

# 2017

## Adopted Transit Improvement Plan



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# Contents

- Transit Improvement Plan Overview** ..... 1
  - Financial Plan ..... 1
  - Project Budgeting ..... 1
- Transit Modes** ..... 3
- Projects<sup>1</sup>** ..... 5
  - Changes to Authorized Project Allocations from 2016 to 2017 ..... 6
  - Project Summary and Detail Pages ..... 8
  - System Expansion ..... 11
  - System Expansion – Link Light Rail ..... 14
  - System Expansion – Sounder Commuter Rail ..... 29
  - System Expansion – Regional Express ..... 47
  - System Expansion – Other ..... 56
  - Enhancement Projects ..... 66
  - Rehabilitation & Replacement Projects ..... 104
  - Administrative Projects ..... 122
- Reserves** ..... 130
- Appendices** ..... 131
  - Appendix A** – Sound Transit 2 Cost Estimates ..... 131
  - Appendix B** – Sound Move Project Budgets ..... 133
  - Appendix C** – State of Good Repair Forecast ..... 134
  - Appendix D** – Reconciliation of the Proposed 2017 TIP to the Adopted 2017 TIP ..... 135
  - Appendix E** – Sound Transit Project Phases ..... 137
  - Appendix F** – Subarea Allocations ..... 138
  - Appendix G** – Glossary ..... 143

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<sup>1</sup> Index of Project Details follows on next page

## **Alphabetical Index of Project Details by Mode**

### *LINK LIGHT RAIL*

Access Control Card Upgrade .....	111
Central Link Card Readers .....	100
Central Link HVAC – Instrument House and UPS Room .....	83
Central Link Overhead Catenary System Tie Switch .....	101
Convention Place Development Systems Retrofit .....	107
Downtown Redmond Link Extension .....	18
East Link Extension .....	26
Enhancements to Tacoma Link Extension .....	16
Federal Way Link Extension .....	17
First Hill Streetcar .....	28
Link Bridge Repairs .....	113
Link CCTV System Upgrade .....	110
Link Operating Segment Systems Enhancements and Upgrades .....	71
Link Operations & Maintenance Facility – East .....	21
Link Radio Upgrade .....	112
Link Remote Switch Heaters .....	78
Link Station Braided Tile Replacement .....	114
LRV Between Car Barriers .....	87
LRV On Board Energy Storage .....	80
LRV Overhaul .....	115
LRV Wheel Flat Software .....	93
LRV Wash Bay Modifications .....	94
Lynnwood Link Extension .....	20
Noise Abatement .....	81
Non-revenue Support Vehicles .....	102
Northgate Link Extension .....	23
Northgate Link Extension Project Reserve .....	27
OMF Energy Efficiency .....	88
Operations & Maintenance Facility LRV Lift .....	74
South 200th Link Extension .....	25
Signage Improvements .....	77
ST2 Light Rail Vehicle Fleet Expansion .....	22
Tacoma Link Light Rail Vehicle Overhaul .....	108
Tacoma Link Extension .....	19
Tacoma Link Fare Collection .....	82
University Link Extension .....	24

*SOUNDER COMMUTER RAIL*

Auburn Station Access Improvement .....	35
Customer Emergency Stations .....	90
D St – M St Track & Signal .....	43
Kent Station Access Improvements .....	34
Kent Station Parking Lot Paving .....	98
Kent Station Platform Lighting .....	97
King Street Station Platform Improvements .....	86
Lakewood Station Improvements .....	33
Locomotive Inboard Cameras .....	91
M St – Lakewood Track & Signal .....	42
Mukilteo Station, S Platform .....	44
Point Defiance Bypass .....	41
Positive Train Control .....	79
Puyallup Station Improvements .....	36
Puyallup Station LED Lighting .....	95
Souder Maintenance Base .....	32
Souder Passenger Emergency Intercom .....	92
Souder South Expanded Service .....	38
Souder ST2 Fleet Expansion .....	46
Souder Vehicle Overhaul Program .....	117
Souder Yard Expansion .....	40
Station Midlife Refurbishment Program .....	118
Sumner Station Improvements .....	37
Sumner Station LED Lighting .....	96
Tacoma Trestle Track & Signal .....	39
Tukwila Station .....	45

*REGIONAL EXPRESS*

Bellevue TC Security System .....	89
Bothell Transit Related Improvements .....	51
Bus Maintenance Facility .....	72
I-90 Two-Way Transit & HOV Operations, Stage 3 .....	54
Kirkland Transit Center/3 <sup>rd</sup> .....	53
On-Demand Bike Locker Pilot .....	85
ST Express Bus Base .....	50
ST Express Fleet Expansion .....	55
ST Express Fleet Replacement .....	119
ST Express Mid-Day Bus Storage .....	52

*OTHER*

Administrative Capital .....	127
Agency Administration Operating .....	125
Bike Locker Program .....	84
Central & East HCT Study .....	59
Downtown Seattle Transit Tunnel Mitigation .....	73
Environmental Mitigation, Monitoring & Maintenance .....	126
Fare Administration .....	64
Fare Collection .....	62
Fare Policy Program .....	65
Information Technology Program .....	128
IT Link Light Rail .....	109
IT Transit Systems .....	121
OMF LRV Wash Heater System .....	99
Regional Parking Pilot Project .....	76
Research & Technology .....	63
Small Works Program .....	120
ST3 Planning .....	58
<i>STart</i> .....	60
<i>STart</i> Operations & Maintenance.....	61
Surplus Property Disposition .....	129
Tacoma Dome Station .....	116
Transit Oriented Development Property Disposition .....	103
Union Station Garden Level Remodel .....	75

# Transit Improvement Plan Overview

The 2017 Transit Improvement Plan (TIP) provides a long-term forecast of project and transit mode costs, plus reserves set aside for potential future expenditures. The Sound Transit Board adopts the TIP and the annual budget to authorize spending for the budget year, as well as authorized project allocations to date.

## Transit Modes

The TIP includes annual forecasts for six years of operating expenses for each of the agency's transit modes. The expense forecasts are developed in a detailed long-term operating and maintenance plan and reflect service plans contained in the 2017 Service Implementation Plan (SIP).

## Projects

The TIP includes project scope, schedule, budget, and risk information for all active projects. Budget information is presented at the phase-level including life-to-date costs, annual spending forecasts for the upcoming six years, summarized costs for years beyond this six-year period, and the total authorized project budget. Only board-approved allocation amounts are included. Where a baseline budget has not been approved, the total allocation only includes the authorized phases. The baseline budget reflects the estimated costs for the entire project and is used to measure actual project budget performance. For most projects, Phase Gate status is also provided. For ST2 projects only, cost estimate information is shown in the Projects section and in Appendix A. Project budgets for active Sound Move projects are shown in Appendix B.

## Reserves

The TIP includes reserves that are set aside for both planned and unplanned expenditures. Reserves are not considered appropriations, and Board authorization is required to use reserved funds.

## Financial Plan

In addition to the TIP that is published annually, Sound Transit maintains a long-term agency financial plan – a model of forecasted cash flows through 2060. A review of agency programs against the financial plan ensures a balance of revenues and expenditures, as well as affordability of the overall program. Sensitivity analysis, using the financial plan, gauges the impact of potential changes in the economy as well as changes in project schedule and scope on overall program affordability.

## Project Budgeting

### Project Prioritization Process

During the development of the budget, the agency follows an objective process to vet all proposed new projects and increases to existing projects that are not part of the Sound Move or ST2 programs. Projects are scored using objective criteria including: safety, sustainability, regulatory, financial, impact on asset “State of Good Repair,” system enhancements, security, and impact on ridership. The goal is to identify high-value, high-priority projects and pair them with available resources.

### Budget Approval and Phase Gate Process

Prior to 2010, the Sound Transit Board approved project budgets at the outset of a capital project. Since 2010, our approach to project budgeting has been modified to provide greater Board oversight and control. As projects reach key milestones, requests for budget approval to complete the next project phase are presented for Board approval. Phase Gate, our project management oversight process, confirms that the project is ready to move forward to the next phase and triggers the request to the Board for additional budget. There are exceptions to having projects pass through each gate in sequence, such as procurements and alternative contracting methods, as in design-build.

TRANSIT IMPROVEMENT PLAN SUMMARY  
(in millions)

	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
Transit Modes	\$0	\$299	\$312	\$322	\$330	\$350	\$389	\$0	\$2,003
Projects	4,711	1,304	1,532	1,325	1,292	714	507	834	12,219
Reserves	332	71	14	9	9	9	4	4	451
<b>Total</b>	<b>\$5,042</b>	<b>\$1,675</b>	<b>\$1,858</b>	<b>\$1,656</b>	<b>\$1,631</b>	<b>\$1,073</b>	<b>\$900</b>	<b>\$838</b>	<b>\$14,673</b>

Typical budget requests include funding for:

- Project development through preliminary engineering and environmental investigation.
- Final design and right-of-way acquisition.
- Baseline or total expected project budget.

The initial project development budget includes alternatives analysis to shape the scope of the project and selection of a preferred alternative, compliance with environmental requirements which may include an Environmental Impact Statement, development of operations and maintenance plans, and preliminary engineering for the preferred alternative.

A final design and right-of-way budget includes funding for all design work, including architectural, civil, structural, electrical, and HVAC systems through to construction procurement documentation, as well as purchase or lease of all property needed to build the project.

A baseline budget is established during final design when sufficient information is available to establish the cost of a project through construction. Project spending is benchmarked against the baseline through completion of the project. Projects are fully funded when the Board approves the baseline.

### **Cost Estimates**

Each ST2 capital project has a cost estimate that originated from the 2008 voter-approved plan. Original ST2 cost estimates, 2016 cost estimates, and 2017 cost estimates for ST2 projects appear in Appendix A.

Our cost estimates are maintained on a current year, constant dollar basis. For instance, in the 2017 TIP, full project cost estimates are presented in constant 2016 dollars. The constant dollar presentation allows for comparison of estimated costs across multiple projects. However, the Board approves budgets in year-of-expenditure dollars to take into account the fact that project spending occurs over several years and so must be adjusted for inflation.

*Souder Commuter Rail*





# Transit Modes

The Adopted 2017 Transit Improvement Plan (TIP) contains forecasted expenses to operate and maintain the regional transit system from 2017 through 2022. Operating expenses include the costs of third-party operators for light rail, commuter rail, and bus services, as well as Sound Transit's direct costs and administrative overhead for providing those services.

As a part of the annual budget, the Sound Transit Board approves spending for each of these modal services for the following fiscal year. The agency also maintains a Service Implementation Plan (SIP) that includes service level and expenditure forecasts for a six-year period. The SIP provides the service plan on which the Adopted 2017 Budget is based. Reviewed and recommended by the Operations and Administration Committee, the Board adopts the 2017 SIP at the same time as adopting the budget and TIP for 2017. The TIP only includes summary spending information for the six-year period described in the SIP. The SIP may be read at [www.soundtransit.org](http://www.soundtransit.org).

In 2017 service levels provided by three of Sound Transit's four modes will be increasing.

- In the fourth quarter of 2017, two additional round trips, one peak and one reverse commute, for Sounder commuter rail service are planned. The midday round trip added in late 2016 will operate for a full year in 2017.
- ST Express will operate a full year of the 32,000 service hours added in 2015 and just 6,428 hours of the 15,000 annual hours to be added in 2017. The new service hours will be phased in for ST Express service to help mitigate degradation of service caused by traffic congestion.

- Link will operate a full year of service to University of Washington and Angle Lake Station that started in 2016. In 2021, light rail service north to Northgate will begin.
- There are no changes planned for Tacoma Link light rail service.

In the next few years, buses will no longer operate in the Downtown Seattle Transit Tunnel and Link light rail operations will take over all costs. Operating underground stations, such as Capitol Hill and University of Washington, is more expensive than anticipated, so projections are higher than in the Adopted 2016 TIP. In 2020 the Link Operations & Maintenance Facility East will open with all costs attributed to Link operations. Vehicle maintenance costs are expected to increase over this six-year time period due to aging of the fleet, and in 2021 the Northgate Link Extension will begin revenue service with a full year of operations in 2022.

Sounder costs will increase in 2018 due to the full year of the two roundtrips added in 2017. In 2021 the new Sounder Maintenance Base is scheduled to open, and we expect our costs to decrease with the close out of our contract with Amtrak.

ST Express costs are expected to rise in 2018 due to the full year of 2017 service hour additions.

The expansion of Tacoma Link to the Hilltop area of Tacoma is currently in final design with projected revenue service opening in 2022. Expansion of the Tacoma Link Operations & Maintenance Facility is expected to be complete in 2021 and will trigger hiring as early as 2019. Staff, maintenance, insurance, and other costs will increase substantially once the expansion opens.

## TRANSIT MODES SUMMARY (in millions)

Mode	2017	2018	2019	2020	2021	2022	Total
Link Light Rail	\$104	\$108	\$112	\$116	\$134	\$162	\$736
Sounder Commuter Rail	57	5	6	7	9	12	96
ST Express Bus	134	61	64	67	62	65	452
Tacoma Link Light Rail	5	138	140	141	146	151	720
<b>Total</b>	<b>\$299</b>	<b>\$312</b>	<b>\$322</b>	<b>\$331</b>	<b>\$350</b>	<b>\$389</b>	<b>\$2,004</b>

*Downtown Bellevue north portal construction*



# Projects

The 2017 Transit Improvement Plan (TIP) contains all active board-authorized project allocations for active projects. The majority of Sound Transit's projects support the planning, design, and construction of light rail, commuter rail, and express bus transit infrastructure as described in the Sound Move and ST2 plans. The TIP uses project categories, which aligns with common industry practice and provides transparency into the agency's investment in expanding service versus investment in existing assets. Projects are also reported by program.

