M. Stefani
Principal Assistant Inspector General for Auditing and Evaluation

Reply to Attn. of: JA-40

To: Federal Transit Administrator

This report provides the results of our audit of the Initial Segment of the Seattle Central Link Project, a 23.5-mile light rail system in King County, Washington. The Initial Segment replaces the University Link proposed in 1996 and approved for a $500 million Full Funding Grant Agreement (FFGA) by the former Secretary of Transportation in January 2001. According to the project's sponsor, Sound Transit,[1] the project will reduce travel times, improve transit reliability, and increase transportation capacity in the Central Puget Sound region's most congested corridor. The estimated cost of the Initial Segment is $2.437 billion, making it one of the largest transit projects in the United States.

On April 4, 2001 we issued a report on the Department of Transportation's (Department) January 19, 2001 approval of the FFGA for the University Link Project.[2] At the time the project was approved, major changes in the project's tunnel alignment were still being discussed. In addition, the project's cost had exceeded original estimates by $1 billion and its revenue operation date had increased by 2 ½ years. We recommended that the project not be funded until Sound Transit identified and disclosed all issues that could materially impact the project's cost, schedule, and scope. Acting on the report's recommendations, the current Secretary of Transportation held funding for the project in abeyance until a number of financial and timing issues were resolved and Congress had time to adequately review the grant agreement.

[1] Also known as the Central Puget Sound Regional Transit Authority.

[2] Interim Report on Seattle Central Link Light Rail Project, OIG Report No. IN-2001-051, April 4, 2001.

Since that time, Sound Transit has significantly changed its plans for the first section of the light rail system, from a 7.4-mile alignment starting at the University of Washington north of Seattle and ending past the downtown area at Beacon Hill to a 13.9-mile alignment starting in the Downtown Seattle Transit Tunnel and ending at a park-and-ride facility 1.6 miles short of Sea-Tac International Airport. The maps in Figure 2 below provide an overview of the original and revised first sections of the light rail system.

Based on cost per mile, the Initial Segment is the fourth most costly ($174 million per mile) light rail project with an existing or pending FFGA. (See Figure 1.) The FFGA request for the revised segment, which was submitted to the Federal Transit Administration (FTA) for approval in January 2003, proposes a 20.5 percent Federal share of $500 million. This percentage is considerably less than the average percentage of Federal contribution for other light rail construction projects.

Figure 1
Comparison of New Starts Light Rail Projects Cost Per Mile

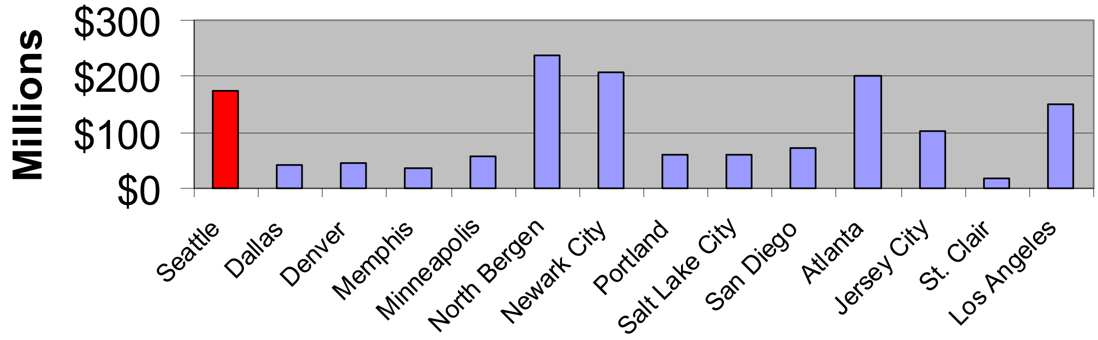


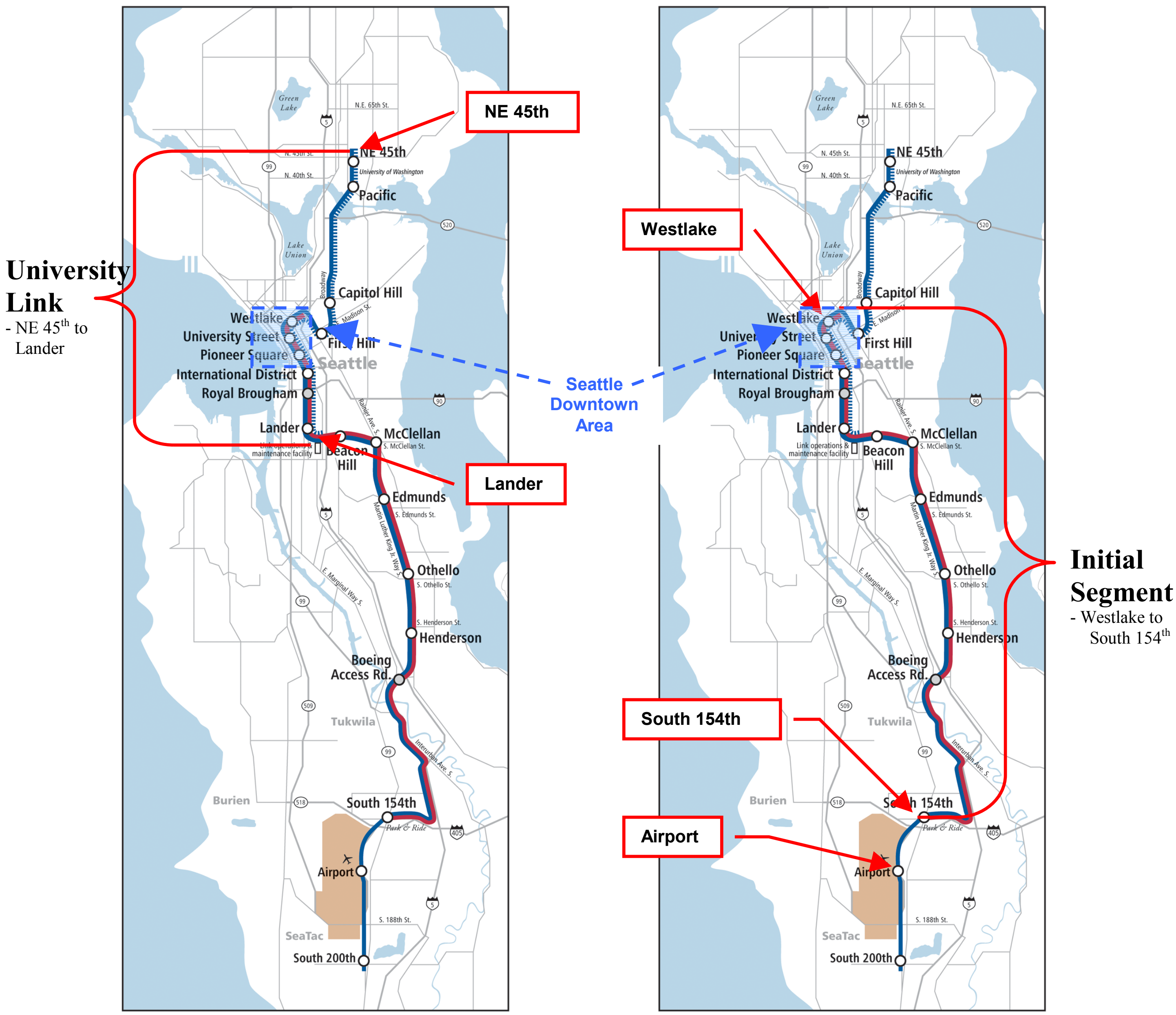
Figure 2: Central Link Light Rail (Seattle, Washington)

Original FFGA for University Link

(Approved by FTA in January 2001, and will be terminated when new FFGA is approved)

New FFGA for the Initial Segment

(Submitted to FTA for approval in January 2003)



Original FFGA		New FFGA Request
7.4 Miles	**Segment Length**	14 Miles
$ 2.602 Billion	**Estimated Cost**	$ 2.437 Billion
$ 352 Million	**Cost per Mile**	$ 174 Million
$ 500 Million	**Federal Share**	$ 500 Million
November 2009	**Completion Date**	July 2009
87,200 (including 39,800 new riders)	**Avg. Daily Riders**	42,500 (including 16,000 new riders)

Concerned about issues reported by the Office of Inspector General (OIG) relating to the first FFGA, the former Chairman of the House Appropriations Committee, Subcommittee on Transportation and Related Agencies, requested that the OIG review Sound Transit's plans for the new 13.9-mile Initial Segment. Our objectives were to:

- Determine whether Sound Transit and FTA adequately addressed cost, funding, and schedule issues identified in our April 2001 report, and evaluate the reasonableness of estimates for the revised project;
- Assess plans for safety and other issues related to running buses and trains in the downtown bus tunnel; and
- Assess the reasonableness of FTA's determination that this project constitutes a stand-alone system and would not require additional segments.

We were not requested to evaluate nor are we opining on the merits of other transportation alternatives, such as expanding the Sounder Commuter Rail and Regional Express Bus System, constructing High Occupancy Vehicles lanes or building a monorail, or FTA's criteria for rating the benefits of the Initial Segment. We also did not assess Sound Transit's plans for future segments of the Central Link Light Rail, as they are not the subject of this FFGA application.

RESULTS IN BRIEF

In responding to the recommendations in our April 2001 report, Sound Transit has significantly strengthened its proposal for constructing the project's first segment. FTA has also done a good job of examining the project's scope, cost, funding, and schedule. At this time, we find the Initial Segment's cost, schedule and funding representations to be reasonable for a project in the final design stages. Moreover, Sound Transit has adequately addressed the safety issues related to operating buses and trains in the tunnel and has met FTA's requirements for a stand-alone system even though the Initial Segment stops 1.6 miles short of the Sea-Tac International Airport. Extending the Initial Segment to the airport would expand the ridership of the system. For example, the airport station at the MARTA system in Atlanta, Georgia, generates as many as 6,000 new daily passengers.

Sound Transit and the Port of Seattle, which operates Sea-Tac International Airport, could not reach an agreement to include the airport extension in the Initial Segment's alignment. The Port of Seattle was reconsidering its airport expansion plans and would not commit to design routes or decisions. However, in January 2003, Sound Transit and the Port of Seattle announced an agreement to complete the extension by 2011—2 years after the Initial Segment is completed. Details of the extension, such as the cost estimate, who will pay for it, and the alignment, have not been settled.

In November 2002, voters of the State of Washington passed Initiative 776 to eliminate, among other things, motor vehicle fees and taxes above a flat $30 fee, including the 0.3 percent motor vehicle excise tax pledged to Sound Transit. As reflected in Sound Transit's Financial Plan, this tax is one of several revenue sources for the Initial Segment. The constitutionality of Initiative 776 is on appeal to the Washington Supreme Court. Because the court's decision and/or subsequent litigation creates uncertainty over the legal status of this important revenue source for the Initial Segment, this report is recommending that Sound Transit's Board of Directors formally agree, in advance of final approval of the FFGA, that alternative local revenues will promptly be committed to the project to the extent that a funding deficit or shortfall is occasioned by the loss of excise tax revenues and related fees.