## PROJECT DELIVERY SUMMARY BY PROJECT TYPE (in millions)

	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total TIP
<b>System Expansion</b>									
Link	\$3,523	\$998	\$1,235	\$1,216	\$1,165	\$602	\$447	\$498	\$9,684
Sounder	666	98	79	13	2	2	-	-	859
Regional Express	176	58	24	-	33	-	-	-	290
Other	60	14	40	10	8	5	5	18	161
<b>System Expansion Subtotal</b>	<b>4,425</b>	<b>1,168</b>	<b>1,378</b>	<b>1,239</b>	<b>1,208</b>	<b>609</b>	<b>452</b>	<b>516</b>	<b>10,994</b>
<b>Enhancement</b>	65	31	21	9	1	1	1	0	129
<b>Rehabilitation &amp; Replacement</b>	140	24	59	2	1	22	1	3	252
<b>Administrative</b>	81	82	74	75	81	82	53	315	844
<b>Total</b>	<b>\$4,711</b>	<b>\$1,304</b>	<b>\$1,532</b>	<b>\$1,325</b>	<b>\$1,292</b>	<b>\$714</b>	<b>\$507</b>	<b>\$834</b>	<b>\$12,219</b>

## PROJECT DELIVERY SUMMARY BY MODE (in millions)

	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total TIP
<b>Link</b>	\$3,538	\$1,023	\$1,240	\$1,216	\$1,165	\$602	\$447	\$498	\$9,730
<b>Sounder</b>	719	116	84	20	2	2	-	-	943
<b>Regional Express</b>	303	59	87	-	33	20	-	-	502
<b>Other</b>	150	106	121	89	92	90	60	337	1,045
<b>Total</b>	<b>\$4,711</b>	<b>\$1,304</b>	<b>\$1,532</b>	<b>\$1,325</b>	<b>\$1,292</b>	<b>\$714</b>	<b>\$507</b>	<b>\$834</b>	<b>\$12,219</b>

The Projects section of the TIP document displays project allocations primarily in terms of cash flow – what year dollars will be spent and on which phase of a project. The total budget to complete a project is not necessarily included in the TIP because the agency's Phase Gate process requires most project budgets be approved by the Board in phases, rather than all at once. There are a number of terms that require definition in order to clearly understand the tables in this section.

**Allocation to Date** – Sum of all project expenditures prior to the budget year.

**Annual Cash Flow** – Annual projected expenditures are shown for six years beginning with the budget year.

**Future** – Refers to the sum of projected expenditures for years seven and beyond.

**Total** – The total Board-approved budget for a project. It may be just preliminary engineering, final design, and right-of way, or it could be the budget for the entire project budget.

Each of the project detail pages include the type and amount of the Board-approved allocation. Allocation to date is stated in year-of-expenditure dollars (YOES). Appendix B contains a summary of lifetime budgets for active Sound Move projects.

**Cost Estimates** – Most comparable to a baseline budget – cost estimates are for the entire project scope. Cost estimates are periodically updated as new information becomes available. Estimates are also adjusted each year for inflation and stated in constant-year dollars.

For ST2 projects only, project detail pages in the following subsections show project cost estimates. Cost estimates for 2008 (the year ST2 was adopted by voters), 2015, and 2016 are stated in constant-2015 dollars. A summary of ST2 cost estimates is provided in Appendix A.

### Changes to Authorized Project Allocations to Date from 2016 to 2017

The table below is a reconciliation of changes in authorized project allocations to date from the Adopted 2016 TIP to the Adopted 2017 TIP by project type. A breakdown of the changes by project is included under each relevant subsection.

#### CHANGES TO AUTHORIZED PROJECT ALLOCATIONS FROM 2016 TO 2017 (in millions)

Project Type	2016 Project Total	2016 Closed Projects	2017 New Projects	Budget Transfers	Budget Inc/(Dec)	Transfer from Cost Estimates	2017 Project Budget
<b>System Expansion</b>							
Link Light Rail	\$11,458	(\$2,092)	\$0	\$0	\$0	\$318	\$9,684
Sounder	852	(6)	-	-	(4)	17	\$859
Commuter Rail							
Regional Express	322	(45)	-	-	14	-	\$290
Bus							
Other	164	(2)		-	-	-	\$161
<b>System Expansion Subtotal</b>	<b>\$12,795</b>	<b>(\$2,146)</b>	<b>\$0</b>	<b>\$0</b>	<b>\$10</b>	<b>\$335</b>	<b>\$10,994</b>
<b>Enhancement</b>	139	(16)	7	(1)	0	-	\$129
<b>Rehabilitation and Replacement</b>	242	(3)	5	1	7		\$252
<b>Administrative</b>	840	-	-	-	4	-	844
<b>Total</b>	<b>\$14,016</b>	<b>(\$2,165)</b>	<b>\$12</b>	<b>\$0</b>	<b>\$21</b>	<b>\$335</b>	<b>\$12,219</b>

2016 Closed Projects – Closed projects are excluded from the 2017 TIP.

- Thirteen projects completed Phase Gate 8 and were closed in September 2016.

2017 New Projects – Newly created projects for the 2017 budget year.

- Fifteen projects are new for 2017.
  - Link Light Rail Vehicle (LRV) Wash Bay Modifications for \$300 thousand, to allow for two-car washing and automated forehead (front) washing of the LRV, current done manually. This modification will reduce washing times and improve driver safety as they will no longer have to manually wash the forehead of the LRV.
  - LRV Wheel Flat Software for \$250 thousand, which will allow for the automated identification of LRV truck wheels which are out of round. This can be accomplished while the wheels remain on the LRV. Further, this allows for the continued monitoring, awareness and causes of noise and vibration along the link system.
  - Link OMF Energy Efficiency project for \$1.1 million at the OMF on Forest Street. This project will reduce energy consumption by approximately 880,000 kilowatts of energy annually.
  - Customer Emergency Stations at Kent and Auburn Sounder station parking garages for \$800 thousand. These emergency stations will be located on each parking garage floor allowing riders to alert staff of potential security issues in the garage.
  - Locomotive Inboard Facing Camera project for \$300 thousand is a Federal Railroad Administration requirement to install cameras to monitor the engineer while operating the locomotive.
  - Sounder Passenger Emergency Intercom for \$1.5 million will allow Sounder passengers to communicate directly with the conductor in emergencies which is a change from communicating with the engineer and having the concerns relayed to the conductor.
  - Installation of a security system at the Bellevue Transit Center for \$150 thousand, which will add CCTV and other security enhancements to the transit center in 2017.
  - Link Bridge Repairs for \$550 thousand will commence on two bridges after structural inspection identified some required repairs to maintain the life of the structures.

9. Link Radio Upgrades for \$1 million will replace the distributed antenna system as the current antenna system has reached the end of its useful life.
10. Access Control System Upgrade for \$1.1 million to centralize the single access control to Sound Transit facilities.
11. LRV Between Car Barriers for \$560 thousand to comply with Federal Transit Administration requirements to enhance safety for visually impaired riders.
12. King Street Station Platform Improvements for \$300 thousand toward a partnership for access improvements at King Street Station to improve access to Century Link Field.
13. Convention Place Development Retrofit for \$2.5 million retrofit redundant power distribution at the Pine Street in support of the new traction power substation.
14. Link Operating Segment Enhancements for \$1.4 million to provide enhancements and upgrades to systems on the link operating segment.
15. On-Demand Bike Locker pilot for \$60 thousand to provide on-demand bike locker access at the Mercer Island Transit Center for evaluation for potential use at other locations.

**Budget Transfers** –Moving project budget to new or existing projects.

- Link CCTV Upgrades of \$700 thousand was moved from Enhancements to Rehabilitation and Replacement as the project was better categorized as Rehabilitation and Replacement project.

**Budget Increases (Decreases)** – Project budget increases or decreases that are not transfers.

- Link CCTV Upgrades was increased by \$2.4 million to fund the replacement of all analog cameras which had reached the end of their useful life with modern digital format CCTV cameras.
- Sounder Vehicle Overhaul increased by \$800 thousand to support the rehabilitation of passenger doors on older Sounder cab cars and to rehabilitate wayside power units (HEP Controllers) to provide alternative power to locomotives on standby versus running the locomotive engines.
- Station Midlife Refurbishment increased by \$245 thousand to fund the replacement of the bus loop at the Tukwila International Boulevard Station.
- Small Works Program increased the project budget \$3.4 million to add a year to the program and fund issues requiring immediate attention.
- ST2 Fleet Expansion project increased \$13.6 million to increase the ST Express bus fleet by 11 buses in support of a 15,000 service hour increase in response to ridership demand and route congestion.
- Signage Improvements project increased by \$200 thousand to fund a wayfinding study to ease access to Link services.
- Administrative Capital project increased by \$3.8M to fund tenant improvements at newly leased Sound Transit facilities.
- 2016 Amendments changing existing projects.
  1. Tacoma Trestle Track and Signal project budget was increased by \$40.6 million when the project's baseline budget was increased to accommodate additional project scope.
  2. Point Defiance Bypass project budget was decreased by \$44.3 million to recognize the reduction of project risk as the project's scope became more clearly defined.

**Transfer from Cost Estimate** – Budget approved for an amount that is within the ST2 cost estimate for the project.

- Tacoma Link Expansion was increased by \$550 thousand to fund pre-construction services.
- 2016 Amending actions that resulted in transfers from cost estimates:
  1. Auburn Station Access Improvements project was established in 2016 and has an authorized budget of \$831 thousand. The project will include improvements to parking facilities, pedestrian and bicycle access, and bicycle storage.
  2. Kent Station Improvements project was established in 2016 and has an authorized budget of \$831 thousand. The project will include improvements to parking facilities, pedestrian and bicycle access, and bicycle storage.

3. Operations and Maintenance Facility – East (previously Operations and Maintenance Satellite Facility) was increased by \$315.6 million when the project's baseline budget was adopted.
4. Lynnwood Link project budget was increased by \$500 thousand fund early permit costs of the project.
5. Tacoma Link Extension project budget was increased by \$1.1 million to provide funding for pre-construction and construction management costs as the project moves closer to establishing a baseline budget.
6. Sumner Station Access Improvements project was increased by \$1.5 million to acquire right of way.
7. Sounder Maintenance Base project was increased by \$2.1 million to allow the timely acquisition of right of way.

## Project Summaries and Detail Pages

In the Projects section, details pertaining to each project are provided as well as summaries of each program.

### Summary Tables

Summary tables for all allocations approved by the Board include three views:

- Projects by budget approval phase. Two exceptions are programs, which are comprised of a number of projects, and reserves.
- Subarea by allocation to Sound Transit's five geographic subareas.
- Project phase, by the agency's work breakdown structure phases that group costs relative to activities and deliverables such as final design, construction, and startup and testing.

### Project Detail

Each active project has a full page that covers scope, authorized project allocation to date and cashflow detail, phase gate status, and schedule and budget risk information. For ST2 projects, cost estimate updates are included. The following is an explanation of terms used in the project pages.

### Capital Budget (in YOE dollars)

#### Phase Gate Passed

The most recent gate passed indicates a project's progress. Certain Sound Move projects pre-date implementation of our Phase Gate process and are not required to pass through gates that they would have if the process had been in place at that time.

**Pending** – Projects that will pass through Gate 1 before the end of the coming year.

**Gate 7** – Transition to Operations

**Gate 8** – Close Out Project

**Gate 1** – Enter Project Development

**None** – Projects that advanced through project development prior to implementation of Phase Gate (includes some Sound Move projects).

**Gate 2** – Identify Alternatives

**Gate 3** – Identify Preferred Alternative

**N/A** – Projects not subject to the Phase Gate process, e.g., procurements, installation of equipment, etc.

**Gate 4** – Enter Final Design

**Gate 5** – Establish Baseline

**Gate 6** – Proceed to Construction

#### Baseline

Baseline budget is the lifetime budget for the entire project in year of expenditure dollars. The baseline budget is established once the project scope and schedule are defined.

#### 2016 TIP

Project allocation authorized by the Board in 2016 or prior.

#### 2017 TIP

Project allocation authorized by the Board in 2017 or prior.

## ST2 Project Cost Estimate (in 2016 dollars)

This section of the project page is for ST2 projects only and provides a history of funded cost estimate updates in constant dollars. Cost estimates provided include the original 2008 estimate, prior year estimate, and budget year estimate.

### Budget Risk Assessment

#### Estimate Type

Basis of current budget estimate used for a project:

- Initial Estimate – Sound Move or ST2 program plans
- Planning – preliminary conceptual estimate developed for specific sites based on limited project information
- Conceptual Engineering
- Scoping – itemized right-of-way and construction costs on an estimated unit price basis
- PE/ED – preliminary engineering/environmental design
- Final Design
- Construction – full design drawings, specifications, and known unit prices
- Fixed Contribution – contractual amount of funds Sound Transit is to contribute to a project implemented by another transit agency or governmental entity. This may not reflect a project's total cost estimate.

#### Budget Risk Level

Overall risk level for each project is classified as low, medium, or high, depending on the presence of uncertainties that could impact the scope or budget.

### Schedule Risk Assessment

#### Schedule Risk Level

Overall risk level for each project is classified as low, medium, or high depending on the presence of risk factors that could impact the completion schedule for budgeted phases. If the project has a baseline budget, then risk is assessed at the level of the entire project through to putting the asset into service.

#### 2016 Budget Schedule

The year anticipated for completion of the budgeted phases of the project at the time the 2016 TIP is published.

#### 2017 Budget Schedule

The year anticipated for completion of the budgeted phases of the project at the time the 2017 TIP is published.

### Project Risk Assessment

Explanation of the budget or schedule risk for the budgeted phases of the project.

East Link Extension Groundbreaking





## System Expansion

As a relatively young transit system, the majority of Sound Transit's project budgets are focused on building light rail to connect the region. Both Sound Move and ST2 programs funded light rail facilities and tracks – in tunnels, at grade, and elevated. By 2023, these two programs will extend light rail north to Lynnwood, south to Federal Way, and east to the Overlake area of Redmond.

Commuter rail is focused on providing rail service between Everett and Seattle from the north and Lakewood to Seattle from the south. Projects are now focused on rail station improvements among its 12 commuter rail stations, track and signal improvements in Tacoma, and the improvement of track and signals between Lakewood and Nisqually.

Projects in support of Regional Express bus services are mostly completed, and the focus is now on the expansion of high occupancy vehicle (HOV) transit lanes on I-90.

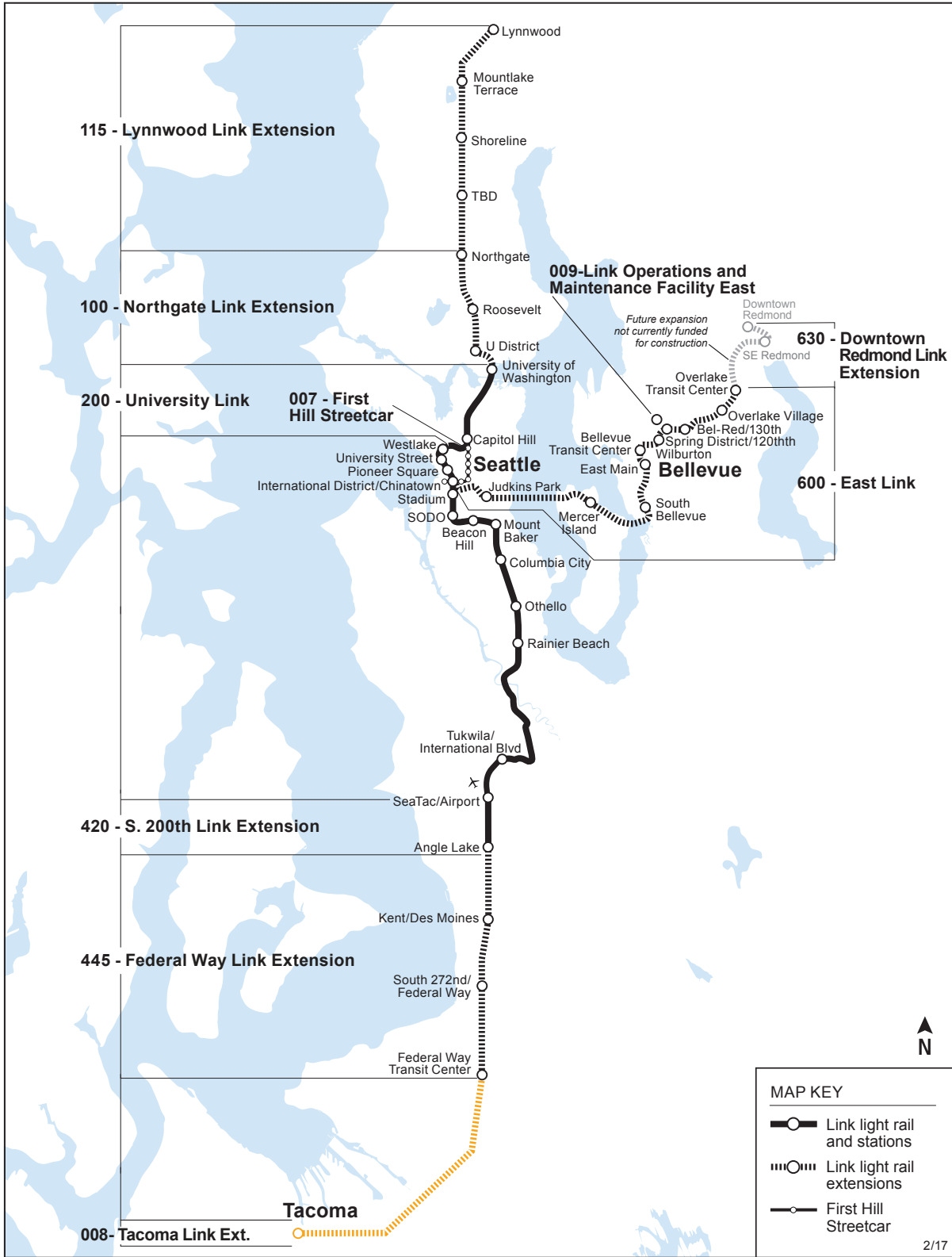
### 2017 System Expansion Project Highlights

- Continue East Link Extension construction of segments in south Bellevue, downtown Bellevue-Spring District and Bel-Red area, with tunneling in Bellevue.
- Complete the I-90 Two-Way Transit and HOV Operations Stage 3 allowing the center roadway to be turned over to begin East Link construction on I-90.
- Complete preliminary engineering and commence final design of the preferred alternative to expand Tacoma Link.
- Focus on construction for Northgate Link Extension and complete final design and baseline for Lynnwood Link Extension.
- Continue close out activities for the University Link and South 200th Street extensions that both opened for passenger service in 2016. Complete road improvements within the South 200<sup>th</sup> Link segment.
- Complete preliminary engineering to Federal Way Transit Center and begin final design to allow for the construction of a light rail extension from South 200th Street to Highline Community College.
- Reach substantial completion of construction on track and signal improvements from Tacoma to Nisqually along Sound Transit owned right-of-way for Point Defiance Bypass.

### CHANGES TO AUTHORIZED PROJECT ALLOCATIONS TO DATE (in thousands)

Project	Reason	Budget Type	Explanation	Change
<b>LINK</b>				
Tacoma Link Extension	Phase Gate	Final Design & ROW	Budget was increased to fund pre-construction CMC services and the City Services Agreement with the city of Tacoma which will be needed prior to the establishment of the project baseline.	\$550
<b>REGIONAL EXPRESS</b>				
ST Express Fleet Expansion	Cost Increase	Operating	Additional 11 buses in support of additional 15,000 bus service hours to support increased ridership demands and driving congestion during peak service hours.	\$13,572
<b>OTHER</b>				
Fare Administration	Transfer	Program	Scope and budget were transferred from Fare Administration to create a new project for the Fare Policy Program.	(\$1,508)
Fare Policy Program	New Project	Program	New project created to separately report the Fare Policy Program from Fare Administration.	\$1,508

LINK LIGHT RAIL CAPITAL PROJECTS



# TACOMA LINK LIGHT RAIL CAPITAL PROJECTS



## 2017 TIP Cashflow by Budget Approval

(in thousands)

### System Expansion

#### LINK

Project Number and Name	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
<b>Preliminary Engineering</b>									
400034 Enhancements to Tacoma Link Expansion	0	1,500	500	0	0	0	0	0	2,000
4X445 Federal Way Link Extension	35,412	6,121	7,257	0	0	0	0	0	48,790
4X630 Downtown Redmond Link Extension	214	14,225	14,178	0	0	0	0	0	28,617
<b>Subtotal</b>	<b>35,626</b>	<b>21,846</b>	<b>21,935</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>79,407</b>
<b>Final Design &amp; ROW</b>									
400008 Tacoma Link Expansion	10,361	12,096	5,320	1,941	1,837	2,028	1,039	0	34,622
4X115 Lynnwood Link Extension	90,024	116,296	129,171	46,167	36,221	27,771	23,100	19,610	488,361
<b>Subtotal</b>	<b>100,384</b>	<b>128,392</b>	<b>134,490</b>	<b>48,108</b>	<b>38,058</b>	<b>29,800</b>	<b>24,140</b>	<b>19,610</b>	<b>522,983</b>
<b>Baseline</b>									
400009 Link Operations & Maintenance Facility - East	34,358	108,766	90,779	92,882	96,612	25,526	297	0	449,220
400032 ST2 Light Rail Vehicle Fleet Expansion	14,736	59,534	26,398	99,138	123,584	148,945	163,010	97,660	733,006
4X100 Northgate Link Extension	788,771	267,957	304,500	242,086	139,017	44,746	16,555	96,123	1,899,756
4X200 University Link Extension	1,499,548	7,795	18,063	32,033	198,568	0	0	0	1,756,007
4X420 South 200th Link Extension	319,400	9,428	26,179	28,234	0	0	0	0	383,241
4X600 East Link Extension	597,776	393,373	613,089	673,090	569,465	353,296	242,960	234,101	3,677,150
<b>Subtotal</b>	<b>3,254,589</b>	<b>846,854</b>	<b>1,079,008</b>	<b>1,167,463</b>	<b>1,127,246</b>	<b>572,514</b>	<b>422,822</b>	<b>427,884</b>	<b>8,898,380</b>
<b>Reserve</b>									
4X199 Northgate Link Extension Project Reserve	0	0	0	0	0	0	0	50,000	50,000
<b>Subtotal</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>50,000</b>	<b>50,000</b>
<b>Operating</b>									
400007 First Hill Streetcar	132,292	438	8	8	8	8	8	13	132,780
<b>Subtotal</b>	<b>132,292</b>	<b>438</b>	<b>8</b>	<b>8</b>	<b>8</b>	<b>8</b>	<b>8</b>	<b>13</b>	<b>132,780</b>
<b>Total</b>	<b>\$3,522,891</b>	<b>\$997,529</b>	<b>\$1,235,441</b>	<b>\$1,215,579</b>	<b>\$1,165,312</b>	<b>\$602,322</b>	<b>\$446,969</b>	<b>\$497,507</b>	<b>\$9,683,550</b>

**2017 TIP Cashflow by Subarea**  
(in thousands)

System Expansion  
LINK

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
1 - Snohomish	58,136	93,482	92,758	56,609	54,895	38,397	32,236	22,426	448,942
2 - North King	2,475,228	367,372	407,972	344,377	410,663	108,428	77,460	185,741	4,377,243
3 - South King	363,324	44,172	54,297	58,955	34,615	24,264	21,248	12,696	613,572
4 - East King	615,842	478,906	674,594	753,696	663,301	429,204	314,985	276,643	4,207,171
5 - Pierce	10,361	13,596	5,820	1,941	1,837	2,028	1,039	0	36,622
<b>Total</b>	<b>\$3,522,891</b>	<b>\$997,529</b>	<b>\$1,235,441</b>	<b>\$1,215,579</b>	<b>\$1,165,312</b>	<b>\$602,322</b>	<b>\$446,969</b>	<b>\$497,507</b>	<b>\$9,683,550</b>

**2017 TIP Cashflow by Phase**  
(in thousands)

Phase # and Description	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	20	0	0	0	0	0	0	0	20
20-Prelim Engineering/Env Review	216,569	47,471	58,737	57,627	72,667	43,808	41,268	62,835	600,981
30-Final Design+Specifications	180,819	12,055	14,596	250	250	250	271	2,941	211,433
35-Third Party	402,472	69,220	69,613	26,341	23,512	15,954	11,985	15,571	634,668
40-Row Acquisition+Permits	164,580	18,476	23,664	12,213	15,192	7,271	5,541	4,000	250,938
50-Construction	502,331	231,060	87,078	10,195	32,867	2,000	650	6,315	872,496
55-Construction Services	1,760,596	494,612	864,819	917,044	812,161	326,389	187,122	206,708	5,569,451
70-Vehicles	173,729	65,370	90,948	91,634	80,183	54,537	37,944	32,710	627,056
80-System Testing+Startup	112,154	58,667	24,906	99,059	123,412	146,838	160,815	94,227	820,077
90-Contingency	9,620	600	1,080	1,216	5,067	5,274	1,373	0	24,230
<b>Total</b>	<b>\$3,522,891</b>	<b>\$997,529</b>	<b>\$1,235,441</b>	<b>\$1,215,579</b>	<b>\$1,165,312</b>	<b>\$602,322</b>	<b>\$446,969</b>	<b>\$497,507</b>	<b>\$9,683,550</b>

400034

**Enhancements to Tacoma Link Extension**

**Managed by: FIT**

Scope: Engineering and streetscape design for transit access improvements and station area enhancements around the Tacoma Link Extension project. This project is also focused on job access needs and identifying barriers that currently limit the Tacoma Hilltop residents from participation in existing workforce training and apprenticeship programs. The City of Tacoma and Sound Transit received a \$2.0 million grant from the Federal Transit Administration for this project. Sound Transit is the designated recipient and needs to administer the grant while the City of Tacoma will execute the scope and provide \$500,000 in local matching funds.

The scope of this project is independent of the Tacoma Link Extension project.

Changes to authorized project allocation since 2016: None.

Authorized Project Allocation to Date (in \$000s of \$ YOE dollars)		Total Financial Plan Project Estimate (in \$000s of \$ 2016)	
Phase Gate Passed:	N/A	2008 Cost Estimate:	N/A
Baseline:	\$0	2016 Cost Estimate:	N/A
2016 TIP:	\$2,000	2017 Cost Estimate:	N/A
2017 TIP:	\$2,000		

**Cashflow (in thousands)**

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
Pierce	0	1,500	500	0	0	0	0	0	2,000
Total	0	1,500	500	0	0	0	0	0	2,000

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
35-Third Party	0	1,500	500	0	0	0	0	0	2,000
Total	0	1,500	500	0	0	0	0	0	2,000

Budget Risk Assessment		Schedule Risk Assessment	
Estimate Type:	Fixed Contribution	Schedule Risk Level:	Low
Budget Risk Level:	Low	2016 Budget Schedule:	2018
		2017 Budget Schedule:	2018

**Project Risk Assessment**

Although the risk is low in both schedule and budget, this project will be managed by a third party and Sound Transit will submit costs for reimbursement. In situations such as this, the risk of not recovering funds due to ineligibility or a delay in schedule always exists.

**4X445** **Federal Way Link Extension** **Managed by: PEPD**

Scope: Federal Way Link Extension project adds approximately 7.8 miles of light rail from S. 200th Street in the city of SeaTac to the Federal Way Transit Center. Currently, the agency's Financial Plan includes construction for the initial 2.4-mile segment to Kent/Des Moines only. In 2016 the Board has approved additional budget (Resolution R2016-04) to complete preliminary engineering from Kent/Des Moines through to Federal Way Transit Center.

Changes to authorized project allocation since 2016: None.

Authorized Project Allocation to Date (in \$000s of \$ YOE dollars)		Total Financial Plan Project Estimate (in \$000s of \$ 2016)	
Phase Gate Passed:	3-Identify Preferred Alternative	2008 Cost Estimate:	\$525,433
Baseline:	\$0	2016 Cost Estimate:	\$465,782
2016 TIP:	\$48,790	2017 Cost Estimate:	\$465,782
2017 TIP:	\$48,790		

**Cashflow (in thousands)**

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
South King	35,412	6,121	7,257	0	0	0	0	0	48,790
Total	35,412	6,121	7,257	0	0	0	0	0	48,790

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	5,606	1,751	2,028	0	0	0	0	0	9,385
20-Prelim Engineering/Env Review	28,287	1,052	3,990	0	0	0	0	0	33,329
35-Third Party	763	947	740	0	0	0	0	0	2,449
40-Row Acquisition+Permits	757	2,371	499	0	0	0	0	0	3,627
Total	35,412	6,121	7,257	0	0	0	0	0	48,790

Budget Risk Assessment		Schedule Risk Assessment	
Estimate Type:	Planning	Schedule Risk Level:	High
Budget Risk Level:	High	2016 Budget Schedule:	2017
		2017 Budget Schedule:	2018

Project Risk Assessment
Uncertainties exist in design and third party coordination that could present schedule risks; Market conditions – price escalation, labor shortages; Instability in property values may also impact cost.