In its July 3, 2003 response to the draft report, FTA concurred with the recommendation, stating that it will request in writing that the Sound Transit Board of Directors formally agree to actions specified in our recommendation. FTA also stated it will not execute the FFGA prior to written notification from the Board of their agreement, and that it will closely monitor Sound Transit's continuing financial responsibility to operate, maintain and reinvest in its existing transit system as well as the Initial Segment, as is its practice under all FFGAs.

Cost and Schedule

Based on our audit and assessments by FTA's two Project Management Oversight Consultants (PMOC), the $2.437 billion[3] project cost estimate and the July 2009 completion date are fair representations of the Initial Segment's cost and schedule, which are largely based on final design estimates. Final design is the last phase of project development when project sponsors typically complete detailed project specifications and cost estimates needed to request an FFGA. Sound Transit's design is 80 percent complete, and no major construction contracts have been awarded.

Given the present stage of the project, we determined the cost estimate to be reasonable, based on supporting detail for each cost item, underlying assumptions, and the size of the contingency for the project. The purpose of the contingency is to account for a possible future event or a condition arising from presently known

[3] Consistent with reporting requirements for other Federally funded transportation construction projects, the baseline cost estimate of $2.437 billion includes $201 million in debt interest incurred by the project's 2009 completion date, but does not reflect at least $675 million in long term debt interest that Sound Transit estimates is allocable to the Initial Segment and payable between 2009 and 2025. After 2009, Sound Transit also will be required to fully service the outstanding debt.

or unknown causes that cannot be precisely quantified. At $375.1 million, the contingency represents 15 percent of the total project budget, which is within levels considered acceptable by industry standards and consistent with contingency funds on other projects, such as the Woodrow Wilson Bridge in Washington, D.C. At this time, the project's completion date of July 2009 also appears reasonable based on the 6 months of float time built into the schedule. In addition, given that the project is in the later stages of final design, most of the schedule risks have been identified.

Drawing upon our experiences with other projects, such as the Hiawatha Light Rail System, Springfield Interchange, Bay Area Rapid Transit Airport Extension, and Los Angeles Metro Red Line, cost escalation and delays are risks for projects that face difficult and complex design and construction issues. While 80 percent of the design work for the Initial Segment is complete, it is not uncommon for any project at this stage of development to have risks similar to the ones identified in our previous work. If contingencies budgeted for the Initial Segment are not sufficient to mitigate these risks, under the terms of the FFGA, Sound Transit must accept sole responsibility for the payment of cost overruns and will have to decide which sources of local funding it will use should this occur.

Key to minimizing cost and schedule risks will be close monitoring of the project as it moves from design to construction and prompt notification of the Board of Directors and FTA should project costs increase or delays occur. Sound Transit and FTA will need to carefully monitor the following areas.

- **Right-of-Way Acquisitions.** As of May 31, 2003, 10 percent of the 760 right-of-way parcels that Sound Transit must acquire by December 2004 have been obtained. Parcels on the critical path,[4] such as those on the Tukwila Freeway section, must be acquired by October 2004 or the completion of that segment and the entire project could be delayed. Sound Transit has budgeted $233 million for right-of-way purchases, including $44 million for contingencies representing about 12 percent of the overall contingency budget. However, our work on several projects shows that the cost of right-of-way acquisitions can be much higher than budgeted.

- **Designing/Constructing the Alignment Along the Tukwila Freeway Section.** The design and construction of an elevated roadbed over three physically challenging areas of the Tukwila Freeway section—Interstate 5 (a 12-lane freeway), the Burlington Northern Santa Fe-Union Pacific railroad yards (railroads), and the Duwamish River—will require safety and technical coordination with the Washington State Department of

[4] A critical path comprises a sequence of activities for completing a project that have no extra time included for delays. A lag in any of these activities could delay the project completion date.

Transportation (WSDOT) and the railroad companies. The planned completion date for this work is January 2008.

Sound Transit is negotiating an agreement with the railroads to work on their property. However, as we have seen on other projects, such as the Springfield Interchange,[5] design problems and disagreements over payment and coordination of field activities with railroads can cause delays and cost growth.

- **Coordinating Utility Relocations.** Sound Transit is working to secure all necessary agreements on the payment for and timing of public and private utility relocations. As of June 12, 2003, Sound Transit remained in negotiations for two major agreements with Seattle City Light (Seattle's municipal electric utility). As we found on our audit of the Hiawatha Corridor project,[6] uncertainties over who will pay to relocate private utilities and the timing of these relocations can affect a project's cost and schedule. Therefore, Sound Transit will need to secure the necessary agreements and ensure that the utility companies have sufficient resources to complete their relocations within specified time frames.

- **Tunneling on Beacon Hill.** Any project involving tunneling faces the risk of potential cost escalation. As tunneling on Beacon Hill gets underway, Sound Transit may encounter ground settlement problems, physical constraints in the construction of the tunnel's west portal, and contaminated materials requiring excavation. Some of these events would require environmental mitigation measures and increased tunneling costs.

  Unlike the estimate for tunneling on the University Link that grew by approximately $300 million shortly before FTA's approval of the original FFGA, this time Sound Transit conducted a risk analysis for the construction of the Beacon Hill tunnel and included a 20 percent contingency in the cost estimate. In essence, Sound Transit considered typical risks that can be encountered during tunnel construction and estimated a margin to cover the additional costs that may be incurred to deal with such risks, such as delays or special tunneling requirements. Moreover, 90 percent of the design work on the tunnel has been completed. Sound Transit's Peer Review and Oversight Panel also conducted a design review and recommended constructing an exploratory test shaft to facilitate a detailed study of soil conditions and the extent of environmental mitigation that will be needed during excavation. This shaft, currently

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5 Springfield Interchange Project, OIG Report No. IN-2003-003, November 22, 2002.
6 Review of the Hiawatha Corridor Light Rail Transit Project, OIG Report No. IN-2002-078, February 12, 2002.

underway, will enable Sound Transit and prospective bidders to better assess underground soil and groundwater conditions.

Funding

In contrast to the prior FFGA, the local funding identified for the Initial Segment appears reasonable based on our review and that of the project's Financial Management Oversight Contractor (FMOC). However, we offer the following two observations about Sound Transit's financial commitment to the project.

- **Motor Vehicle Excise Tax.** In November 2002, voters passed Initiative 776 that would eliminate, among other things, motor vehicle fees and taxes above a flat $30 fee, including Sound Transit's 0.3 percent motor vehicle excise tax. Sound Transit plans to use this revenue as one of several sources to repay the 1999 $350 million existing bond issuance, $7 million of which was used for the Initial Segment. The tax will also provide $187.47 million in direct funding for the project through 2009. Of this amount, Sound Transit's records indicate that $72.76 million has been collected through 2002 and $114.71 million will be collected from 2003 through 2009. In addition, Sound Transit plans to pledge accumulated motor vehicle excise taxes as one of three sources (in addition to sales and car rental taxes) in helping to secure $1.152 billion in future bonds to cover its remaining financial commitment to the project.

  In February 2003, a Washington Superior Court held that Initiative 776 was unconstitutional, ruling that, among other things, the Initiative introduces a second subject and the subjects of the Initiative were not identified in the ballot title.[7] The State Attorney General's office is defending the Initiative against a constitutional challenge brought by Sound Transit and others, and the Superior Court ruling is on appeal before the State Supreme Court. Although not directly at issue in the case, at oral arguments before the State Supreme Court on June 26, 2003, questions related to Sound Transit's bonding and funding were raised by the Court. Sound Transit represented to the Court that the loss of future motor vehicle excise tax revenue would not leave it short of funds needed to complete the Initial Segment, but that it could affect other components of its system.[8]

  It is not our place to sort through all of the legal arguments; they are properly before the Supreme Court of Washington and its lower courts.

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[7] Pierce County v. State of Washington, No. 02-2-35125-5 SEA, Memorandum and Order, pp. 31-32 (February 11, 2003).

[8] Oral Argument of Central Puget Sound Regional Transit Authority before the Supreme Court of the State of Washington, No. 73607-3, June 26, 2003.

Until such time as the Courts resolve these issues, there will be uncertainty over an important revenue source for Sound Transit.

While Initiative 776 does not impact the motor vehicle excise tax revenues that Sound Transit had collected through December 2002, the Court's decision and/or subsequent litigation could affect future Sound Transit funding for the project. A State Supreme Court ruling that the Initiative is unconstitutional would not impact Sound Transit's motor vehicle excise tax revenue. However, a ruling that the Initiative is constitutional could affect the project's future funding. The possible scenarios are:

- *Sound Transit would continue to both collect the motor vehicle excise tax at the current rate through 2028, as well as pledge those amounts in support of future bond issuances*. Under this scenario, the project would be unaffected. Sound Transit would use the annual motor vehicle excise tax receipts to repay the debt service on the existing 1999 bond issuance, which includes debt service on the $7 million attributed to the Initial Segment as well as to support the issuance of $1.152 billion in future bonds. In addition, Sound Transit would also be able to collect the $114.71 million it had identified as a direct revenue source for the project from 2003 to 2009. Subsequent to 2009, motor vehicle excise tax collections would be available to service the remaining debt.

- *Sound Transit would continue to collect the motor vehicle excise tax at the current rate through 2028. However, it would be prevented from using those amounts as a source of repayment in support of future bond issuances*. Under this scenario, Sound Transit would continue to collect the $114.71 million it had identified as a direct revenue source for the project from 2003 to 2009. However, Sound Transit's overall capacity to issue bonds will be decreased since future motor vehicle excise tax receipts will not be included as a source of repayment in securing the currently contemplated $1.152 billion in future bonds needed for the Initial Segment. Therefore, Sound Transit would have to back future bonds with sales and use taxes and car rental taxes only. Sound Transit did not analyze the effect of this scenario on the project. This scenario would result in an overall reduction of future unallocated bonding capacity. However, it would not likely require any material cuts in existing approved programs.

- *Sound Transit would not continue to collect the motor vehicle excise tax at the current rate through 2028. Rather, it would collect only enough motor vehicle excise taxes to pay the debt service on the $350 million in bonds that were issued prior to Initiative 776.* Under this scenario, the amount of motor vehicle excise taxes that Sound Transit collects would be reduced to a level that would allow Sound Transit to service only the 1999 bond issuance. In response to a request from FTA officials, Sound Transit prepared a baseline financial plan for the Initial Segment in December 2002. This plan included a stress test to illustrate Sound Transit's financial capability to complete work on the Initial Segment if restrictions were placed on its ability to fully use the existing motor vehicle excise tax revenue as suggested in this scenario.

  The stress test assumed that this scenario would result in a total loss to the system of about $704 million—$307 million[9] in collections and $397 million in bonding capacity—through 2009. According to Sound Transit, this loss of financial capacity would result in cuts of $151 million in approved programs and $553 million in unallocated capacity that it plans to use for future projects. The subareas where the Initial Segment is being constructed would lose $293 million, which includes $114.7 million of direct revenue for the Initial Segment. However, Sound Transit plans to protect the funding for the Initial Segment by absorbing the losses through $264 million in reductions to other future projects and $29 million in direct cuts to existing approved programs.[10] The stress test scenario, which maintains the integrity of the Initial Segment, would require Sound Transit Board approval for implementation.