**4X630** **Downtown Redmond Link Extension** **Managed by: PEPD**

Scope: The Downtown Redmond PE project performs preliminary engineering for a 3.7 mile extension of light rail from Overlake Transit Center to Redmond Terminal Station to establish route and station locations. During 2016, full funding to complete the preliminary engineering to Downtown Redmond for the future extension of East Link.

Changes to authorized project allocation since 2016: None.

Authorized Project Allocation to Date (in \$000s of \$ YOE dollars)		Total Financial Plan Project Estimate (in \$000s of \$ 2016)	
Phase Gate Passed:	3-Identify Preferred Alternative	2008 Cost Estimate:	\$18,530
Baseline:	\$0	2016 Cost Estimate:	\$18,422
2016 TIP:	\$28,617	2017 Cost Estimate:	\$18,422
2017 TIP:	\$28,617		

**Cashflow (in thousands)**

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
East King	214	14,225	14,178	0	0	0	0	0	28,617
Total	214	14,225	14,178	0	0	0	0	0	28,617

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	214	2,425	2,667	0	0	0	0	0	5,306
20-Prelim Engineering/Env Review	0	10,200	9,561	0	0	0	0	0	19,761
35-Third Party	0	1,100	1,400	0	0	0	0	0	2,500
40-Row Acquisition+Permits	0	500	550	0	0	0	0	0	1,050
Total	214	14,225	14,178	0	0	0	0	0	28,617

Budget Risk Assessment		Schedule Risk Assessment	
Estimate Type:	PE/ED	Schedule Risk Level:	Low
Budget Risk Level:	Low	2016 Budget Schedule:	2018
		2017 Budget Schedule:	2018

Project Risk Assessment
Project is currently undergoing a refinement of the conceptual design prior to launching preliminary engineering; Uncertainty exists based on potential changes to the design, new environmental issues, and an additional third party jurisdiction that could present budget and schedule risks.



<b>400008</b>	<b>Tacoma Link Extension</b>	<b>Managed by: DECM</b>
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Scope: In cooperation with the city of Tacoma and Pierce Transit, design and construct of the preferred alternative to expand Tacoma Link from north downtown Tacoma to the Stadium District and Hilltop.

Changes to authorized project allocation since 2016: \$1.62 million to support the procurement of preconstruction services by a construction management consultant and execution of the City Services Agreement with Tacoma.

Authorized Project Allocation to Date (in \$000s of \$ YOE dollars)	Total Financial Plan Project Estimate (in \$000s of \$ 2016)
Phase Gate Passed: 4-Enter Final Design	
Baseline: \$0	2008 Cost Estimate: \$106,678
2016 TIP: \$33,002	2016 Cost Estimate: \$144,436
2017 TIP: \$34,622	2017 Cost Estimate: \$144,436

**Cashflow (in thousands)**

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
Pierce	10,361	12,096	5,320	1,941	1,837	2,028	1,039	0	34,622
Total	10,361	12,096	5,320	1,941	1,837	2,028	1,039	0	34,622

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	2,999	1,606	1,394	1,266	1,187	1,187	961	0	10,600
20-Prelim Engineering/Env Review	5,558	0	292	0	0	0	21	0	5,872
30-Final Design+Specifications	1,484	5,775	1,839	575	550	550	57	0	10,830
35-Third Party	0	750	560	0	0	0	0	0	1,310
40-Row Acquisition+Permits	110	2,565	525	0	0	0	0	0	3,200
55-Construction Services	0	600	210	0	0	0	0	0	810
70-Vehicles	209	800	500	100	100	291	0	0	2,000
Total	10,361	12,096	5,320	1,941	1,837	2,028	1,039	0	34,622

Budget Risk Assessment	
Estimate Type:	PE/ED
Budget Risk Level:	High

Schedule Risk Assessment	
Schedule Risk Level:	Low
2016 Budget Schedule:	2018
2017 Budget Schedule:	2018

Project Risk Assessment
Unidentified utility conflicts poses high risk to project budget and schedule. Uncertainties regarding third party funding. Additional scope regarding roadway and street improvement have yet to be identified may impact budget and schedule.

**4X115****Lynnwood Link Extension****Managed by: DECM**

Scope: Lynnwood Link Extension extends light rail 8.5 miles from Northgate Station in Seattle through Shoreline and Mountlake Terrace to the Lynnwood Transit Center. The project alignment is primarily along I-5 and includes at-grade, elevated and retained cut/fill segments, with stations at NE 145th Street, NE 185th Street, Mountlake Terrace Transit Center and Lynnwood Transit Center.

Changes to authorized project allocation since 2016: \$500 thousand for early permitting costs.

Authorized Project Allocation to Date (in \$000s of \$ YOE dollars)		Total Financial Plan Project Estimate (in \$000s of \$ 2016)	
Phase Gate Passed:	4-Enter Final Design	2008 Cost Estimate:	\$1,769,504
Baseline:		2016 Cost Estimate:	\$1,507,972
2016 TIP:	\$487,861	2017 Cost Estimate:	\$1,507,972
2017 TIP:	\$488,361		

**Cashflow (in thousands)**

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
Snohomish	49,153	63,497	70,527	25,207	19,777	15,163	12,613	10,707	266,645
North King	40,871	52,798	58,643	20,960	16,445	12,608	10,488	8,903	221,716
Total	90,024	116,296	129,171	46,167	36,221	27,771	23,100	19,610	488,361

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	12,661	7,225	11,370	11,412	11,315	11,290	12,170	10,862	88,305
20-Prelim Engineering/Env Review	39,062	0	0	0	0	0	0	2,938	42,000
30-Final Design+Specifications	16,540	37,750	33,674	4,988	5,000	5,000	5,000	3,500	111,453
35-Third Party	1,440	4,396	7,043	1,000	1,000	1,000	1,000	521	17,400
40-Row Acquisition+Permits	18,261	57,025	48,493	0	0	0	0	0	123,779
50-Construction	0	100	400	0	0	0	0	0	500
55-Construction Services	2,060	9,800	28,191	28,767	18,906	10,481	4,930	1,789	104,925
Total	90,024	116,296	129,171	46,167	36,221	27,771	23,100	19,610	488,361

Budget Risk Assessment		Schedule Risk Assessment	
Estimate Type:	PE/ED	Schedule Risk Level:	Medium
Budget Risk Level:	Medium	2016 Budget Schedule:	2018
		2017 Budget Schedule:	2018

**Project Risk Assessment**

Differing site and underground utility conditions; third party approvals – cities, WSDOT, FHWA; ROW acquisition/relocation in time for commencement of construction; market conditions – price escalation, labor shortages; and Federal Transit Administration (FTA) requirements for New Starts grant application process has the potential to impact the schedule for completion of final design.

**400009****Link Operations & Maintenance Facility - East****Managed by: DECM**

Scope: Development, design, and construction of a light rail operations and maintenance facility in support of link system expansion.

Resolution R2015-34 approved in Dec 2015 increased lifetime budget to \$133,628,000 for the commencement of final design and early ROW activities.

Resolution R2016-18 approved July 2016 increased lifetime budget to \$449,220,000 for establishing the baseline budget, including Construction and Construction Services activities.

Changes to authorized project allocation since 2016: Project was baselined in 2016 per Resolution No. R2016-18 and increased by \$315.6 million.

Authorized Project Allocation to Date (in \$000s of \$ YOE dollars)		Total Financial Plan Project Estimate (in \$000s of \$ 2016)	
Phase Gate Passed:	6-Proceed to Construction	2008 Cost Estimate:	\$320,432
Baseline:	\$449	2016 Cost Estimate:	\$269,918
2016 TIP:	\$449,220	2017 Cost Estimate:	\$413,922
2017 TIP:	\$449,220		

**Cashflow (in thousands)**

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
Snohomish	7,215	22,841	19,063	19,505	20,288	5,361	62	0	94,336
North King	5,738	18,164	15,160	15,511	16,134	4,263	50	0	75,020
South King	6,597	20,883	17,429	17,833	18,549	4,901	57	0	86,250
East King	14,808	46,878	39,126	40,032	41,640	11,002	128	0	193,614
Total	34,358	108,766	90,779	92,882	96,612	25,526	297	0	449,220

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	2,259	2,465	3,684	3,832	3,931	1,133	268	0	17,573
20-Prelim Engineering/Env Review	8,454	553	529	0	0	0	0	0	9,536
30-Final Design+Specifications	0	0	137	140	54	56	0	0	386
35-Third Party	0	713	732	751	770	142	0	0	3,107
40-Row Acquisition+Permits	23,644	88,830	22,055	0	0	0	0	0	134,529
50-Construction	1	13,157	59,861	84,254	86,885	20,595	0	0	264,753
55-Construction Services	0	3,049	3,781	3,905	4,972	3,601	29	0	19,337
Total	34,358	108,766	90,779	92,882	96,612	25,526	297	0	449,220

Budget Risk Assessment		Schedule Risk Assessment	
Estimate Type:	Construction	Schedule Risk Level:	High
Budget Risk Level:	High	2016 Budget Schedule:	2020
		2017 Budget Schedule:	2020

**Project Risk Assessment**

Design challenges and coordination efforts with third parties, stakeholders, and jurisdictions have the potential to impact budget and schedule for completing design activities; Instability in property values may also impact cost.

**400032**

**ST2 Light Rail Vehicle Fleet Expansion**

**Managed by: DECM**

Scope: To provide project management, design, manufacturing, delivery, assembly inspection and testing in the support of a procurement of 122 low floor light rail vehicles (LRVs) to meet fleet requirements to support revenue service of all the ST2 light rail system expansion projects; and centralize procurement of the LRVs for Northgate Link Extension, Lynnwood Link Extension and East Link Extension into one project.

Changes to authorized project allocation since 2016: None.

Authorized Project Allocation to Date (in \$000s of \$ YOE dollars)		Total Financial Plan Project Estimate (in \$000s of \$ 2016)	
Phase Gate Passed:	6-Proceed to Construction	2008 Cost Estimate:	\$594,231
Baseline:	\$733,006	2016 Cost Estimate:	\$650,346
2016 TIP:	\$733,006	2017 Cost Estimate:	\$650,346
2017 TIP:	\$733,006		

**Cashflow (in thousands)**

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
Snohomish	1,768	7,144	3,168	11,897	14,830	17,873	19,561	11,719	87,961
North King	4,421	17,860	7,919	29,741	37,075	44,684	48,903	29,298	219,902
South King	1,916	7,739	3,432	12,888	16,066	19,363	21,191	12,696	95,291
East King	6,631	26,790	11,879	44,612	55,613	67,025	73,355	43,947	329,853
Total	14,736	59,534	26,398	99,138	123,584	148,945	163,010	97,660	733,006

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	234	451	435	529	560	571	545	1,423	4,748
55-Construction Services	1,749	1,217	1,850	2,075	1,712	1,828	1,650	2,010	14,090
70-Vehicles	12,753	57,867	24,113	96,535	121,312	146,546	160,815	94,227	714,168
Total	14,736	59,534	26,398	99,138	123,584	148,945	163,010	97,660	733,006

Budget Risk Assessment		Schedule Risk Assessment	
Estimate Type:	Construction	Schedule Risk Level:	Medium
Budget Risk Level:	Medium	2016 Budget Schedule:	2024
		2017 Budget Schedule:	2024

Project Risk Assessment
Timely completion of the Link O&M Facility (OMF) East to receive the new LRVs; and adequate resources (King County Metro & Operations personnel) for OMF East commissioning requirements.

**4X100****Northgate Link Extension****Managed by: DECM**

Scope: The Northgate Link Extension extends light rail 4.3-miles from the University of Washington Station north under the campus via twin bored tunnels to an underground U-District Station along Brooklyn Avenue NE between NE 43rd and NE 45th Streets, and underground Roosevelt Station along 12th Avenue NE between NE 65th Street and NE 67th Street, and continuing to an elevated station in Northgate along 1st Avenue NE spanning NE 103rd Street. The Northgate Link Extension is scheduled to be completed in September 2021 and will provide an interim terminus for Link at Northgate until the Lynnwood Link Extension is in service, currently anticipated in 2023.

Changes to authorized project allocation since 2016: None.

Authorized Project Allocation to Date (in \$000s of \$ YOE dollars)		Total Financial Plan Project Estimate (in \$000s of \$ 2016)	
Phase Gate Passed:	6-Proceed to Construction	2008 Cost Estimate:	\$1,853,049
Baseline:	\$1,899,756	2016 Cost Estimate:	\$2,017,384
2016 TIP:	\$1,899,756	2017 Cost Estimate:	\$2,017,384
2017 TIP:	\$1,899,756		

**Cashflow (in thousands)**

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
North King	788,771	267,957	304,500	242,086	139,017	44,746	16,555	96,123	1,899,756
Total	788,771	267,957	304,500	242,086	139,017	44,746	16,555	96,123	1,899,756

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	43,611	14,343	17,441	15,257	12,857	10,448	9,062	24,861	147,879
20-Prelim Engineering/Env Review	15,077	0	0	0	0	0	0	0	15,077
30-Final Design+Specifications	101,233	3,778	8,716	5,216	3,116	2,294	928	3,887	129,167
35-Third Party	5,974	1,752	1,521	1,099	546	213	250	446	11,800
40-Row Acquisition+Permits	93,158	11,594	681	450	139	0	0	6,278	112,300
50-Construction	484,928	218,371	261,441	207,744	108,875	18,343	1,052	29,338	1,330,093
55-Construction Services	44,791	18,120	14,700	11,104	8,417	8,176	3,889	9,114	118,310
80-System Testing+Startup	0	0	0	1,216	5,067	5,274	1,373	0	12,930
90-Contingency	0	0	0	0	0	0	0	22,200	22,200
Total	788,771	267,957	304,500	242,086	139,017	44,746	16,555	96,123	1,899,756

Budget Risk Assessment		Schedule Risk Assessment	
Estimate Type:	Construction	Schedule Risk Level:	Medium
Budget Risk Level:	Medium	2016 Budget Schedule:	2021
		2017 Budget Schedule:	2021

**Project Risk Assessment**

Differing site and underground conditions associated with the construction of cross passages; multiple contract interfaces between the tunneling, station finishes, trackwork and systems contractors; timely coordination with Lynnwood Link Extension on the track realignment at the Northgate station; and higher than expected contract amounts on all GC/CM contracts, including underground station construction and systems installation.

**4X200****University Link Extension****Managed by: DECM**

Scope: University Link Extension is a 3.15-mile light rail extension located entirely underground extending east from the Downtown Seattle Transit Tunnel, under I-5 to an underground Capitol Hill Station that will serve the First Hill/Capitol Hill urban center. The tunnel route crosses under the Lake Washington Ship Canal to an interim terminus in an underground University of Washington Station near Husky Stadium. University Link Extension will generate high ridership by connecting the three major population and employment centers of Downtown Seattle, Capitol Hill, and the University District.

University Link opened for revenue service on March 19, 2016, and project close-out is anticipated in 2019. Budget cash flow in 2020 reflects projected surplus budget.

Changes to authorized project allocation since 2016: None

Authorized Project Allocation to Date (in \$000s of \$ YOE dollars)		Total Financial Plan Project Estimate (in \$000s of \$ 2016)	
Phase Gate Passed:	7-Transition to Operations	2008 Cost Estimate:	N/A
Baseline:	\$1,756,007	2016 Cost Estimate:	N/A
2016 TIP:	\$1,756,007	2017 Cost Estimate:	N/A
2017 TIP:	\$1,756,007		

**Cashflow (in thousands)**

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
North King	1,499,548	7,795	18,063	32,033	198,568	0	0	0	1,756,007
Total	1,499,548	7,795	18,063	32,033	198,568	0	0	0	1,756,007

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
	20	0	0	0	0	0	0	0	20
10-Agency Administration	80,547	1,457	1,850	6,568	23,132	0	0	0	113,554
20-Prelim Engineering/Env Review	24,261	0	0	0	0	0	0	0	24,261
30-Final Design+Specifications	85,999	1,099	0	1,407	1,802	0	0	0	90,308
35-Third Party	11,347	160	643	1,177	5,319	0	0	0	18,646
40-Row Acquisition+Permits	126,408	0	0	10	25,894	0	0	0	152,312
50-Construction	976,834	4,450	14,260	18,767	134,473	0	0	0	1,148,783
55-Construction Services	86,407	628	150	1,680	5,948	0	0	0	94,814
70-Vehicles	99,193	0	292	2,424	2,000	0	0	0	103,909
80-System Testing+Startup	8,533	0	867	0	0	0	0	0	9,400
Total	1,499,548	7,795	18,063	32,033	198,568	0	0	0	1,756,007

Budget Risk Assessment		Schedule Risk Assessment	
Estimate Type:	Construction	Schedule Risk Level:	Low
Budget Risk Level:	Low	2016 Budget Schedule:	2016
		2017 Budget Schedule:	2016

**Project Risk Assessment**

The project is complete and in operation.

**4X420****South 200th Link Extension****Managed by: DECM**

Scope: The South 200th Link Extension will extend light rail approximately 1.6 miles south from Sea-Tac/Airport Station to Angle Lake Station at South 200th Street. The design features an elevated light rail guide way, an elevated station, and detached park-and-ride facility at South 200th. The project is being delivered through a design-build (DB) delivery strategy.

South 200th Link Extension opened for revenue service on September 24, 2016. Project close-out is anticipated in 2019 with a projected surplus budget.

Changes to authorized project allocation since 2016: None

Authorized Project Allocation to Date (in \$000s of \$ YOE dollars)		Total Financial Plan Project Estimate (in \$000s of \$ 2016)	
Phase Gate Passed:	7-Transition to Operations	2008 Cost Estimate:	\$430,859
Baseline:	\$383,241	2016 Cost Estimate:	\$413,082
2016 TIP:	\$383,241	2017 Cost Estimate:	\$413,082
2017 TIP:	\$383,241		

**Cashflow (in thousands)**

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
South King	319,400	9,428	26,179	28,234	0	0	0	0	383,241
Total	319,400	9,428	26,179	28,234	0	0	0	0	383,241

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	15,533	1,170	440	0	0	0	0	0	17,142
20-Prelim Engineering/Env Review	5,698	0	0	0	0	0	0	0	5,698
30-Final Design+Specifications	8,739	100	685	0	0	0	0	0	9,523
35-Third Party	3,793	77	3,215	0	0	0	0	0	7,085
40-Row Acquisition+Permits	37,991	100	5,458	0	0	0	0	0	43,549
50-Construction	229,976	6,781	16,031	28,234	0	0	0	0	281,022
55-Construction Services	16,583	600	139	0	0	0	0	0	17,322
80-System Testing+Startup	1,087	600	213	0	0	0	0	0	1,900
Total	319,400	9,428	26,179	28,234	0	0	0	0	383,241

Budget Risk Assessment		Schedule Risk Assessment	
Estimate Type:	Construction	Schedule Risk Level:	Low
Budget Risk Level:	Low	2016 Budget Schedule:	2016
		2017 Budget Schedule:	2016

**Project Risk Assessment**

Budget and schedule risks are low given post revenue service was achieved on September 2016. Follow-on work, and minor punch list and close-out activities remain.

**4X600 East Link Extension Managed by: DECM**

Scope: East Link extends light rail 14 miles to East King County from downtown Seattle serving Mercer Island via I-90, Bellevue and the Overlake area of Redmond, with ten new light rail stations. Revenue service to the Overlake Transit Center is forecasted for mid-2023.

Changes to authorized project allocation since 2016: None.

Authorized Project Allocation to Date (in \$000s of \$ YOE dollars)		Total Financial Plan Project Estimate (in \$000s of \$ 2016)	
Phase Gate Passed:	6-Proceed to Construction	2008 Cost Estimate:	\$3,545,597
Baseline:	\$3,677,150	2016 Cost Estimate:	\$3,288,852
2016 TIP:	\$3,677,150	2017 Cost Estimate:	\$3,288,852
2017 TIP:	\$3,677,150		

**Cashflow (in thousands)**

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
North King	3,587	2,360	3,679	4,039	3,417	2,120	1,458	1,405	22,063
East King	594,189	391,013	609,411	669,052	566,048	351,176	241,502	232,696	3,655,087
<b>Total</b>	<b>597,776</b>	<b>393,373</b>	<b>613,089</b>	<b>673,090</b>	<b>569,465</b>	<b>353,296</b>	<b>242,960</b>	<b>234,101</b>	<b>3,677,150</b>

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	52,675	14,571	17,420	18,755	19,678	19,172	18,253	25,677	186,200
20-Prelim Engineering/Env Review	54,423	250	224	250	250	250	250	3	55,900
30-Final Design+Specifications	188,477	20,717	24,562	14,015	12,990	8,055	6,000	8,184	283,000
35-Third Party	9,202	6,652	7,312	8,187	7,557	5,917	4,291	3,032	52,150
40-Row Acquisition+Permits	202,002	68,074	8,818	9,735	6,834	2,000	650	37	298,150
50-Construction	68,857	251,753	512,825	578,046	481,929	287,451	186,069	177,370	2,544,300
55-Construction Services	22,140	31,356	41,928	44,103	40,228	30,451	27,446	19,798	257,450
<b>Total</b>	<b>597,776</b>	<b>393,373</b>	<b>613,089</b>	<b>673,090</b>	<b>569,465</b>	<b>353,296</b>	<b>242,960</b>	<b>234,101</b>	<b>3,677,150</b>

Budget Risk Assessment	
Estimate Type:	Construction
Budget Risk Level:	Medium

Schedule Risk Assessment	
Schedule Risk Level:	Medium
2016 Budget Schedule:	2023
2017 Budget Schedule:	2023

Project Risk Assessment
Managing interface coordination with multiple contracts to maintain the project schedule including those managed by third parties and the systems contractor; Third party coordination and approval challenges; Competitiveness in the construction and labor market including increased material and ROW cost; Delay in ROW acquisition/relocation; Higher than expected cost estimates on GC/CM contracts.



4X199

Northgate Link Extension Project Reserve

Managed by: DECM

Scope: Project reserve created for the Northgate Link Extension that, if required, can be directed to mitigate budget risks associated with project construction. Funding for the reserve originated from unused funds in the project reserve that was set up for the Initial Segment. The project reserve cannot be used for additional scope and its use requires super-majority approval by the Board.

Changes to authorized project allocation since 2016: None

Authorized Project Allocation to Date (in \$000s of \$ YOE dollars)		Total Financial Plan Project Estimate (in \$000s of \$ 2016)	
Phase Gate Passed:	None	2008 Cost Estimate:	N/A
Baseline:	\$50,000	2016 Cost Estimate:	N/A
2016 TIP:	\$50,000	2017 Cost Estimate:	N/A
2017 TIP:	\$50,000		

Cashflow (in thousands)

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
North King	0	0	0	0	0	0	0	50,000	50,000
Total	0	0	0	0	0	0	0	50,000	50,000

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
90-Contingency	0	0	0	0	0	0	0	50,000	50,000
Total	0	0	0	0	0	0	0	50,000	50,000

Budget Risk Assessment		Schedule Risk Assessment	
Estimate Type:	Construction	Schedule Risk Level:	Low
Budget Risk Level:	Low	2016 Budget Schedule:	2021
		2017 Budget Schedule:	2021

Project Risk Assessment

This project reserve was established to mitigate potential project risks especially during tunnel activities. As the tunnel activity is substantially complete the risk is lower.

**400007**

**First Hill Streetcar**

**Managed by: PEPD**

Scope: Provide funding for planning, design and construction of a street car providing connections between Capitol Hill and International District/Chinatown stations via the First Hill neighborhood. Revenue operations began in 2015. Balance of activity supports potential third party work request items related to the operation of the project.

Changes to authorized project allocation since 2016: None.

Authorized Project Allocation to Date (in \$000s of \$ YOE dollars)		Total Financial Plan Project Estimate (in \$000s of \$ 2016)	
Phase Gate Passed:	7-Transition to Operations	2008 Cost Estimate:	\$140,663
Baseline:	\$132,780	2016 Cost Estimate:	\$139,295
2016 TIP:	\$132,780	2017 Cost Estimate:	\$139,295
2017 TIP:	\$132,780		

**Cashflow (in thousands)**

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
North King	132,292	438	8	8	8	8	8	13	132,780
Total	132,292	438	8	8	8	8	8	13	132,780

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	231	8	8	8	8	8	8	13	289
35-Third Party	132,061	430	0	0	0	0	0	0	132,491
Total	132,292	438	8	8	8	8	8	13	132,780

Budget Risk Assessment		Schedule Risk Assessment	
Estimate Type:	Fixed Contribution	Schedule Risk Level:	Low
Budget Risk Level:	Low	2016 Budget Schedule:	2015
		2017 Budget Schedule:	2015

Project Risk Assessment
The project is complete and in operation.

## 2017 TIP Cashflow by Budget Approval

(in thousands)

System Expansion  
**SOUNDER**

Project Number and Name	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
<b>Preliminary Engineering</b>									
300004 Sounder Maintenance Base	2,235	5,814	769	150	0	0	0	0	8,968
300019 Lakewood Station Improvements	278	0	126	0	0	0	0	0	404
300035 Kent Station Access Improvements	71	506	254	0	0	0	0	0	831
300040 Auburn Station Access Improvement	64	506	261	0	0	0	0	0	831
<b>Subtotal</b>	<b>2,647</b>	<b>6,826</b>	<b>1,410</b>	<b>150</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>11,033</b>
<b>Final Design &amp; ROW</b>									
300017 Puyallup Station Improvements	2,325	6,014	2,671	0	0	0	0	0	11,009
300018 Summer Station Improvements	4,958	4,481	1,458	2,802	1,679	1,664	0	0	17,042
3X510 Sounder South Expanded Service	194,440	4,800	120	2,608	0	0	0	0	201,968
<b>Subtotal</b>	<b>201,723</b>	<b>15,295</b>	<b>4,249</b>	<b>5,409</b>	<b>1,679</b>	<b>1,664</b>	<b>0</b>	<b>0</b>	<b>230,019</b>
<b>Baseline</b>									
300021 Tacoma Trestle Track & Signal	55,359	58,630	47,076	0	0	0	0	0	161,065
300026 Sounder Yard Expansion	12,999	4,755	2,795	0	0	0	0	0	20,550
300027 Point Defiance Bypass	61,752	6,972	14,946	0	0	0	0	0	83,670
3X130 M St-Lakewood Track & Signal	80,455	0	199	0	0	0	0	0	80,654
3X135 D St-M St Track & Signal	152,852	71	5,339	0	0	0	0	0	158,262
3X206 Mukilteo Station, S Platform	14,694	1,620	1,999	0	0	0	0	0	18,313
3X236 Tukwila Station	37,034	366	734	7,835	0	0	0	0	45,969
<b>Subtotal</b>	<b>415,145</b>	<b>72,414</b>	<b>73,088</b>	<b>7,835</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>568,482</b>
<b>Operating</b>									
7X755 Sounder ST2 Fleet Expansion	46,286	3,244	0	0	0	0	0	0	49,530
<b>Subtotal</b>	<b>46,286</b>	<b>3,244</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>49,530</b>
<b>Total</b>	<b>\$665,802</b>	<b>\$97,778</b>	<b>\$78,748</b>	<b>\$13,394</b>	<b>\$1,679</b>	<b>\$1,664</b>	<b>\$0</b>	<b>\$0</b>	<b>\$859,065</b>