Regardless of the scenario, Sound Transit officials have indicated that they will protect local funding for the light rail project by cutting other program areas and the unallocated capacity. Should this become necessary, Sound Transit would need to revise its finance plan.

- **Cost Growth and Future Funding Plans.** At the same time that Sound Transit is facing a potential reduction in motor vehicle excise tax revenues, Sounder Commuter Rail and Regional Express Bus have collectively experienced sizeable cost growth in capital and operating expenses above the

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[9]Includes the $114.71 million of uncollected motor vehicle excise taxes Sound Transit plans to use to fund the Initial Segment from 2003 to 2009, less a minimum adjustment to service the $7 million in existing bonds allocated to the project.

[10]Sound Transit has divided its geographical area into five subareas to ensure that it uses local tax revenues and related debt for projects and services, which benefit the subareas generally in proportion to the level of revenues each subarea generates. These subareas are: North, South, and East King County; Snohomish County; and Pierce County.

amounts estimated in 1998 to complete the projects by 2006. For example, since 1998 Sounder's approved budget has increased $349 million (45 percent) and Regional Express Bus' approved budget has increased $84 million (7 percent). We are not suggesting that cost growth of this magnitude will persist in the future, but Sound Transit should continue to monitor the cost of these projects.

Safety Issues

We also reviewed Sound Transit's plans for addressing safety in the Seattle Downtown Transit Tunnel. Sound Transit plans a number of safety improvements that will adequately mitigate hazards from potential fires and vehicle collisions related to joint bus and rail operations in the tunnel. Further, King County Metro Transit's (Metro) decision to operate hybrid buses (diesel fueled and battery powered) in the tunnel will make it easier for Sound Transit to implement required fire suppression and ventilation measures. Specifically, we found Sound Transit's plan to be adequate because the project will:

- incorporate traffic control mechanisms in the joint operations plan to maintain safe distances between trains and buses;
- replace two emergency ventilation fans and retrofit 10 emergency fans;
- add a stairwell/escalator at one of the stations for emergency evacuation; and
- install a water spray nozzle system for fire containment that will be tested and certified by the Seattle Fire Department.

FTA's Stand-Alone Requirements

The Initial Segment, which starts at the Downtown Seattle Transit Tunnel and ends 1.6 miles short of Sea-Tac International Airport, meets FTA's requirement for a stand-alone project. To qualify as a stand-alone project under the New Starts process, a project must meet four criteria relating to the project end points, independent utility, potential for further transportation improvements, and commitment needs for other Federal funds. These criteria and their applications to the Initial Segment are summarized below.

- *Have logical end points.* The Initial Segment meets this criteria even though the alignment stops 1.6 miles short of Sea-Tac International Airport. A terminus at the airport would have enhanced the Federal funding justification because it would benefit airport workers and travelers. Sound Transit is not extending the Initial Segment to the airport at this time, but recently announced an agreement to complete the extension to Sea-Tac International Airport by 2011—2 years after the Initial Segment is completed. The Port of Seattle, which manages the airport, is in the process of planning the additions of a runway and a new terminal to the airport, and decisions about the light rail alignment on airport property cannot be decided until those plans are complete. Details of the extension, such as the cost estimate, funding sources, and the alignment, also have not been settled.

- *Have substantial independent utility and constitute a reasonable expenditure even if no additional transportation improvements are made in the area.* The Initial Segment received a highly recommended rating under FTA's New Starts evaluation process primarily because of the high marks it received for two factors (project justification and local financial commitment criteria). These factors take into account a project's independent utility and reasonableness of expenditures.

  Sound Transit forecasts that the Initial Segment will have 42,500 daily riders by the year 2020, including 16,000 (38 percent) new riders to the system. The ridership is higher than three other transit systems pending Federal funding commitments in Fiscal Year 2004.[11] The Initial Segment will also eliminate about 14,500 daily automobile trips from the congested Seattle roadways.

  FTA's evaluation of this project also revealed that existing land use, current population levels, employment, and other trip generators in the station areas are sufficient to support a major transit investment. The Initial Segment will connect several of the region's economic centers, including the airport, downtown employment complexes, and two professional sports stadiums, and will serve neighborhoods where many residents are dependent on public transportation for basic mobility. Based on 1990 Census data, there are an estimated 2,616 low-income households and 169,300 jobs within a ½-mile radius of the proposed stations.

- *Keep open opportunities for other reasonably foreseeable transportation improvements.* The Initial Segment's end points, Westlake Center Station at the north end and South 154th Street at the south end do not terminate in areas that would limit transportation improvements in the near future. Our

[11] There are three transit systems pending Federal funding commitments in Fiscal Year 2004—Los Angeles/Eastside Light Rail, estimated to cost $888.3 million and seeking a 55-percent Federal contribution, projects 15,000 daily boardings, of which 7,600 will be new riders; New Orleans/Canal Streetcar Line, estimated to cost of $161.3 million and seeking an 80-percent Federal contribution, projects 31,400 daily boardings, of which 5,300 will be new riders; and San Diego/Oceanside-Escondido Rail corridor, estimated cost of $332.3 million and seeking a 46-percent Federal contribution, expects 15,100 daily boardings, of which 8,600 will be new riders.

review shows that the Initial Segment is part of a broad range of local and regional transportation services that include buses, vanpools, carpools, commuter rail, ferries, bus rapid transit, and monorail. For example, commuter buses will be able to feed passengers into the Initial Segment at the South 154th Street station in Tukwila. Transfer opportunities to the Sounder Commuter Rail may be provided at the future Boeing Access Road station. In addition, Sound Transit is developing plans to extend the Initial Segment from its current end points to the airport in the south end and to Northgate in the north end.

- *Not commit Federal funds for closely related projects such as future extensions.* By signing an FFGA for the Initial Segment, FTA is committing funds only for the Initial Segment. Future projects or extensions seeking Federal funds will be subject to the New Starts evaluation and rating process.

RECOMMENDATION

The constitutionality of Initiative 776 is currently on appeal to the Washington State Supreme Court. Until such time as the Supreme Court resolves the issue, there will be uncertainty over an important revenue source for Sound Transit; albeit the portion of those revenues that would go to the Initial Segment is dwarfed by the importance of those revenues to other components of Sound Transit and future capital projects. If Initiative 776 is ruled unconstitutional, Sound Transit's use of motor vehicle excise taxes would not be threatened. However, litigation that may arise if the Washington State Supreme Court rules that Initiative 776 is constitutional, may raise new issues on Sound Transit's use of this local tax revenue for the Initial Segment and other capital projects. These uncertainties, combined with more than $400 million in cost growth for Sounder Commuter Rail and Regional Express Bus, will present the Sound Transit Board with a challenge to maintain the existing system as it is and undertake future capital projects.

We considered what the prudent course of action would be to protect the taxpayer's interests under these circumstances, especially given the current state of the litigation, Sound Transit's pending application for $500 million in Federal funding for the light rail project, and the fact that the motor vehicle excise taxes are identified as one local funding source for the light rail project in the submitted Finance Plan. In our view, it is also relevant that the Washington State Department of Licensing, which has been collecting the taxes as an agent for Sound Transit, has indicated to Sound Transit that it will continue to do so until a court of competent jurisdiction directs otherwise. This intent is reflected in Sound Transit's financial plan.

We therefore, recommend that FTA require the Sound Transit Board of Directors to formally agree, in advance of final approval of the FFGA, that: (1) alternative local revenues will be committed promptly to the light rail project if and to the extent that a funding deficit or shortfall is occasioned by the loss of excise tax revenues and related fees, and (2) Sound Transit's Finance Plan will be amended promptly to reflect this commitment and identify alternative revenue source(s) in the event it is determined that motor vehicle excise taxes and related fees are no longer collectible. The intent of these recommendations are consistent with the requirements of Section 10, Local Financial Commitment—Capital Costs, of the FFGA.

It should also be recognized that under the terms of the FFGA, Sound Transit must maintain its entire mass transit system at the current level of service, components of which have experienced substantial recent cost increases. It goes without saying that it will be incumbent on the Sound Transit Board of Directors to arrange its finances and revenues in a manner that ensures the existing transit system is maintained and operated at current levels of service. We recommend that FTA monitor this closely.

Regarding future capital projects, including plans for other segments of or an expansion of light rail in Seattle, they are not a part of the current FFGA application. It is essentially a local decision regarding which of these projects should be pursued, when they should be undertaken, and how they will be funded. The fiscal impact of Initiative 776 is most pronounced with respect to these future capital projects.

FTA AND OFFICE OF INSPECTOR GENERAL COMMENTS

In its July 3, 2003 response to the draft report (see Appendix I), FTA concurred with the recommendation, stating that it will request in writing that the Sound Transit Board of Directors formally agree to actions specified in our recommendation. FTA also stated that it will not execute the FFGA prior to written notification from the Board of their agreement, and that it will closely monitor Sound Transit's continuing financial responsibility to operate, maintain and reinvest in its existing transit system as well as the Initial Segment, as is its practice under all FFGAs. FTA's comments and proposed actions are responsive to our recommendation.

BACKGROUND

The Puget Sound Regional Council and other organizations have studied many alternatives since the early 1980s for expanding high capacity transit technologies in the Central Puget Sound region, such as improvements to the regional high-occupancy-vehicle (HOV) system, use of exclusive busways and transitways, and an extensive regional (light or heavy) rail system. These studies also considered, but ruled out, a monorail system due to its inflexibility in switching tracks, incompatibility with the Downtown Seattle Transit Tunnel and the Interstate 90 Bridge, and personnel safety and emergency evacuation standards.

Sound Transit, established in July 1993 within King, Pierce and Snohomish Counties, adopted a Phase I regional transit system plan that included a regional bus system, a grade-separated commuter rail system and a surface light rail system. Voters rejected the initial plan proposed in March 1995 but approved a modified plan, known as Sound Move, in November 1996. The plan included \$1.8 billion for a 23.5-mile Central Link Light Rail System. This plan divided Central Link into three segments—University Link (Segment 1), Airport Link (Segment 2), and Northgate (Segment 3). Sound Transit is responsible for putting Sound Move in place.

FTA and Sound Transit completed a Final Environmental Impact Statement (FEIS) in November 1999 that included the Sound Move Central Link Light Rail Project. This FEIS compared a no-build alternative (comprising the existing transportation system with transit system expansions, Sound Transit's Sounder Commuter Rail and Regional Express Bus services, HOV lane construction, and other planned local transportation improvements) to several light rail alternative alignments. The Sound Transit Board chose a locally preferred alternative alignment and FTA issued a Record of Decision in January 2000 approving this alignment for the Central Link Light Rail Project.

Sound Transit and FTA forwarded an FFGA application for the University Link segment to Congress in July 2000, and the former Secretary of Transportation approved the application in January 2001. Subsequently, the OIG issued a report in April 2001 questioning FTA's decision to approve the FFGA for the University Link segment. After the current Secretary of Transportation decided to hold Federal funds for this segment in abeyance, Sound Transit selected the Initial Segment to replace the University Link segment. Sound Transit formally submitted a revised FFGA to FTA for the Initial Segment in January 2003.

FINDINGS

Project Cost and Schedule Estimates Are Credible, Given the Stage of the Project

Since our April 2001 interim report, FTA has provided strong oversight of Sound Transit's plans for constructing a new Initial Segment of the Central Link Light Rail Project. We also found the $2.437 billion project cost estimate and the July 2009 completion date to be fair representations of the Initial Segment's cost and construction schedule, given the project is in the later stages of final design. Specifically, the project's cost estimate is based on all known and reasonably estimated costs and includes $375.1 million (15 percent of the project's budget) in contingencies and reserves to address uncertainties.

At this time, the project's estimated completion date seems reasonable and includes about 6 months of float time to accommodate potential schedule delays. Further, Sound Transit is using cost-loaded master schedules[12] to mitigate delays and track construction completion, and has identified or implemented several risk mitigation measures to prevent costly schedule slippages. We have found a cost-loaded master schedule to be a useful tool to mitigate delays and track construction completion, and have recommended the use of them on other projects, such as the Tren Urbano Rail Transit project in Puerto Rico and the Springfield Interchange Project in Virginia. Neither project was using master schedules to forecast project completion or to monitor adjustments to mitigate construction delays.

Project Cost

Sound Transit's $2.437 billion baseline cost estimate to construct the Initial Segment includes all known and reasonably anticipated construction costs for preliminary and final design, construction management, capital improvements, light rail vehicles, third-party agreements, and direct labor costs.[13] (See Table 1.) The proposed budget also includes $375.1 million for contingencies, such as $245.7 million for Federally eligible construction costs, $1.1 million for other costs, and a project reserve of $128.3 million. Total contingencies represent 23 percent of the project's direct construction costs, or 15 percent of the total project budget. These amounts are within levels considered acceptable by the American Underground Association for projects at this stage of development and

[12] A cost-loaded master schedule integrates all the critical activities associated with the project.

[13] Consistent with reporting requirements for other Federally funded transportation construction projects, the baseline cost estimate of $2.437 billion includes $201 million in debt interest incurred by the project's 2009 completion date, but does not reflect at least $675 million in long term debt interest that Sound Transit estimates is allocable to the Initial Segment and payable between 2009 and 2025. After 2009, Sound Transit also will be required to fully service the outstanding debt.

are consistent with contingencies used on other construction projects, such as the Woodrow Wilson Bridge in Washington, D.C.

Table 1
Project Baseline Cost Estimate in Year-of-Expenditure Dollars
(Dollars in Thousands)

Description	Baseline Cost Estimate	Contingency	Contingency Percentage	Cost Estimate with Contingency
Costs Eligible for Federal Participation				
Preliminary Engineering	$29,703	$197	1	$29,900
Environmental Analysis	$5,000	$100	2	$5,100
Final Design	$117,225	$5,775	5	$123,000
Construction Management	$69,986	$12,478	18	$82,464
Construction/Capital Improvements	$999,924	$166,817	17	$1,166,741
Light Rail Vehicles	$130,479	$7,828	6	$138,307
Third-Party Agreements	$50,450	$8,350	17	$58,800
Right-of-Way	$188,906	$44,110	23	$233,016
Before/After Study	$520	$60	12	$580
Link Direct Labor for Preliminary Engineering	$2,000	0		$2,000
Subtotal	**$1,594,193**	**$245,715**		**$1,839,908**
Other Costs				
Pole Procurement	$428	$43	10	$471
Site Preparation	$4,337	$1,084	25	$5,421
Subtotal	**$4,765**	**$1,127**		**$5,892**
Administration & Operations	$224,200	0		$224,200
Project Reserve		$128,300		$128,300
Initial Segment Financing	$201,800	0		$201,800
Transit Art	$10,700	0		$10,700
Debt Service	$26,100	0		$26,100
Total Baseline Cost Estimate	**$2,061,758**	**$375,142**		**$2,436,900**

Source: Sound Transit

Since Sound Transit has not awarded any major construction contracts, the cost estimate is based largely on final design estimates. We determined that these estimates were reasonable given the supporting detail for each line item, underlying assumptions, and the contingency amount established for each item. The contingency provides for possible future events or conditions arising from presently known or unknown causes that cannot be precisely quantified at this time. We also verified calculations, reviewed supporting cost information, and traced cost information from conversion summary sheets to line item summary sheets and supporting detail.

Additionally, we tested the accuracy of the cost information reported by Sound Transit's new integrated financial management system by submitting actual cost information and reconciling the system output to financial reports. Because Sound Transit has not awarded a major contract for the Initial Segment, we tested its financial management system by observing data entry, approvals, and transmissions of a program payment for the Tacoma Link through Sound Transit's accounting system. We observed the entering of the progress payment into the project control system, receiving of appropriate approvals, transmitting of the payment to Sound Transit's accounting system, and sending out of the progress payment. Our test of the system showed no discrepancies between the payments entering the system and the payments leaving the system. We then verified expenditures as of December 31, 2002, using the new system.

Our conclusions were consistent with those of FTA's two PMOCs, who verified quantities of supplies and equipment, and the labor costs associated with each contract line item. Gannett Fleming Incorporated, the primary PMOC, concluded in its January 2003 Technical Capacity and Capability Report that Sound Transit adequately defined the scope, cost estimate and schedule for the 13.9-mile Initial Segment.

The second PMOC, Parsons Transportation Group, performed two analyses that emphasized different cost assessment methods. In the first analysis, Parsons compared construction budget line items for the more complex activities to industry standards. Using this approach, Parsons determined that construction line item costs were reasonable, given the project's current design level.

Parsons also employed a risk assessment used by WSDOT, which estimates cost ranges based on risk factors. This risk assessment identified a construction cost range for the project of $1.743 billion to $1.866 billion, with the most likely cost being $1.803 billion. This figure is slightly lower than Sound Transit's construction budget of $1.840 billion. After using both methods, Parsons concluded that Sound Transit's project cost estimate was within a reasonable range of where the final cost should be.

Schedule

Based on our review of the project's February 28, 2003 Primavera baseline schedule[14] loaded with February 28, 2003 data, Sound Transit's Progress Reports, and PMOC monthly reports, we concluded that the planned revenue operation date of July 3, 2009 should be achievable. Specifically, the critical path incorporates 6 months of float time distributed throughout construction and systems installation activities. The organization, duration, and phasing of the activities are logical and

[14] Primavera is a computer program commonly used by engineers to analyze a project's schedule of activities. The baseline is the schedule against which future updates will be compared.

appropriately detailed for a project that is in the later stages of final design. Further, because project design is 80-percent complete, most of the schedule risks have been identified and the contingencies are sufficient to account for possible future events or conditions arising from presently known or unknown causes that cannot be precisely quantified. Table 2 shows the percentage of design that was completed for each construction segment as of June 12, 2003.

Table 2
Design Levels of Construction Sections as of June 12, 2003

Construction Segment	Design Level
Downtown Seattle Transit Tunnel Retrofit	90%
Pine Street Stub Tunnel	30%-40%
E-3 Busway	100%
Beacon Hill Tunnel	90%
McClellan	95%
Martin Luther King Jr. Way	95%
Tukwila Freeway Route	50%
Maintenance Base	100%
Overall Design Level	**Approx. 80%**

Issues That Could Impact the Project's Final Cost and Completion Date

Our experience has shown that cost escalation and delays are a risk for projects that face difficult and complex design and construction issues, such as those inherent in the Initial Segment. For example, our audits of the Hiawatha Light Rail System, Springfield Interchange, Bay Area Rapid Transit Airport Extension, and Los Angeles Metro Red Line showed that these projects encountered cost and schedule issues resulting from tunneling, utility relocation, construction difficulties, or right-of-way purchases.[15]

One of the most challenging aspects of the Initial Segment is building the segment through a developed urban corridor, where the alignment traverses businesses, residential neighborhoods, schools, shopping centers, operating railroads, a river, and a tunnel with bus traffic. Not only will environmental and safety mitigation measures be necessary, but Sound Transit will have to negotiate and manage third-party agreements with cities, counties, regulatory agencies, utilities, and railroads.

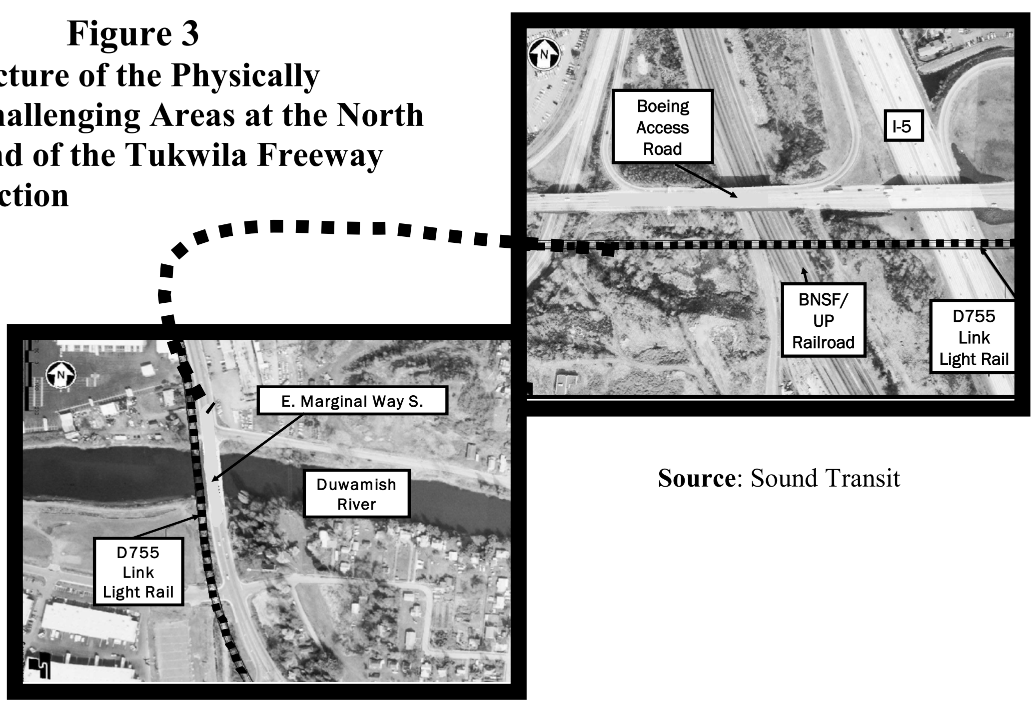
[15] These audits resulted in the following reports: Springfield Interchange Project, OIG Report No. IN-2003-003, November 22, 2002; Review of the Hiawatha Corridor Light Rail Transit Project, OIG Report No. IN-2002-078, February 12, 2002; Audit of Bay Area Rapid Transit District Extension to San Francisco International Airport, OIG Report No. TR-2000-085, April 21, 2000; and Mega Project Review of Los Angeles Metro Rail Red Line Project, OIG Report No. TR-1998-154, June 12, 1998.