**2017 TIP Cashflow by Subarea**  
(in thousands)

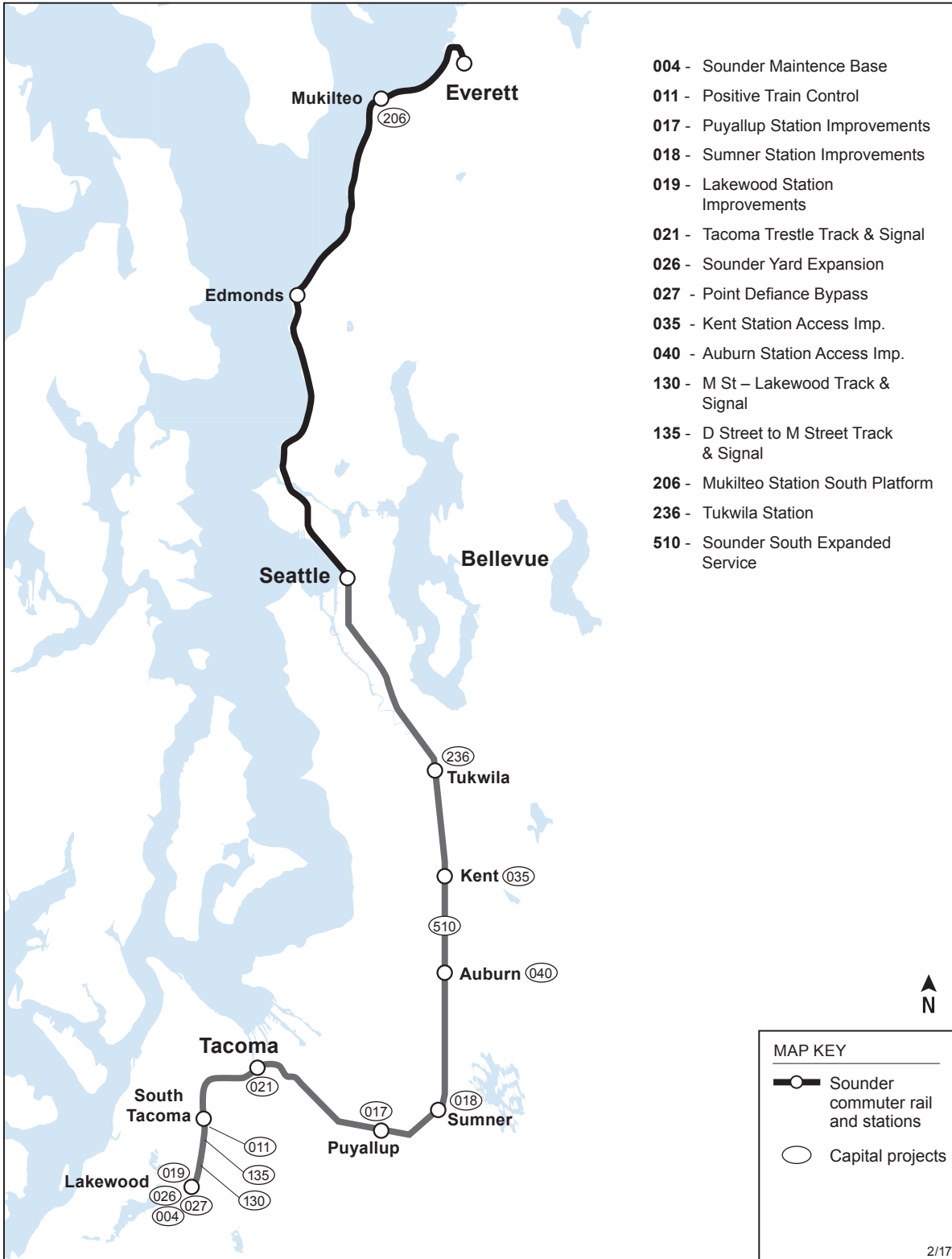
System Expansion  
**SOUNDER**

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
1 - Snohomish	15,029	2,492	2,115	23	0	0	0	0	19,658
3 - South King	44,007	3,879	2,720	7,835	0	0	0	0	58,440
5 - Pierce	606,766	91,407	73,913	5,537	1,679	1,664	0	0	780,966
<b>Total</b>	<b>\$665,802</b>	<b>\$97,778</b>	<b>\$78,748</b>	<b>\$13,394</b>	<b>\$1,679</b>	<b>\$1,664</b>	<b>\$0</b>	<b>\$0</b>	<b>\$859,065</b>

**2017 TIP Cashflow by Phase**  
(in thousands)

Phase # and Description	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
02-Operation+Maintenance-Agency	42	0	0	0	0	0	0	0	42
10-Agency Administration	24,439	5,632	4,881	859	0	0	0	0	35,811
20-Prelim Engineering/Env Review	14,954	5,794	2,408	0	0	0	0	0	23,156
30-Final Design+Specifications	36,907	2,062	5,363	635	0	0	0	0	44,966
35-Third Party	1,329	2,041	1,335	2,957	1,664	1,664	0	0	10,989
40-Row Acquisition+Permits	260,700	10,443	7,467	2,029	0	0	0	0	280,639
50-Construction	246,356	63,701	48,793	6,378	16	0	0	0	365,244
55-Construction Services	15,842	4,861	8,501	536	0	0	0	0	29,740
70-Vehicles	64,188	3,244	0	0	0	0	0	0	67,432
80-System Testing+Startup	1,046	0	0	0	0	0	0	0	1,046
<b>Total</b>	<b>\$665,802</b>	<b>\$97,778</b>	<b>\$78,748</b>	<b>\$13,394</b>	<b>\$1,679</b>	<b>\$1,664</b>	<b>\$0</b>	<b>\$0</b>	<b>\$859,065</b>

# SOUNDER COMMUTER RAIL CAPITAL PROJECTS



**300004**

**Sounder Maintenance Base**

**Managed by: PEPD**

Scope: Sound Transit is evaluating operations and maintenance cost efficiencies associated with the development of commuter rail operations and maintenance facilities to support existing and future service levels. Funding has been approved for completing site selection, preliminary engineering (30% design), and environmental determination. Detailed project oversight requires a step by step involvement of the Board before moving from one project phase to another.

Changes to authorized project allocation since 2016: \$2 million was added to ROW phase per resolution R2016-37.

Authorized Project Allocation to Date (in \$000s of \$ YOE dollars)		Total Financial Plan Project Estimate (in \$000s of \$ 2016)	
Phase Gate Passed:	3-Identify Preferred Alternative	2008 Cost Estimate:	\$186,150
Baseline:	\$0	2016 Cost Estimate:	\$162,518
2016 TIP:	\$6,841	2017 Cost Estimate:	\$162,518
2017 TIP:	\$8,968		

**Cashflow (in thousands)**

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
Snohomish	335	872	115	23	0	0	0	0	1,345
Pierce	1,900	4,942	654	128	0	0	0	0	7,623
Total	2,235	5,814	769	150	0	0	0	0	8,968

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	531	184	144	0	0	0	0	0	860
20-Prelim Engineering/Env Review	1,634	3,066	416	0	0	0	0	0	5,116
40-Row Acquisition+Permits	70	2,563	209	150	0	0	0	0	2,992
Total	2,235	5,814	769	150	0	0	0	0	8,968

Budget Risk Assessment		Schedule Risk Assessment	
Estimate Type:	PE/ED	Schedule Risk Level:	High
Budget Risk Level:	Medium	2016 Budget Schedule:	2016
		2017 Budget Schedule:	2023

Project Risk Assessment
Site location and project scope uncertainties since ST3 ridership forecast and fleet size analysis yet to be conducted may impact project site selection. Further design and environmental analysis may be required.

**300019**

**Lakewood Station Improvements**

**Managed by: DECM**

Scope: Construction of a pedestrian bridge in the city of Lakewood connecting the community to the northwest of Lakewood Station with the station. This work is partly funded by a capped contribution from Sound Transit. Additional access improvements contemplated in ST2 and reflected in the ST2 cost estimate were evaluated through the Station Access and Demand Study project and may be proposed in the future.

Changes to authorized project allocation since 2016: None.

Authorized Project Allocation to Date (in \$000s of \$ YOE dollars)		Total Financial Plan Project Estimate (in \$000s of \$ 2016)	
Phase Gate Passed:	Pending	2008 Cost Estimate:	\$46,948
Baseline:	\$0	2016 Cost Estimate:	\$39,953
2016 TIP:	\$404	2017 Cost Estimate:	\$39,953
2017 TIP:	\$404		

**Cashflow (in thousands)**

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
Pierce	278	0	126	0	0	0	0	0	404
Total	278	0	126	0	0	0	0	0	404

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	26	0	14	0	0	0	0	0	40
35-Third Party	252	0	112	0	0	0	0	0	363
Total	278	0	126	0	0	0	0	0	404

Budget Risk Assessment		Schedule Risk Assessment	
Estimate Type:	Fixed Contribution	Schedule Risk Level:	Low
Budget Risk Level:	Low	2016 Budget Schedule:	2016
		2017 Budget Schedule:	2016

Project Risk Assessment
N/A – This is a capped contribution project.

**300035**

**Kent Station Access Improvements**

**Managed by: PEPD**

Scope: Evaluate, design and construct capital improvements to facilitate access to Kent Station for pedestrians, bicyclists, and drivers. Improvements include additional parking facilities, pedestrian access improvements, bicycle route improvements and bicycle storage.

Project was established in 2016 per Resolution No. R2016-09 in the amount of \$831 thousand.

Changes to authorized project allocation since 2016: None.

Authorized Project Allocation to Date (in \$000s of \$ YOE dollars)		Total Financial Plan Project Estimate (in \$000s of \$ 2016)	
Phase Gate Passed:	1-Enter Project Development	2008 Cost Estimate:	\$33,115
Baseline:	\$0	2016 Cost Estimate:	N/A
2016 TIP:	\$831	2017 Cost Estimate:	\$33,115
2017 TIP:	\$831		

**Cashflow (in thousands)**

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
South King	71	506	254	0	0	0	0	0	831
Total	71	506	254	0	0	0	0	0	831

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	27	107	73	0	0	0	0	0	207
20-Prelim Engineering/Env Review	44	365	165	0	0	0	0	0	574
40-Row Acquisition+Permits	0	34	16	0	0	0	0	0	50
Total	71	506	254	0	0	0	0	0	831

Budget Risk Assessment	
Estimate Type:	PE/ED
Budget Risk Level:	Low

Schedule Risk Assessment	
Schedule Risk Level:	Low
2016 Budget Schedule:	2018
2017 Budget Schedule:	2018

Project Risk Assessment
Achieving local jurisdiction consensus on scope may impact project budget and schedule..



**300040**

**Auburn Station Access Improvement**

**Managed by: PEPD**

Scope: Evaluate, design and construct capital improvements to facilitate access to Auburn Station for pedestrians, bicyclists, and drivers. Improvements include additional parking facilities, pedestrian access improvements, bicycle route improvements and bicycle storage.

Project was established in 2016 per Resolution No. R2016-08 with the amount of \$831 thousand.

Changes to authorized project allocation since 2016: None.

Authorized Project Allocation to Date (in \$000s of \$ YOE dollars)		Total Financial Plan Project Estimate (in \$000s of \$ 2016)	
Phase Gate Passed:	1-Enter Project Development	2008 Cost Estimate:	\$34,812
Baseline:	\$0	2016 Cost Estimate:	N/A
2016 TIP:	\$831	2017 Cost Estimate:	\$34,812
2017 TIP:	\$831		

**Cashflow (in thousands)**

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
South King	64	506	261	0	0	0	0	0	831
Total	64	506	261	0	0	0	0	0	831

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	20	107	80	0	0	0	0	0	207
20-Prelim Engineering/Env Review	44	365	165	0	0	0	0	0	574
40-Row Acquisition+Permits	0	34	16	0	0	0	0	0	50
Total	64	506	261	0	0	0	0	0	831

Budget Risk Assessment	
Estimate Type:	PE/ED
Budget Risk Level:	Low

Schedule Risk Assessment	
Schedule Risk Level:	Low
2016 Budget Schedule:	2018
2017 Budget Schedule:	2018

Project Risk Assessment
Achieving local jurisdiction consensus on scope may impact project budget and schedule.

**300017**

**Puyallup Station Improvements**

**Managed by: DECM**

Scope: The Puyallup Station Access Improvement Project is evaluating potential capital improvements to facilitate access to Puyallup Station for pedestrians, bicyclists, and drivers. Improvements include additional parking facilities, pedestrian access improvements, bicycle route improvements, and secure bicycle storage.

Changes to authorized project allocation since 2016: Project budget was increased by \$2.6M per resolution R2016-26 in Dec 2016.

Authorized Project Allocation to Date (in \$000s of \$ YOE dollars)		Total Financial Plan Project Estimate (in \$000s of \$ 2016)	
Phase Gate Passed:	4-Enter Final Design	2008 Cost Estimate:	\$73,587
Baseline:	\$0	2016 Cost Estimate:	\$62,254
2016 TIP:	\$11,009	2017 Cost Estimate:	\$62,254
2017 TIP:	\$11,009		

**Cashflow (in thousands)**

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
Pierce	2,325	6,014	2,671	0	0	0	0	0	11,009
Total	2,325	6,014	2,671	0	0	0	0	0	11,009

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	566	524	133	0	0	0	0	0	1,223
20-Prelim Engineering/Env Review	1,568	820	608	0	0	0	0	0	2,996
35-Third Party	0	50	55	0	0	0	0	0	105
40-Row Acquisition+Permits	191	4,557	1,807	0	0	0	0	0	6,555
55-Construction Services	0	63	68	0	0	0	0	0	130
Total	2,325	6,014	2,671	0	0	0	0	0	11,009

Budget Risk Assessment		Schedule Risk Assessment	
Estimate Type:	PE/ED	Schedule Risk Level:	Medium
Budget Risk Level:	Medium	2016 Budget Schedule:	2016
		2017 Budget Schedule:	2018

Project Risk Assessment
Uncertainties in right-of-way acquisition, third party and jurisdictional requirements present budget and schedule risks.

**300018**

**Sumner Station Improvements**

**Managed by: DECM**

Scope: Evaluate, design and construct capital improvements to facilitate access to Sumner Station for pedestrians, bicyclists, and drivers. Improvements include additional parking facilities, pedestrian access improvements, bicycle route improvements, and secure bicycle storage.

Changes to authorized project allocation since 2016: Project budget was increased by \$9 million per resolution R2017-01.

Authorized Project Allocation to Date (in \$000s of \$ YOE dollars)		Total Financial Plan Project Estimate (in \$000s of \$ 2016)	
Phase Gate Passed:	4-Enter Final Design	2008 Cost Estimate:	\$52,034
Baseline:	\$0	2016 Cost Estimate:	\$47,449
2016 TIP:	\$6,472	2017 Cost Estimate:	\$47,449
2017 TIP:	\$17,042		

**Cashflow (in thousands)**

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
Pierce	4,958	4,481	1,458	2,802	1,679	1,664	0	0	17,042
Total	4,958	4,481	1,458	2,802	1,679	1,664	0	0	17,042

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	565	761	107	0	0	0	0	0	1,433
20-Prelim Engineering/Env Review	1,586	1,168	242	0	0	0	0	0	2,996
35-Third Party	0	760	770	2,802	1,664	1,664	0	0	7,658
40-Row Acquisition+Permits	2,710	1,697	7	0	0	0	0	0	4,414
50-Construction	97	0	0	0	16	0	0	0	113
55-Construction Services	0	95	333	0	0	0	0	0	428
Total	4,958	4,481	1,458	2,802	1,679	1,664	0	0	17,042

Budget Risk Assessment		Schedule Risk Assessment	
Estimate Type:	PE/ED	Schedule Risk Level:	Medium
Budget Risk Level:	Medium	2016 Budget Schedule:	2016
		2017 Budget Schedule:	2020

Project Risk Assessment
Uncertainties in ROW acquisition, third party and jurisdictional requirements present budget and schedule risks.