Addressing safety and environmental mitigation and negotiating local agreements can cause delays and drive up costs during project implementation. For this reason, we have highlighted the following areas that should be monitored by FTA and Sound Transit.

Timing and cost of right-of-way acquisitions. Sound Transit must complete its acquisition of 760 right-of-way parcels by December 2004. Because it had acquired only 77 parcels (10 percent) as of May 31, 2003, Sound Transit must purchase the remaining 683 parcels (90 percent) on schedule. To accomplish this, Sound Transit has advanced its schedule to acquire property and has budgeted $233 million (10 percent of its budget) for right-of-way purchases, including $44 million for contingencies (about 12 percent of the overall contingency budget). However, right-of-way parcels on the critical path, such as those in the Tukwila Freeway section, must be purchased by October 2004. In purchasing right-of-way for the Tukwila Freeway section, Sound Transit must acquire an aerial easement from the Burlington Northern Santa Fe and Union Pacific railroads, a permit and easement to build a bridge spanning approximately 200 feet across the Duwamish River, and property for crossing Interstate 5. Sound Transit is working with WSDOT, the railroads, and the City of Tukwila to purchase the various easements and property needed. A delay in these acquisitions could defer the Sound Transit Board's authorization for constructing the Tukwila segment.

Designing/constructing the alignment along the Tukwila Freeway section. The Tukwila Freeway section is estimated to cost $286.3 million, including a 10-percent contingency allocation, with construction starting in April 2004 and ending in January 2008. As Figure 3 illustrates, the elevated north end of the Tukwila Freeway section must cross over three physically challenging areas: Interstate 5 (a 12-lane freeway), the railroad yards, and the Duwamish River.

Figure 3
Picture of the Physically Challenging Areas at the North End of the Tukwila Freeway Section



Source: Sound Transit

Completing final design and roadbed construction over these physically challenging areas and addressing the level of safety and technical coordination needed with WSDOT and the railroads could impact the project's cost and schedule. As we have seen on other projects such as the Springfield Interchange, design problems and disagreements over the payment for and coordination of field activities with railroad companies can cause delays and cost growth. For example, on the Springfield Interchange the Virginia Department of Transportation had to redesign five bridges over railroad tracks because it did not secure prior design approval from the railroads for these bridges. The resulting extra construction work increased costs beyond the contingency amount set aside for this construction.

Sound Transit is pursuing several permits needed for the Tukwila Freeway section. Sound Transit plans to apply for three major City permits by mid-summer 2003: an unclassified use permit, which is the primary land use permit required by the City that encompasses the full light rail alignment in Tukwila and the South 154th Street station; a Shoreline Substantial Development Permit, which the City requires for crossing the Duwamish River; and a Joint Aquatic Resources Permit. The Joint Aquatic Resources Permit covers all water-related permits and combines all environmental permit applications into one package.

Tunneling in Beacon Hill. Experience with other projects has shown that tunneling involves risks that may lead to delays and cost increases. Tunneling activities at Beacon Hill are not on the critical path, but uncertainties about ground settlement and the excavation of contaminated materials could require environmental mitigation measures.

The Beacon Hill Tunnel segment includes a deep underground binocular-shaped station and twin tunnels that extend for approximately 1 mile. The underground station will be approximately 160 to 165 feet below ground and will have a high-speed elevator to the surface. Sound Transit staff conducted a risk analysis for the construction of the Beacon Hill segment and rated it as high risk. Because of the various risk factors associated with complex geotechnical data obtained during borings, and the potential for hazardous and/or contaminated conditions, Sound Transit's Peer Review and Oversight Panel conducted a design review and recommended construction of an exploratory test shaft. This shaft will enable Sound Transit and prospective bidders to better assess underground soil and groundwater conditions before contract bids are requested and mitigate various risk factors that could drive up the cost of the bids.

Sound Transit awarded a contract for the exploratory test shaft and issued a Notice to Proceed to the contractor in February 2003. The construction of the test shaft is estimated to be completed in 150 days from start of construction. As of June 13, 2003, the contractors had excavated 92 feet (approximately 57 percent of the shaft) and found no serious problems. Sound Transit staff indicated that some difficulties have occurred with the removal of ground water, but that this has not posed any serious problems.

Sound Transit estimates that the Beacon Hill tunnel and station will cost $219.6 million, including a 20—percent contingency allocation. Construction of the tunnel is planned to occur from for March 2004 through February 2008.

Coordinating utility relocations. Although one PMOC classified utility relocation as a moderate risk, disagreements over who will pay to relocate private utilities and the timely relocation of utilities along the critical path (the Tukwila Freeway section) could potentially affect the project's cost and schedule. As we have observed on other audits, that disputes over who will pay to relocate private utilities could affect project costs.

Sound Transit has allocated $18.5 million for coordinating the relocation of private and public utility lines and is working to secure all of the corresponding agreements with public and private utilities. As of June 12, 2003, Sound Transit was in negotiation, for two major agreements, with Seattle City Light, a municipal electric utility involved in a number of contracts for the Initial Segment. The first agreement is a master construction agreement and the second is an agreement to install underground utilities along Martin Luther King Jr. Way South, in the Rainier Valley. Although Sound Transit and Seattle City Light have reached an agreement in principle, a formal agreement is scheduled to go to the Sound Transit Board for approval in July 2003.

Seattle City Light will also need to provide adequate resources to relocate electrical utilities within Sound Transit's scheduled milestones. To help mitigate potential problems, Sound Transit has developed a master schedule illustrating the critical interfaces needed between Seattle City Light crews and Sound Transit civil contractors. Sound Transit and Seattle City Light are holding coordination meetings to address technical issues and refine the master schedule as necessary.

Funding

Our analysis of Sound Transit's December 2002 Financial Plan indicates that at this time the agency has sufficient funds to construct and operate approved

Phase I[16] capital projects for its three lines of business—Regional Express Bus, Sounder Commuter Rail, and Link Light Rail, including the estimated $2.437 billion Initial Segment. FTA's FMOC, Diversified Capital, Inc., also concluded that Sound Transit has the financial capacity to complete all capital projects included in Sound Move's Phase I Plan.

Nevertheless, Sound Transit's funding for the Initial Segment could face two risks: a recently passed local Initiative could limit motor vehicle excise tax collections, and possible cost growth on Sound Transit's other programs—Sounder Commuter Rail and Regional Express Bus systems. In November 2002, voters passed Initiative 776 that would eliminate, among other things, motor vehicle fees and taxes above a flat $30 fee, including Sound Transit's 0.3 percent motor vehicle excise tax. This Initiative could also prevent Sound Transit from pledging motor vehicle excise tax revenues for future bond issuances that would be used for future transportation improvements, such as Sound Transit's Link Light Rail, Regional Express Bus and Sounder Commuter Rail in King, Pierce, and Snohomish counties.

Funding Sources

In addition to the $500 million in Federal funding that Sound Transit has requested, the Initial Segment will be financed by $1.937 billion in local funds comprised of $1.159 billion in long-term bonds and $778 million in local tax revenues, as shown in Table 3.

[16] Sound Transit originally proposed to complete transportation improvements in two phases. It planned to complete Phase I Regional Express Bus, Sounder Commuter Rail, and Link Light Rail capital projects in 2006. However, when Sound Transit encountered increased costs and schedule delays on the Central Link system, it extended the Phase I Central Link completion date to 2009. Sound Transit plans to seek voter approval for Phase II projects in 2006 or later.

Table 3 Seattle Central Link Project Funding Sources (Dollars in Millions)	
Revenue From Long-Term Bonds (Backed by Sales & Use Taxes, Motor Vehicle, Excise Taxes, and Car Rental Tax Collections)	$1,159.00
Local Taxes	
Sales & Use Tax, Car Rental Tax and Other Funds	590.53
Motor Vehicle Excise Tax	187.47
Subtotal	778.00
Federal (New Starts Grant)	500.00
Total	$2,437.00

Source: Sound Transit, as of June 2003.

Local Tax Revenue. On November 5, 1996, voters within the three-county Sound Transit district approved an increase in taxes (a 0.4 percent increase in local sales and use tax and a 0.3 percent increase in the local motor vehicle excise tax) to fund the local share of Sound Move. Subsequently, the Sound Transit Board of Directors also authorized a 0.8 percent car rental tax. Sound Transit collects these taxes annually for its Phase I capital projects and operations. These tax collections have no sunset provision, but that may change when Phase I ends. Sound Transit cannot enter Phase II unless voters approve a second phase. If voters do not approve Phase II, the Sound Transit Board of Directors would roll back the tax rates to a level sufficient to pay off the outstanding bonds and to operate and maintain the facilities and services implemented during Phase I.

As shown in Table 3, Sound Transit will use annual tax receipts totaling $778 million to pay for the Initial Segment through 2009. It has used these funds to date to pay for planning, design, and other expenditures. When construction begins, it will use annual tax receipts and excess tax receipts collected in previous years that the agency has transferred into its General Fund. Because Sound Transit will have expended the excess revenues now that are in the General Fund by the end of 2003, the agency plans to issue bonds to pay for light rail and other capital expenditures from 2004 through the end of construction in 2009. During these later years, Sound Transit will be using its annual tax receipts to pay for construction expenditures and for the debt service on these bonds. Appendix II shows the annual transfers of local tax funds from operations and fund balances and the use of bond funds.

Sound Transit's local tax collections from all sources (sales and use tax, car rental tax, and local motor vehicle excise tax), for calendar year (CY) 1997 through CY 2002 have exceeded projections. During this period, the agency estimated it would receive $1.355 billion, but it collected $1.432 billion ($77 million more than expected). Table 4 compares Sound Transit's actual tax revenue collections to its budget projections from CY 1997 through CY 2002.

Table 4
Tax Revenue Collection History by Calendar Year
(Dollars in Millions)

Category	1997*	1998	1999	2000	2001	2002	1997-2002
Actual Collections	$158.92	$226.96	$242.16	$271.12	$268.06	$265.04	$1432.26
Budget Projections	$157.40	$213.02	$226.54	$242.56	$262.13	$253.51	$1355.16
Variance	$1.52	$13.93	$15.62	$28.56	$5.93	$11.53	$77.09
Percent	0.97	6.54	6.89	11.78	2.26	4.55	5.69

Source: Sound Transit
* Revenue collection started in April.

Bonds. To complete the Initial Segment, Sound Transit plans to use approximately $1.159 billion in funds obtained through bonds. This amount is part of bonds totaling $2.5 billion that Sound Transit expects to issue through 2009 for its capital projects. The agency can issue up to $3.382 billion in bonds without further voter approval for its capital projects,[17] and as noted previously, it uses local tax revenues to pay debt service on the bonds it issues. Sound Transit issued $350 million in bonds in 1999, leaving $3.032 billion in future funding available for Sound Transit projects.

Grants. The Transportation Equity Act for the 21st Century authorizes the use of Federal funds through FTA's Section 5309 New Starts program for capital development projects. Sound Transit expects to receive a $500 million FFGA under this program. If FTA approves this grant agreement, funds will be available for the Initial Segment, but disbursement is subject to annual appropriations. Sound Transit formally submitted its FFGA application to FTA in January 2003. To date, Sound Transit has been awarded $91 million of the grant request for preliminary engineering and final design work.