**3X510** **Sounder South Expanded Service** **Managed by: DECM**

Scope: Purchase of four additional commuter rail easements between Seattle and Lakewood from Burlington Northern Santa Fe (BNSF) Railroad. BNSF is responsible for track and signal improvements; Sound Transit maintains responsibility for environmental permitting and mitigation. The fourth easement payment was made in 2015.

Sound Transit is working with BNSF and federal and local environmental regulatory agencies on environmental impacts and mitigation. A fish passage culvert will be designed by ST and construction will be performed by King County. Construction to be complete by April 2018.

Changes to authorized project allocation since 2016: None.

Authorized Project Allocation to Date (in \$000s of \$ YOE dollars)		Total Financial Plan Project Estimate (in \$000s of \$ 2016)	
Phase Gate Passed:	4-Enter Final Design	2008 Cost Estimate:	\$225,229
Baseline:	\$0	2016 Cost Estimate:	\$285,103
2016 TIP:	\$201,968	2017 Cost Estimate:	\$285,103
2017 TIP:	\$201,968		

**Cashflow (in thousands)**

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
Pierce	194,440	4,800	120	2,608	0	0	0	0	201,968
Total	194,440	4,800	120	2,608	0	0	0	0	201,968

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	1,167	300	50	183	0	0	0	0	1,700
20-Prelim Engineering/Env Review	479	0	0	0	0	0	0	0	479
30-Final Design+Specifications	167	370	20	343	0	0	0	0	900
35-Third Party	4	40	0	156	0	0	0	0	200
40-Row Acquisition+Permits	185,192	40	0	1,253	0	0	0	0	186,485
50-Construction	7,431	4,000	50	573	0	0	0	0	12,054
55-Construction Services	0	50	0	100	0	0	0	0	150
Total	194,440	4,800	120	2,608	0	0	0	0	201,968

Budget Risk Assessment		Schedule Risk Assessment	
Estimate Type:	Final Design	Schedule Risk Level:	Low
Budget Risk Level:	Low	2016 Budget Schedule:	2018
		2017 Budget Schedule:	2018

Project Risk Assessment
Third-party's requirements to design and construct an environmental mitigation fish passage culvert project in King County.

**300021**

**Tacoma Trestle Track & Signal**

**Managed by: DECM**

Scope: Design and construct additional track, bridge and platforms along an approximately 0.65 mile section of track between the existing Tacoma Dome Station and the vicinity of M Street in Tacoma.

Project baseline was established in 2015 per Resolution No. R2015-09. Project was re-baselined in 2016 per Resolution No. R2016-20 to add WSDOT funded scope and consequent budget. The added scope and complexity of construction support the variance between the baseline and the ST2 Cost Estimate.

Changes to authorized project allocation since 2016: None.

Authorized Project Allocation to Date (in \$000s of \$ YOE dollars)		Total Financial Plan Project Estimate (in \$000s of \$ 2016)	
Phase Gate Passed:	6-Proceed to Construction	2008 Cost Estimate:	\$80,436
Baseline:	\$161,065	2016 Cost Estimate:	\$68,017
2016 TIP:	\$161,065	2017 Cost Estimate:	\$68,017
2017 TIP:	\$161,065		

**Cashflow (in thousands)**

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
Pierce	55,359	58,630	47,076	0	0	0	0	0	161,065
Total	55,359	58,630	47,076	0	0	0	0	0	161,065

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	2,920	2,524	2,650	0	0	0	0	0	8,094
20-Prelim Engineering/Env Review	4,062	0	0	0	0	0	0	0	4,062
30-Final Design+Specifications	9,518	1,640	4,040	0	0	0	0	0	15,198
35-Third Party	434	1,190	158	0	0	0	0	0	1,781
40-Row Acquisition+Permits	6,517	33	3,511	0	0	0	0	0	10,061
50-Construction	30,235	50,693	33,359	0	0	0	0	0	114,288
55-Construction Services	1,674	2,550	3,357	0	0	0	0	0	7,581
Total	55,359	58,630	47,076	0	0	0	0	0	161,065

Budget Risk Assessment		Schedule Risk Assessment	
Estimate Type:	Construction	Schedule Risk Level:	High
Budget Risk Level:	High	2016 Budget Schedule:	2018
		2017 Budget Schedule:	2018

**Project Risk Assessment**

Several challenges in construction to complete WSDOT's South platform and track and signal improvements between East 'C' and East 'D' Streets by the Spring of 2017 are recognized and may result in potential loss of ARRA grant revenues if the stipulated completion date is not met

**300026****Sounder Yard Expansion****Managed by: DECM**

Scope: Increase track capacity at the layover facility in Lakewood to store up to seven train sets. The project will also complete drainage improvements and increase electrical power to accommodate additional wayside power and yard lighting. The increase in capacity is needed for the additional ST2 Sounder South service that begins in 2016 before the Sounder Yard & Shops Facility project is complete.

Changes to authorized project allocation since 2016: None.

Authorized Project Allocation to Date (in \$000s of \$ YOE dollars)		Total Financial Plan Project Estimate (in \$000s of \$ 2016)	
Phase Gate Passed:	6-Proceed to Construction	2008 Cost Estimate:	N/A
Baseline:	\$20,550	2016 Cost Estimate:	\$22,302
2016 TIP:	\$20,550	2017 Cost Estimate:	\$22,302
2017 TIP:	\$20,550		

**Cashflow (in thousands)**

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
South King	6,838	2,501	1,470	0	0	0	0	0	10,809
Pierce	6,162	2,254	1,325	0	0	0	0	0	9,741
Total	12,999	4,755	2,795	0	0	0	0	0	20,550

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	883	204	113	0	0	0	0	0	1,200
20-Prelim Engineering/Env Review	1,208	10	811	0	0	0	0	0	2,029
40-Row Acquisition+Permits	185	10	205	0	0	0	0	0	400
50-Construction	10,100	4,058	1,363	0	0	0	0	0	15,521
55-Construction Services	623	473	304	0	0	0	0	0	1,400
Total	12,999	4,755	2,795	0	0	0	0	0	20,550

Budget Risk Assessment		Schedule Risk Assessment	
Estimate Type:	Construction	Schedule Risk Level:	Low
Budget Risk Level:	Low	2016 Budget Schedule:	2017
		2017 Budget Schedule:	2017

**Project Risk Assessment**

There is a low risk of completion of the modular T&E building prior to the expiration of the lease for the current building in July 2017.

**300027****Point Defiance Bypass****Managed by: DECM**

Scope: Sound Transit will administer the construction of the Point Defiance Bypass Project which will construct a new second track adjacent to Sound Transit's existing main line between South Tacoma (South 66th Street Bridge) and Lakewood (Bridgeport Way) and install new rails, ties, and ballast on Sound Transit's existing track between Lakewood and Nisqually. Improvements will be made at the connection to BNSF's main line near Nisqually and safety improvements will be made at some existing at-grade crossings within the project corridor.

The project started in 2014 with \$6.4 million lifetime budget which is used for the procurement of a construction services contract, right-of-way acquisition, and associated staff costs to administer the same in support of the construction of a second track between South Tacoma and Lakewood. These costs are reimbursable through the Federal High Speed Rail grant administered by the Washington State Department of Transportation (WSDOT).

Project was re-baselined in 2016 per Resolution No. R2016-19 by \$44.3 million.

Changes to authorized project allocation since 2016: None.

Authorized Project Allocation to Date (in \$000s of \$ YOE dollars)		Total Financial Plan Project Estimate (in \$000s of \$ 2016)	
Phase Gate Passed:	6-Proceed to Construction	2008 Cost Estimate:	N/A
Baseline:	\$83,670	2016 Cost Estimate:	N/A
2016 TIP:	\$83,670	2017 Cost Estimate:	N/A
2017 TIP:	\$83,670		

**Cashflow (in thousands)**

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
Pierce	61,752	6,972	14,946	0	0	0	0	0	83,670
Total	61,752	6,972	14,946	0	0	0	0	0	83,670

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
02-Operation+Maintenance-Agency	42	0	0	0	0	0	0	0	42
10-Agency Administration	1,992	810	357	0	0	0	0	0	3,159
30-Final Design+Specifications	103	42	55	0	0	0	0	0	200
40-Row Acquisition+Permits	51	170	179	0	0	0	0	0	400
50-Construction	54,531	4,350	10,742	0	0	0	0	0	69,623
55-Construction Services	5,034	1,600	3,612	0	0	0	0	0	10,246
Total	61,752	6,972	14,946	0	0	0	0	0	83,670

Budget Risk Assessment		Schedule Risk Assessment	
Estimate Type:	Construction	Schedule Risk Level:	High
Budget Risk Level:	Medium	2016 Budget Schedule:	2017
		2017 Budget Schedule:	2017

**Project Risk Assessment**

Several challenges in construction to complete the project by the Spring of 2017 are recognized and may result in potential loss of ARRA grant revenues if the stipulated completion date is not met.

**3X130**

**M St-Lakewood Track & Signal**

**Managed by: DECM**

Scope: Reconstruction of approximately seven miles of rail track between M Street in Tacoma and Lakewood was completed in 2010. Remaining project elements include restoration of the South 66th Street Bridge and installation of the Centralized Train Control system. Commuter rail service began in 2012 following the completion of the D Street to M Street Track and Signal project (Project 3x135). Project completed in 2016.

Changes to authorized project allocation since 2016: None.

Authorized Project Allocation to Date (in \$000s of \$ YOE dollars)		Total Financial Plan Project Estimate (in \$000s of \$ 2016)	
Phase Gate Passed:	7-Transition to Operations	2008 Cost Estimate:	N/A
Baseline:	\$78,630	2016 Cost Estimate:	N/A
2016 TIP:	\$80,654	2017 Cost Estimate:	N/A
2017 TIP:	\$80,654		

**Cashflow (in thousands)**

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
Pierce	80,455	0	199	0	0	0	0	0	80,654
Total	80,455	0	199	0	0	0	0	0	80,654

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	3,652	0	113	0	0	0	0	0	3,765
20-Prelim Engineering/Env Review	1,496	0	0	0	0	0	0	0	1,496
30-Final Design+Specifications	2,982	0	3	0	0	0	0	0	2,985
40-Row Acquisition+Permits	12,793	0	22	0	0	0	0	0	12,815
50-Construction	50,579	0	60	0	0	0	0	0	50,639
70-Vehicles	8,953	0	0	0	0	0	0	0	8,953
Total	80,455	0	199	0	0	0	0	0	80,654

Budget Risk Assessment		Schedule Risk Assessment	
Estimate Type:	Construction	Schedule Risk Level:	Low
Budget Risk Level:	Low	2016 Budget Schedule:	2016
		2017 Budget Schedule:	2016

Project Risk Assessment
N/A



**3X135**

**D St-M St Track & Signal**

**Managed by: DECM**

Scope: Design and construct a 1.4 mile rail connection between Tacoma Dome Station and Sound Transit owned right-of-way at the Lakewood Subdivision Line. Construction included; rail work, an overpass at Pacific Avenue, roadway improvements, utility relocations and centralized traffic control for the rail line. The project completed construction and began Sounder service between Lakewood and Tacoma in October 2012. Follow-on work identified is complete. Legal issues need resolution prior to project completion anticipated by the end of 2018.

Funds cash flowed in 2018 are considered surplus.

Changes to authorized project allocation since 2016: None.

Authorized Project Allocation to Date (in \$000s of \$ YOE dollars)		Total Financial Plan Project Estimate (in \$000s of \$ 2016)	
Phase Gate Passed:	7-Transition to Operations	2008 Cost Estimate:	N/A
Baseline:	\$161,581	2016 Cost Estimate:	N/A
2016 TIP:	\$158,262	2017 Cost Estimate:	N/A
2017 TIP:	\$158,262		

**Cashflow (in thousands)**

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
Pierce	152,852	71	5,339	0	0	0	0	0	158,262
Total	152,852	71	5,339	0	0	0	0	0	158,262

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	8,917	70	620	0	0	0	0	0	9,606
20-Prelim Engineering/Env Review	1,733	0	0	0	0	0	0	0	1,733
30-Final Design+Specifications	17,308	0	804	0	0	0	0	0	18,112
35-Third Party	605	1	240	0	0	0	0	0	846
40-Row Acquisition+Permits	42,137	0	1,492	0	0	0	0	0	43,629
50-Construction	66,980	0	1,583	0	0	0	0	0	68,563
55-Construction Services	5,173	0	600	0	0	0	0	0	5,773
70-Vehicles	8,953	0	0	0	0	0	0	0	8,953
80-System Testing+Startup	1,046	0	0	0	0	0	0	0	1,046
Total	152,852	71	5,339	0	0	0	0	0	158,262

Budget Risk Assessment		Schedule Risk Assessment	
Estimate Type:	Construction	Schedule Risk Level:	Low
Budget Risk Level:	Low	2016 Budget Schedule:	2016
		2017 Budget Schedule:	2016

Project Risk Assessment
Closeout activities and transfer of improvements to local jurisdictions may result in additional work being required.

**3X206**

**Mukilteo Station, S Platform**

**Managed by: DECM**

Scope: The Mukilteo Station South Platform project includes the second platform, stair, and elevator towers for both platforms and the pedestrian bridge connecting them.

Changes to authorized project allocation since 2016: None.