Initiative 776

In November 2002, voters of the State of Washington passed Initiative 776 to eliminate, among other things, motor vehicle fees and taxes above a flat $30 fee.

[17] The Sound Move plan allows Sound Transit to borrow up to 1.5 percent of the assessed valuation of property within its geographical boundaries. In 2003 this amounted to $3.382 billion in bonding capacity.

The Initiative would eliminate Sound Transit's motor vehicle excise tax as a funding source or prevent Sound Transit from pledging these revenues for future bond issuances that would be used for transportation improvements, such as Sound Transit's Link Light Rail, Regional Express Bus and Sounder Commuter Rail in King, Pierce, and Snohomish counties. As a result, Sound Transit's plans to partially finance the Initial Segment with $187.47 million in motor vehicle excise tax revenue are uncertain at this time. As of December 2002, approximately $72.76 million of this amount had been collected. Sound Transit plans to spend another $114.71 million of these taxes on the project from 2003 through 2009.

In February 2003, a Washington Superior Court held that Initiative 776 was unconstitutional, ruling that, among other things, that the Initiative introduces a second subject and because the subjects of the Initiative were not identified in the ballot title.[18] The State Attorney General's office is defending the Initiative against a constitutional challenge brought by Sound Transit and others, and the Superior Court ruling is on appeal before the State Supreme Court. Although not directly at issue in the case, at oral arguments before the State Supreme Court on June 26, 2003, questions related to Sound Transit's bonding and funding were raised by the Court.[19] Sound Transit represented to the Court that the loss of future motor vehicle excise tax revenue would not leave it short of funds needed to complete the Initial Segment, but that it could affect other components of its system. However, during oral argument, Sound Transit stated that its legal theory is that the Initiative cannot impair the financial framework that induced the bondholders to purchase bonds issued before the Initiative passed,[20] and, therefore, even if the Court found the Initiative to be constitutional, it would not affect Sound Transit's revenues until 2028.

If the Initiative were held constitutional by the State Supreme Court, the issues directly related to Sound Transit's bonding and funding could be the subject of future litigation. However, it is not our place to sort through all of the legal arguments; they are properly before the Supreme Court of Washington and its lower courts. Until such time as the courts resolve these issues, there will be uncertainty over an important revenue source for Sound Transit.

While Initiative 776 does not affect the motor vehicle excise tax revenues that Sound Transit had collected through December 2002, the court's decision and/or

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[18] Pierce County v. State of Washington, No. 02-2-35125-5 SEA, Memorandum and Order, pp. 31-32 (February 11, 2003).

[19] Oral Argument of Central Puget Sound Regional Transit Authority before the Supreme Court of the State of Washington, No. 73607-3, June 26, 2003.

[20] Sound Transit's 1999 bond issuance requires it to levy the motor vehicle excise tax at a rate of no less than 0.3 percent so long as any bonds remain outstanding, or through the year 2028. See section 8, page 21. Wash. Const. Art. 1, Sec. 23; Tyrpak v. Daniels, 124 Wn.2d 146, 153-54 (1994); Municipality of Metropolitan Seattle v. O'Brien, 86 Wn.2d 339, 350-52 (1976).

subsequent litigation could affect future Sound Transit funding for the project. A State Supreme Court ruling that the Initiative is unconstitutional would not affect Sound Transit's motor vehicle excise tax revenue. However, a ruling that the Initiative is constitutional could affect the project's future funding. The following are possible scenarios.

- *Sound Transit would continue to both collect the motor vehicle excise tax at the current rate through 2028, as well as pledge those amounts in support of future bond issuances*. Under this scenario, the project would be unaffected. Sound Transit would use the annual motor vehicle excise tax receipts to repay the debt service on the existing 1999 bond issuance, which includes debt service on the $7 million attributed to the Initial Segment as well as to support the issuance of $1.152 billion in future bonds. In addition, Sound Transit would be able to collect the $114.71 million it had identified as a direct revenue source for the project from 2003 to 2009. Subsequent to 2009, motor vehicle excise tax collections would be available to service the remaining debt.

- *Sound Transit would continue to collect the motor vehicle excise tax at the current rate through 2028. However, it would be prevented from using those amounts as a source of repayment in support of future bond issuances*. Under this scenario, Sound Transit would continue to collect the $114.71 million it had identified as a direct revenue source for the project from 2003 to 2009. However, Sound Transit's overall capacity to issue bonds will be decreased because future motor vehicle excise tax receipts will not be included as a source of repayment in securing the currently contemplated $1.152 billion in future bonds needed for the Initial Segment. Therefore, Sound Transit would have to back future bonds with sales and use taxes and car rental taxes only. Sound Transit did not analyze the effect of this scenario on the project. This scenario would result in an overall reduction of future unallocated bonding capacity. However, it would not likely require any material cuts in existing approved programs.

- *Sound Transit would not continue to collect the motor vehicle excise tax at the current rate through 2028. Rather, it would collect only enough motor vehicle excise taxes to pay the debt service on the $350 million in bonds that were issued prior to Initiative 776*. Under this scenario, the amount of motor vehicle excise taxes that Sound Transit collects would be reduced to a level that would allow Sound Transit to service only the 1999 bond issuance. In response to a request from FTA officials, Sound Transit prepared a baseline financial plan for the Initial Segment in December 2002. This plan included a stress test to illustrate Sound Transit's financial capability to complete work on the Initial Segment if restrictions were placed on its ability to fully use the existing motor vehicle excise tax revenue as suggested in this scenario.

The stress test assumed that this scenario would result in a total loss to the system of about $704 million—$307 million[21] in collections and $397 million in bonding capacity—through 2009. According to Sound Transit, this loss of financial capacity would result in cuts of $151 million in approved programs and $553 million in unallocated capacity that it plans to use for future projects. The subareas where the Initial Segment is being constructed would lose $293 million, which includes $114.7 million of direct revenue for the Initial Segment.[22] However, Sound Transit plans to protect the funding for the Initial Segment by absorbing the losses through $264 million in reductions to other future projects and $29 million in direct cuts to existing approved programs.[23] The stress test scenario, which maintains the integrity of the Initial Segment, would require Sound Transit Board approval for implementation.

Regardless of the scenario, Sound Transit officials have indicated that they will protect local funding for the light rail project by cutting other program areas and the unallocated capacity. Should this become necessary, Sound Transit would need to revise its finance plan.

Sounder Commuter Rail and Regional Express Bus Cost Growth

At the same time that Sound Transit is facing a potential reduction in motor vehicle excise tax revenues, its Sounder Commuter Rail and Regional Express Bus capital projects and operations are experiencing cost growth above the amounts estimated in 1998 to complete the projects by 2006. The total budget for Sounder has increased $349 million (45 percent) from the $776 million cost estimate in the 1998 Sound Move budget to the $1.124 billion cost estimate in the Adopted 2003 Budget. The total budget for Regional Express Bus increased $84 million (7 percent) from the $1.282 billion cost estimate in the 1998 Sound Move budget to the $1.366 billion cost estimate in the Adopted 2003 Budget. (See Table 5.) We are not suggesting that cost growth of this magnitude will persist in the future, but Sound Transit should continue to monitor the cost of these projects.

[21]Includes the $114.71 million of uncollected motor vehicle excise taxes Sound Transit plans to use to fund the Initial Segment from 2003 to 2009.

[22] Less a minimum adjustment to service the $7 million in existing bonds allocated to the project.

[23]Sound Transit has divided its geographical area into five subareas to ensure that it uses local tax revenues and related debt for projects and services, which benefit the subareas generally in proportion to the level of revenues each subarea generates. These subareas are: North, South, and East King County; Snohomish County; and Pierce County.

Table 5 Sounder Commuter Rail and Regional Express Bus Changes in Capital and Operating Costs (Dollars in Millions)				
	Estimated Cost* 1998	2003	Cost Increase	Percent Change
Sounder Commuter Rail	$ 776	$1,124	$ 349	45%
Regional Express Bus	$1,282	$1,366	$ 84	7%

* The costs are in year of expenditure dollars. Both projects are expected to be completed in 2006.
Source: Sound Transit

Sounder Commuter Rail and Regional Express Bus have reserve funds totaling $5 million and $52.4 million, respectively, to cover cost growth through FY 2006. Additionally, these projects have budgets with built-in contingency funds. Nevertheless, if these reserve and contingency funds prove insufficient during the next 3 years, Sound Transit would have to look at other funding options and, for example, could decide to cut back plans for certain capital improvements, such as train stations, to stay within the maximum financial capacity for the affected subareas.

Plans to Address Safety Issues in Downtown Seattle Transit Tunnel

In August 2002, Sound Transit completed a hazards analysis using FTA's "Hazard Analysis Guidelines for Transit Projects" to identify risks associated with joint bus and light rail operations in the Downtown Seattle Transit Tunnel. Sound Transit's analysis evaluated the tunnel facilities, equipment, and operating plan to determine the type, frequency, and severity of potential hazards. The analysis identified fires and vehicle collisions as major hazards, but determined that the probability of these events occurring was very low.

To address these hazards, Sound Transit developed plans to retrofit the transit tunnel with specific safety improvements. These improvements include fire suppression, collision avoidance, ventilation and evacuation features. Our review found that Sound Transit's plans, which were 60 percent complete at the time of this review, reasonably addressed safety hazards and other risks associated with tunnel operations.

Sound Transit plans to address fires in the tunnel by installing a water deluge system. A Seattle Fire Department (SFD) fire protection consultant has approved the concept of a water spray system employing nozzles as appropriate for the vehicle fires in the tunnel, and determined it sufficient for fire exposure protection for fire fighters and passenger exits. The SFD consultant is monitoring the design of the system to ensure compliance with fire code requirements. Upon design completion, the consultant will certify that final plans and specifications meet code requirements and provide the necessary fire protection. The consultant also will participate in acceptance tests of the installed fire protection system.

With respect to vehicle collisions, Sound Transit plans to incorporate traffic control mechanisms in the joint operations plan to maintain safe separation between trains and buses. These traffic controls include an integrated signal system designed to allow only one mode (bus or rail) in a tunnel segment or station at any given time. The provisions to prevent vehicle collisions seem adequate for joint operations and are consistent with transit industry guidelines. Nonetheless, the reliability of the collision prevention measures will ultimately depend on thorough testing of the controls and signal system prior to revenue operations.

To address emergency ventilation issues, Sound Transit originally planned to replace the tunnel's 12 emergency ventilation fans and 12 station exhaust fans. These measures would comply with current SFD fire codes which did not exist when King County Metro constructed the tunnel. Preliminary tests in April 2002 found that Sound Transit could meet tunnel ventilation requirements by replacing 2 emergency ventilation fans and retrofitting the other 10 emergency ventilation fans.

King County Metro's decision to operate hybrid buses[24] in the tunnel eliminates the need for overhead catenary wires, thereby reducing the risk of electrical fires. In addition, eliminating overhead catenary wires could provide an estimated $4 million in savings for Sound Transit. In addition, these buses will also generate lower emissions, which also will reduce the need to replace all the emergency ventilation fans. Currently, Metro operates dual-mode buses[25] in the tunnel.

Sound Transit determined that existing plans for the emergency evacuation of passengers during peak hours were sufficient, except for an additional stairwell/escalator at one station. Sound Transit has included this additional stairwell/escalator in the tunnel retrofit. We found during a visit to the tunnel that the stations typically have ample entrances and exits for prompt passenger evacuation.

[24] Hybrid buses use diesel fuel and battery power for normal operations and will use only battery power while in the tunnel.

[25] Dual mode buses normally operate with diesel fuel but change to electric power, and rely on an overhead catenary wire system within the tunnel.

FTA's Stand-Alone Requirements Are Met

The Initial Segment, which starts at the Downtown Seattle Transit Tunnel and ends 1.6 miles short of the Sea-Tac Airport, meets FTA's requirement for a stand-alone project. To qualify as a stand-alone project under the New Starts process, a project must meet four criteria relating to the project end points, independent utility, potential for further transportation improvements, and commitment needs for other Federal funds. These criteria and their applications to the Initial Segment are summarized below.

- *Have logical end points, for example, by serving population or employment centers, or major traffic generators.* The Initial Segment has logical end points with the Westlake Center Station in the Central Business District at the north end, and South 154th Street and International Boulevard at the south end. The south end terminates 1.6 miles north of Sea-Tac Airport, but will have a park-and-ride facility intended to attract riders throughout the south central metropolitan area. Sound Transit plans to have dedicated shuttle buses to meet the train and take passengers directly to the lower level of the airport parking garage.

  While, in our opinion, SeaTac Airport would have been a more logical end point at the south end, Sound Transit is not extending the Initial Segment to the Sea-Tac Airport at this time. The Port of Seattle, which manages the airport, is in the process of planning the additions of a runway and a new terminal to the airport, and decisions about the light rail alignment on airport property can not be decided until a later date. However, on January 15, 2003, Sound Transit and the Port of Seattle announced an agreement to complete the extension to Sea-Tac Airport by 2011—2 years after the Initial Segment is completed. Details of the extension, such as the cost estimate, funding sources, and the alignment, have not been settled.

  Extending the Initial Segment to the airport would increase the system's ridership and enhance the Federal funding justification because it would benefit airport workers and travelers that live outside the Seattle area. Cities with rail lines that extend from downtown areas to airports, such as St. Louis, Boston and Atlanta, have ridership levels ranging from 2,200 to 6,000 boardings at the airport.

- *Have substantial independent utility and constitute a reasonable expenditure even if no additional transportation improvements are made in the area. For example, the project should have sufficient ridership for the cost, and access to equipment, power, facilities, etc., without which the project could not function.* The Initial Segment received a highly recommended rating on its evaluation under FTA's New Starts criteria, making it one of two projects receiving a highly recommended rating in the Fiscal Year 2004 DOT Budget Proposal. To receive a highly recommended rating, projects must receive a medium high rating on both project justification and local financial commitment criteria. As shown in Table 6, the Initial Segment received a medium-high rating for both project justification and local financial commitment under the New Starts evaluation process.

Table 6	
Criteria	**Rating**
Project Justification	**Medium-High**
Mobility	Medium
Cost Effectiveness	Medium
Land Use	Medium-High
Local Financial Commitment	**Medium-High**
Stability and Reliability of Capital Finance Plan	Medium-High
Stability and Reliability of Operating Plan	Medium-High
Overall Rating	**Highly Recommended**

Project Justification

The medium-high rating for project justification is based on the project's positive cost—effectiveness rating and strong land use policies. The cost—effectiveness criterion measures travel time savings for all users of the proposed project (both existing riders and new riders), and captures a broad set of benefits to transit riders—including reduction in walk times, wait times, and number of transfers. Sound Transit forecasts that the Initial Segment will have 42,000 daily riders by the year 2020, including adding 16,000 (38 percent) new riders to the system. As shown in Table 7, the Initial Segment's ridership will be higher than three other transit systems recommended for Federal funding commitments in Fiscal Year 2004. The Initial Segment will also eliminate about 14,500 daily automobile trips from the congested Seattle roadways.

The land use criterion considers existing land usages, growth management, and transit supportive corridor policies; supportive zoning regulations; and implementation tools and performance of land use polices. The medium-high rating on this criterion means that for a project in this stage of development, existing land use, the current levels of population, employment, and other trip generators in the station areas are sufficient to support a major transit investment. The Initial Segment will connect several of the region's economic centers, including the airport, downtown employment complexes, and two professional sports stadiums, and will serve neighborhoods where many residents are dependent on public transportation for basic mobility. Based on 1990 Census data, there are an estimated 2,616 low-income households and 169,300 jobs within a ½-mile radius of the proposed stations.

Table 7
Comparison of Initial Segment Statistics to FTA New Starts Projects with Recommended, Proposed, and Existing Funding Commitments for FY 2004

Project	Project Cost (Millions)	Percent Federal Share	Estimated Daily Boardings	Estimated New Riders
Initial Segment	**$2,437.0**	**21**	**42,000**	**16,000**
Projects Recommended for Funding Commitments				
Los Angeles/Eastside Light Rail	$ 888.3	55	15,000	7,600
New Orleans/Canal Streetcar Line	$ 161.3	80	31,400	5,300
San Diego/Oceanside-Escondido Rail corridor	$ 332.3	46	15,100	8,600
Projects with Proposed Funding Commitments				
Las Vegas/Resort Corridor	$ 324.8	49	38,800	22,590
New York/Eastside Access	$5,300.0	49	167,500	15,400
Projects with Existing FFGAs				
Dallas/DART	$ 517.2	64	17,000	6,800
Denver/T-REX	$ 879.3	60	31,800	12,900
Portland/MAX	$ 350.0	74	18,100	8,400
Salt Lake City/UTA	$ 89.4	60	4,100	3,400
Atlanta/MARTA	$ 463.2	80	33,300	11,000

Source: FTA's Annual report on New Starts Proposed Allocation of Funds for FY 2004

Local Financial Commitment

The Initial Segment's medium-high rating for local financial commitment is based on the low Federal share of the project's cost, the high current bond rating, and the good financial condition of Sound Transit. The $500 million Federal share for this project represents only 20.5 percent of total funding required. The 1999 series bonds were assigned municipal bond ratings of Aaa and AAA, respectively, by two ratings services, Moody's Investors Service and Standard & Poor's Ratings Services. Sound Transit's Financial Plan includes projected costs to operate and maintain each of its three lines of business. It also shows adequate operating revenues to cover these costs and provisions for required operational and maintenance and capital replacement reserves. Finally, the Initial Segment includes a maintenance facility, a vehicle storage area, and a control system that will enable the system to function independently.

- *Keep open opportunities for other reasonably foreseeable transportation improvements. For example, the project cannot end at a park that would force a future extension through, rather than around the park. It also should not preclude consideration of a range of modes for future services at the end points.* The Initial Segment's end points, Westlake Center Station at the north end and South 154th Street at the south end do not terminate in areas that would limit transportation improvements in the near future. Light rail is part of a broad range of local and regional transportation services that includes buses, vanpools, carpools, commuter rail, ferries, bus rapid transit and monorail. Commuter buses will be able to feed passengers into the Initial Segment at the South 154th Street station in Tukwila and other locations south including the airport. Transfer opportunities to the Sounder Commuter Rail may be provided at the Boeing Access Road station. In addition, Sound Transit is developing plans to extend the Initial Segment from its current end points to the airport at the south end and to Northgate at the north end.

- *A noncommitment of Federal funds for closely related projects, such as future extensions.* By signing an FFGA for the Initial Segment, FTA is committing funds only for the Initial Segment. Future projects or extensions seeking Federal funds will be subject to the New Starts evaluation and rating process.

RECOMMENDATION

The constitutionality of Initiative 776 is on appeal to the Washington State Supreme Court. Until the Supreme Court resolves the issue, there will be uncertainty over an important revenue source for Sound Transit; albeit the portion of those revenues that would go to the Initial Segment is dwarfed by the importance of those revenues to other components of Sound Transit and future capital projects. If Initiative 776 is ruled unconstitutional, Sound Transit's use of motor vehicle excise taxes would not be threatened. However, litigation that may arise if the Washington State Supreme Court rules that Initiative 776 is constitutional, may raise new issues on Sound Transit's use of this local tax revenue for the Initial Segment and other capital projects. These uncertainties, combined with more than $400 million in cost growth for Sounder Commuter Rail and Regional Express Bus, will present the Sound Transit Board with a challenge to maintain the existing system as it is and undertake future capital projects.

We considered what the prudent course of action would be to protect the taxpayer's interests under these circumstances, especially given the current state of the litigation, Sound Transit's pending application for $500 million in Federal funding for the light rail project, and the fact that the motor vehicle excise taxes are identified as one local funding source for the light rail project in the submitted Finance Plan. In our view, it is also relevant that the Washington State Department of Licensing, which has been collecting the taxes as an agent for Sound Transit, has indicated to Sound Transit that it will continue to do so until a court of competent jurisdiction directs otherwise. This intent is reflected in Sound Transit's financial plan.

We, therefore, recommend that FTA require the Sound Transit Board of Directors to formally agree, in advance of final approval of the FFGA, that: (1) alternative local revenues will be committed promptly to the light rail project if and to the extent that a funding deficit or shortfall is occasioned by the loss of excise tax revenues and related fees, and (2) Sound Transit's Finance Plan will be amended promptly to reflect this commitment and identify alternative revenue source(s) in the event it is determined that motor vehicle excise taxes and related fees are no longer collectible. The intent of these recommendations are consistent with the requirements of Section 10, Local Financial Commitment—Capital Costs, of the FFGA.

It should also be recognized that under the terms of the FFGA, Sound Transit must maintain its entire mass transit system at the current level of service, components of which have experienced substantial recent cost increases. It goes without saying that it will be incumbent on the Sound Transit Board of Directors to arrange its finances and revenues in a manner that ensures the existing transit system is maintained and operated at current levels of service. We recommend that FTA monitor this closely.

Regarding future capital projects, including plans for other segments of or an expansion of light rail in Seattle, they are not a part of the current FFGA application. It is essentially a local decision regarding which of these projects should be pursued, when they should be undertaken, and how they will be funded. The fiscal impact of Initiative 776 is most pronounced with respect to these future capital projects.

FTA AND OFFICE OF INSPECTOR GENERAL COMMENTS

In its July 3, 2003 response to the draft report (see Appendix I), FTA concurred with the recommendation, stating that it will request in writing that the Sound Transit Board of Directors formally agree to actions specified in our recommendation. FTA also stated that it will not execute the FFGA prior to written notification from the Board of their agreement, and that it will closely monitor Sound Transit's continuing financial responsibility to operate, maintain and reinvest in its existing transit system as well as the Initial Segment, as is its practice under all FFGAs. FTA's comments and proposed actions are responsive to our recommendation.

ACTION REQUIRED

FTA's planned action on the recommendation is responsive. The recommendation is resolved subject to follow-up requirements of Department of Transportation Order 8000.1C.

We appreciate the courtesies and cooperation of representatives of FTA and Sound Transit. If you have any questions concerning this report, please call me at (202) 366-1992 or Debra S. Ritt, Assistant Inspector General for Surface and Maritime Programs at (202) 493-0331.

EXHIBIT A. Scope and Methodology

Our audit objectives were to:

1. Determine whether Sound Transit and FTA adequately addressed cost, funding, and schedule issues identified in our April 2001 report, and evaluate the reasonableness of estimates for the revised project;
2. Assess plans for safety and other issues related to running buses and trains in the downtown bus tunnel; and
3. Assess the reasonableness of FTA's determination that this project constitutes a stand-alone system and would not require additional segments.

To determine the reasonableness of the baseline cost estimate, we reviewed supporting detail for each line item cost category. We also met with Sound Transit officials to determine how they developed the baseline cost estimate, and the key assumptions they relied on. We verified calculations, reviewed supporting cost information, traced cost information from conversion summary sheets to line item summary sheets, and supporting detail. In addition, we assessed the level of contingency for each line item and compared them to industry standards provided by the American Underground Association. Additionally, we reviewed the reports and analyses of Sound Transit's cost estimate by FTA's two PMOCs, as well as their supporting documentation. We followed this approach with input from OIG engineer advisors.

We assessed the accuracy of cost information reported by Sound Transit and reviewed Sound Transit's new integrated financial management system. Sound Transit uses this system to monitor the agency's financial information for all lines of business, including the Initial Segment. After obtaining an understanding of the agency's project control system, we requested that officials demonstrate the system's accuracy by submitting actual cost information during a walk-through of the system. We then verified expenditures using this new system.

To determine the reasonableness of the project's schedule, the OIG engineers analyzed the latest Primavera baseline schedule that was cost-loaded with data as of February 28, 2003, and reviewed monthly Sound Transit Agency Progress Reports, dated September 2002 through February 2003. In addition, the engineers had numerous discussions with FTA and the Sound Transit Lead Scheduler and Project Control Manager. Using the Primavera Project Planner (P3) software, the OIG engineers determined that Sound Transit has developed a realistic schedule. They also identified the amount of float time included in construction tasks and determined the reasonableness in accommodating delays in acquiring right of way parcels, and in completing tunnel excavation activities and other construction tasks.

To determine the reasonableness of project funding, we analyzed Sound Transit's Finance Plan for the Initial Segment. In addition to verifying calculations in this document, we obtained an understanding of the agency's revenue forecasting model and tested its accuracy by comparing actual tax collections to date with projected receipts. We also independently conducted a test in which we assumed that Sound Transit would receive only enough motor vehicle excise tax revenue to pay debt service on its existing bond issue.

We reviewed special reports prepared for FTA by two independent PMOCs. One document was a Full Funding Grant Agreement Application Review and Technical Capacity and Capability Spot Report, and the second document was an Independent PMOC Review on Accuracy and Reasonableness of Sound Transit's Project Scope, Baseline Cost Estimate, and Project Schedule. We met with officials from these two PMOCs, reviewed their reports, and analyzed supporting documentation during a visit to the PMOCs' offices in Los Angeles and San Francisco.

We also reviewed a Financial Capacity Assessment Spot Report of the Initial Segment prepared for FTA by an independent FMOC. This report analyzed Sound Transit's December 2002 Finance Plan and stress test. We met with officials from this FMOC, reviewed the report, and analyzed documents supporting the review of the Finance Plan and the stress test.

OIG's engineers analyzed Sound Transit's engineering cost estimates and schedules. To assess plans to address safety issues in the Downtown Seattle Transit Tunnel, OIG engineers assessed the agency's risk analysis for joint bus-rail operations and proposed safety measures to address these risks. These steps included analysis of improvements that would result from the use of hybrid buses in the transit tunnel. They also reviewed Sound Transit's plans to construct an exploratory test shaft on Beacon Hill and analyzed plans to construct the light rail roadbed over obstacles in the Tukwila Freeway section. Finally, the OIG engineers reviewed scheduling assumptions for construction activities on Sound Transit's critical path.

To assess the Initial Segment's compliance with FTA stand-alone requirements, we analyzed FTA annual reports that identified project justification and financial commitment ratings for the Initial Segment as a New Starts project. We also reviewed environmental reports prepared for the Initial Segment.

Finally, we performed several other tasks. Specifically, we obtained and analyzed Sound Transit's Audited Financial Statements for FY 2000 and FY 2001, prepared by Deloitte & Touche, LLP. We obtained and analyzed court documents related to several lawsuits that named Sound Transit as a defendant or that the agency joined as a friend of the court. We also met with local citizen groups, such as Coalition for Effective Transportation Alternatives, and reviewed information and analyses they provided. Finally we attended regularly scheduled meetings for Sound Transit's Board of Directors, Finance Committee, and Executive Committee.

During our review, our Office of Legal Counsel provided advice on freedom of information disclosure policies, performed reviews of legal documents, and participated in discussions with Sound Transit and the Washington State Attorney General's Office on Initiative 776.

We conducted this review at Sound Transit and FTA Headquarters and Region X offices in Seattle from September 20, 2002 to June 30, 2003, in accordance with the Government Auditing Standards prescribed by the Comptroller General of the United States.

EXHIBIT B. MAJOR CONTRIBUTORS TO THIS REPORT

The following individuals contributed to this report.

Name	Title
Debra Ritt	Assistant Inspector General for Surface and Maritime Programs
Leslie Smith	Program Director
Sarah Batipps	Project Manager
Rodolfo Perez	Senior Engineer Advisor
Al Larpenteur	Senior Auditor
Diane Brattain	Auditor
Gloria Echols	Auditor
Thomas Lehrich	Counsel
Seth Kaufman	Associate Counsel
Bernard Fishman	Auditor
Mitch Behm	Expert Financial Consultant

APPENDIX I. MANAGEMENT COMMENTS

Memorandum

Department
of Transportation
Federal Transit
Administration

Subject: INFORMATION: Office of the Inspector General Draft Report, Seattle Central Link Light Rail Project Initial Segment

Date: July 3, 2003

From: Jennifer L. Dorn
Administrator

Reply to
Attn. of:

To: Alexis M. Stefani, Principal Assistant Inspector General
for Auditing and Evaluation

We have reviewed your June 30, 2003, Draft Report on the Audit of the Initial Segment of the Seattle Central Link Light Rail Project. We are pleased that your extensive analysis independently validated Sound Transit's cost, schedule, and financing plan for the Initial Segment.

We accept your recommendation that the Federal Transit Administration (FTA) require the Sound Transit Board of Directors to formally agree, in advance of the final approval of the Full Funding Grant Agreement (FFGA) for this project, to the following: to promptly commit alternative local revenues to the project if and to the extent that a funding deficit or shortfall is occasioned by the loss of excise tax revenues and related fees; and to promptly amend Sound Transit's Finance Plan to reflect this commitment and identify alternative revenue source(s) in the event it is determined that the motor vehicle excise taxes and related fees are no longer collectible.

We will request in writing that the Sound Transit Board of Directors formally agree to meet these requirements. FTA will not execute the FFGA prior to written notification from the Board of their agreement. Please be assured that, as is our practice under all FFGAs, FTA will closely monitor Sound Transit's continuing financial responsibility to operate, maintain and reinvest in its existing transit system as well as the new light rail initial segment.

Thank you for the opportunity to review and comment on this draft report.

APPENDIX II. INITIAL SEGMENT'S CASH FLOW

The project's largest capital expenditures will occur in Fiscal Years 2005 and 2006.

Summary of Initial Segment's Cash Flow

		1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	Total
Capital Expenditures[1]															
Right-of-way		0.0	0.0	0.0	27.7	33.4	65.3	82.1	24.5	0.0	0.0	0.0	0.0	0.0	233.0
Construction		0.0	0.0	0.0	0.0	0.0	6.9	39.0	147.3	346.6	480.9	201.0	56.9	1.0	1,279.6
Other		1.4	10.6	25.2	38.3	37.7	58.9	71.5	58.9	64.9	66.9	61.9	45.2	16.0	557.4
	Total Capital	1.4	10.6	25.2	66.0	71.0	131.2	192.5	230.7	411.6	547.8	262.9	102.1	17.0	2,070.0
Financing Costs[2]		0.0	0.0	3.5	6.3	6.4	9.2	10.8	11.1	16.5	27.5	33.0	34.1	43.4	201.8
Central Link Start		0.0	0.0	0.2	0.3	0.2	0.4	0.6	0.5	0.9	1.2	2.0	2.9	1.5	10.7
Downtown Seattle Transit Tunnel[3]		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.1	12.2	7.7	26.1
Project Reserve[4]		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	30.6	31.6	32.6	33.6	128.3
TOTAL Baseline Cost Estimate		1.4	10.6	28.9	72.7	77.6	140.7	203.9	242.3	429.0	607.1	335.5	184.0	103.2	2,436.9
Sources of Capital Funds															
Sound Transit Funds[5]											Period covered by Initiative 776[6]				
Transfers from operations & fund balances		1.4	10.6	5.0	48.1	77.6	91.2	203.9	135.1	63.8	46.8	40.7	32.4	21.6	778.1
Bonds		0.0	0.0	7.1	0.0	0.0	0.0	0.0	32.2	285.2	480.3	214.9	81.6	57.6	1,158.8
	Total	1.4	10.6	12.0	48.1	77.6	91.2	203.9	167.3	349.0	527.1	255.5	114.0	79.2	1,936.9
Federal Grants															
Sec 5309 New Starts: Link Initial Segment		0.0	0.0	16.9	24.5	0.0	49.5	0.0	75.0	80.0	80.0	80.0	70.0	24.0	500.0
TOTAL FUNDS AVAILABLE		1.4	10.6	28.9	72.7	77.6	140.7	203.9	242.3	429.0	607.1	335.5	184.0	103.2	2,436.9

1. Budgeted capital expenditures include an allowance for cost growth.
2. Interest costs for $7 million in current bonds and $1.152 billion in future bonds to construct the Initial Segment
3. Payments to King County Metro for Downtown Seattle Transit Tunnel.
4. The Reserve provides an additional allowance for unforeseen conditions and other variances and has to be approved by the Sound Transit Board before use. This is a part of the $375 million in contingency and reserves mentioned earlier in the report. The remaining $147 million is contained in the amount for Total Capital.
5. Sound Transit funds include cash transferred from operations and general fund balances as well as bond proceeds. For all capital projects in Phase 1, about 46 percent of the local share is financed with cash. The funds shown here for the Initial Segment are apportioned from total annual cash & bond funds available, based on the Initial Segment's share of total draws on these funds in a given year.
6. Our analysis estimates that approximately $114.70 million in motor vehicle excise tax revenues are included in these figures.

Appendix: Text-only Version of Figure 1
Comparison of New Starts Light Rail Projects Cost Per Mile

	Millions of Dollars
Seattle	**$174**
Dallas	$41
Denver	$46
Memphis	$37
Minneapolis	$58
North Bergen	$238
Newark City	$208
Portland	$60
Salt Lake City	$60
San Diego	$73
Atlanta	$201
Jersey City	$103
St. Clair	$19
Los Angeles	$151