Authorized Project Allocation to Date (in \$000s of \$ YOE dollars)		Total Financial Plan Project Estimate (in \$000s of \$ 2016)	
Phase Gate Passed:	6-Proceed to Construction	2008 Cost Estimate:	N/A
Baseline:	\$18,313	2016 Cost Estimate:	N/A
2016 TIP:	\$18,313	2017 Cost Estimate:	N/A
2017 TIP:	\$18,313		

**Cashflow (in thousands)**

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
Snohomish	14,694	1,620	1,999	0	0	0	0	0	18,313
Total	14,694	1,620	1,999	0	0	0	0	0	18,313

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	1,373	20	147	0	0	0	0	0	1,540
30-Final Design+Specifications	2,240	0	407	0	0	0	0	0	2,647
35-Third Party	34	0	1	0	0	0	0	0	35
40-Row Acquisition+Permits	478	1,300	0	0	0	0	0	0	1,778
50-Construction	8,845	300	1,219	0	0	0	0	0	10,363
55-Construction Services	1,724	0	226	0	0	0	0	0	1,950
Total	14,694	1,620	1,999	0	0	0	0	0	18,313

Budget Risk Assessment		Schedule Risk Assessment	
Estimate Type:	Construction	Schedule Risk Level:	Medium
Budget Risk Level:	Low	2016 Budget Schedule:	2016
		2017 Budget Schedule:	2016

Project Risk Assessment
The project is complete and in operation.

**3X236**

**Tukwila Station**

**Managed by: DECM**

Scope: Construction of a new permanent commuter rail station to replace the existing temporary Tukwila Sounder Station on Sound Transit owned property at Longacres Way in Tukwila. The project includes two 600-foot-long platforms with shelters, ADA compliant ramps, stairs, ticket vending machines, improvements to the underpass connecting the two platforms, a bus transit area with shelters, 390 car parking stalls, 68 bicycle parking spaces, and underground water quality and stormwater detention facilities. Project is expected to continue well into 2016 to complete follow-on work including potential platform crack repairs, removal of soil stockpile, and possible lighting enhancements.

Funds cash flowed in 2019 are considered surplus.

Changes to authorized project allocation since 2016: None.

Authorized Project Allocation to Date (in \$000s of \$ YOE dollars)		Total Financial Plan Project Estimate (in \$000s of \$ 2016)	
Phase Gate Passed:	6-Proceed to Construction	2008 Cost Estimate:	\$43,236
Baseline:	\$45,969	2016 Cost Estimate:	\$52,128
2016 TIP:	\$45,969	2017 Cost Estimate:	\$52,128
2017 TIP:	\$45,969		

**Cashflow (in thousands)**

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
South King	37,034	366	734	7,835	0	0	0	0	45,969
Total	37,034	366	734	7,835	0	0	0	0	45,969

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	1,796	21	279	676	0	0	0	0	2,773
20-Prelim Engineering/Env Review	1,101	0	0	0	0	0	0	0	1,101
30-Final Design+Specifications	4,589	10	34	292	0	0	0	0	4,924
40-Row Acquisition+Permits	10,376	5	2	626	0	0	0	0	11,009
50-Construction	17,558	300	418	5,805	0	0	0	0	24,081
55-Construction Services	1,614	30	1	436	0	0	0	0	2,081
Total	37,034	366	734	7,835	0	0	0	0	45,969

Budget Risk Assessment		Schedule Risk Assessment	
Estimate Type:	Final Design	Schedule Risk Level:	Low
Budget Risk Level:	Low	2016 Budget Schedule:	2016
		2017 Budget Schedule:	2016

**Project Risk Assessment**

The project is complete and in operation.

**7X755**

**Sounder ST2 Fleet Expansion**

**Managed by: Operations**

Scope: Fleet expansion to add train sets to support additional trips between Seattle and Lakewood. The number of coaches and cab cars that will be procured will be refined based on ridership trends and forecasts. In 2012, three locomotives were ordered and received from Motive Power, Inc. Nine cabs were ordered in 2013 from Bombardier and will be received in 2015 through 2016.

Changes to authorized project allocation since 2016: None.

Authorized Project Allocation to Date (in \$000s of \$ YOE dollars)		Total Financial Plan Project Estimate (in \$000s of \$ 2016)	
Phase Gate Passed:	N/A	2008 Cost Estimate:	\$37,526
Baseline:	\$0	2016 Cost Estimate:	\$30,993
2016 TIP:	\$49,530	2017 Cost Estimate:	\$30,993
2017 TIP:	\$49,530		

**Cashflow (in thousands)**

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
Pierce	46,286	3,244	0	0	0	0	0	0	49,530
Total	46,286	3,244	0	0	0	0	0	0	49,530

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	4	0	0	0	0	0	0	0	4
70-Vehicles	46,282	3,244	0	0	0	0	0	0	49,526
Total	46,286	3,244	0	0	0	0	0	0	49,530

Budget Risk Assessment		Schedule Risk Assessment	
Estimate Type:	Scoping	Schedule Risk Level:	Medium
Budget Risk Level:	Medium	2016 Budget Schedule:	2016
		2017 Budget Schedule:	2017

**Project Risk Assessment**

Time between the contract for purchase and delivery can be affected by manufacturing delays or unforeseen challenges.

## 2017 TIP Cashflow by Budget Approval

(in thousands)

### System Expansion

#### REGIONAL EXPRESS

Project Number and Name	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
<b>Preliminary Engineering</b>									
500005 ST Express Bus Base	1,154	587	4,067	0	0	0	0	0	5,808
<b>Subtotal</b>	1,154	587	4,067	0	0	0	0	0	5,808
<b>Final Design &amp; ROW</b>									
500030 Bothell Transit Related Improvements	4	5,036	0	0	0	0	0	0	5,040
<b>Subtotal</b>	4	5,036	0	0	0	0	0	0	5,040
<b>Baseline</b>									
500020 ST Express Mid-Day Bus Storage	2,308	0	820	0	0	0	0	0	3,128
5X142 Kirkland Transit Center/3rd	10,827	0	132	0	0	0	0	0	10,959
5X387 I-90 Two-Way Transit & HOV Operations, Stage 3	152,902	39,221	732	0	32,793	0	0	0	225,648
<b>Subtotal</b>	166,037	39,221	1,684	0	32,793	0	0	0	239,736
<b>Operating</b>									
700720 ST Express Fleet Expansion	8,350	13,649	17,758	0	0	0	0	0	39,757
<b>Subtotal</b>	8,350	13,649	17,758	0	0	0	0	0	39,757
<b>Total</b>	\$175,546	\$58,492	\$23,510	\$0	\$32,793	\$0	\$0	\$0	\$290,341

**2017 TIP Cashflow by Subarea**  
(in thousands)

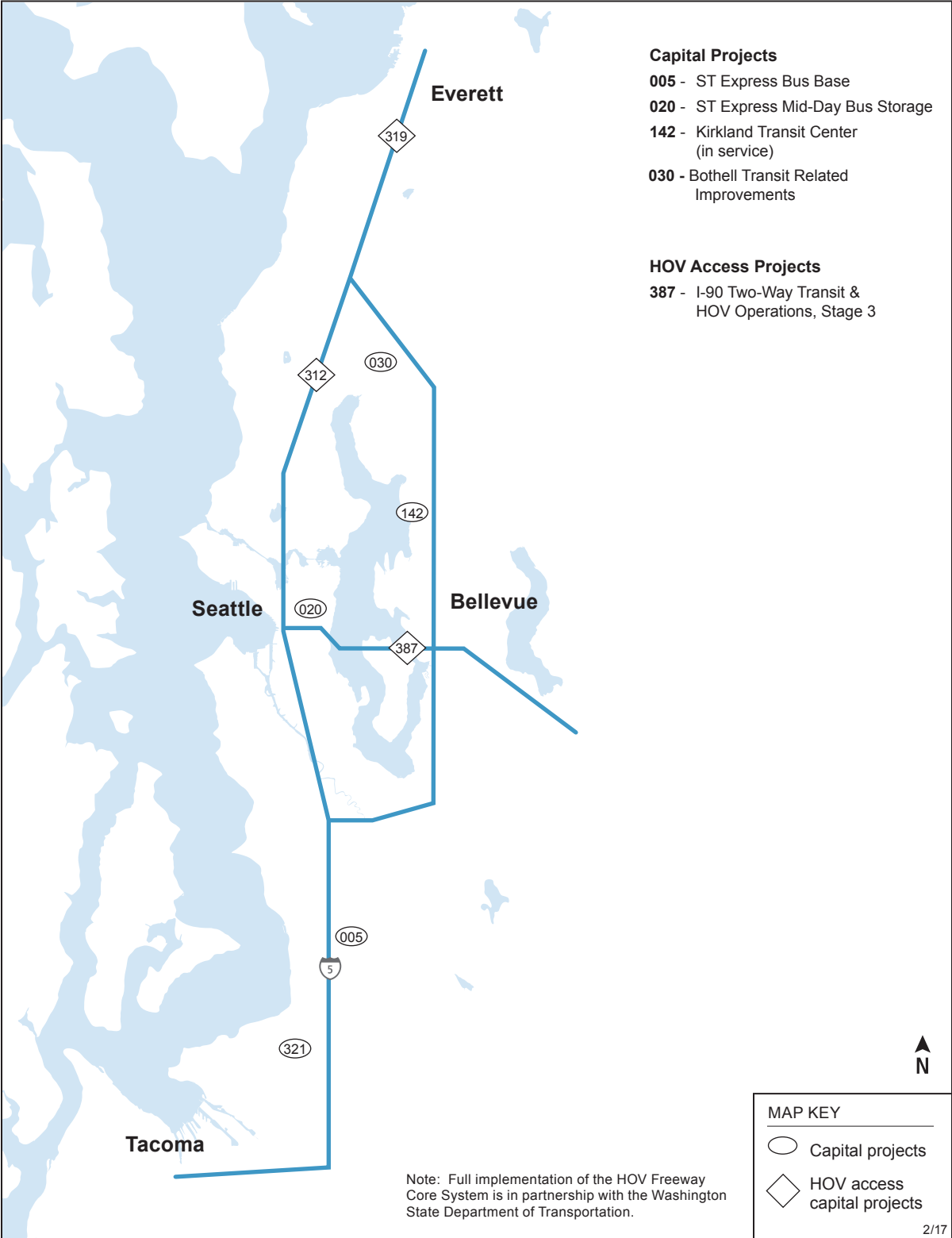
System Expansion  
REGIONAL EXPRESS

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
1 - Snohomish	1,250	1,811	2,948	0	0	0	0	0	6,009
3 - South King	1,044	1,556	2,407	0	0	0	0	0	5,007
4 - East King	170,316	54,411	15,612	0	32,793	0	0	0	273,133
5 - Pierce	2,936	714	2,542	0	0	0	0	0	6,192
<b>Total</b>	<b>\$175,546</b>	<b>\$58,492</b>	<b>\$23,510</b>	<b>\$0</b>	<b>\$32,793</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$290,341</b>

**2017 TIP Cashflow by Phase**  
(in thousands)

Phase # and Description	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	3,136	389	783	0	1,530	0	0	0	5,838
20-Prelim Engineering/Env Review	3,730	505	3,460	0	0	0	0	0	7,695
30-Final Design+Specifications	19,893	40	36	0	4,181	0	0	0	24,150
35-Third Party	0	5,000	0	0	0	0	0	0	5,000
40-Row Acquisition+Permits	191	10	197	0	0	0	0	0	398
50-Construction	140,007	38,900	1,143	0	27,082	0	0	0	207,133
55-Construction Services	238	0	32	0	0	0	0	0	270
70-Vehicles	8,350	13,649	17,758	0	0	0	0	0	39,757
90-Contingency	0	0	100	0	0	0	0	0	100
<b>Total</b>	<b>\$175,546</b>	<b>\$58,492</b>	<b>\$23,510</b>	<b>\$0</b>	<b>\$32,793</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$290,341</b>

REGIONAL EXPRESS CAPITAL PROJECTS



500005

ST Express Bus Base

Managed by: PEPD

Scope: Sound Transit is evaluating constructing an ST Express Bus Base for operating and maintaining the ST Express bus fleet. The Board has approved initial project development activities including confirmation of fleet operating assumptions, development of facilities and site programming evaluations and review of alternative project delivery methods.

Changes to authorized project allocation since 2016: None.

Authorized Project Allocation to Date (in \$000s of \$ YOE dollars)		Total Financial Plan Project Estimate (in \$000s of \$ 2016)	
Phase Gate Passed:	1-Enter Project Development	2008 Cost Estimate:	\$210,557
Baseline:	\$0	2016 Cost Estimate:	\$203,637
2016 TIP:	\$5,808	2017 Cost Estimate:	\$203,637
2017 TIP:	\$5,808		

Cashflow (in thousands)

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
Snohomish	207	105	728	0	0	0	0	0	1,040
South King	134	68	472	0	0	0	0	0	674
East King	537	273	1,891	0	0	0	0	0	2,701
Pierce	277	141	976	0	0	0	0	0	1,394
Total	1,154	587	4,067	0	0	0	0	0	5,808

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	353	72	419	0	0	0	0	0	844
20-Prelim Engineering/Env Review	798	505	3,460	0	0	0	0	0	4,763
40-Row Acquisition+Permits	3	10	188	0	0	0	0	0	201
Total	1,154	587	4,067	0	0	0	0	0	5,808

Budget Risk Assessment		Schedule Risk Assessment	
Estimate Type:	Planning	Schedule Risk Level:	Medium
Budget Risk Level:	Medium	2016 Budget Schedule:	2016
		2017 Budget Schedule:	2019

Project Risk Assessment
Uncertainties exist in siting, design, environmental, third party and jurisdictional requirements that present budget and schedule risks.



500030

Bothell Transit Related Improvements

Managed by: PEPD

Scope: Capital contribution to transit center/park-and-ride project near SR 527/Bothell Way NE and NE 185th Street in the downtown Bothell area. Sound Transit and the city of Bothell would enter into an memorandum of understanding to confirm the responsibilities of each party, the project capital component(s) to receive funding, and the financial participation schedule.

Changes to authorized project allocation since 2016: None.

Authorized Project Allocation to Date (in \$000s of \$ YOE dollars)		Total Financial Plan Project Estimate (in \$000s of \$ 2016)	
Phase Gate Passed:	N/A	2008 Cost Estimate:	\$6,495
Baseline:	\$0	2016 Cost Estimate:	\$6,195
2016 TIP:	\$5,040	2017 Cost Estimate:	\$6,195
2017 TIP:	\$5,040		

Cashflow (in thousands)

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
East King	4	5,036	0	0	0	0	0	0	5,040
Total	4	5,036	0	0	0	0	0	0	5,040

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	4	36	0	0	0	0	0	0	40
35-Third Party	0	5,000	0	0	0	0	0	0	5,000
Total	4	5,036	0	0	0	0	0	0	5,040

Budget Risk Assessment		Schedule Risk Assessment	
Estimate Type:	Fixed Contribution	Schedule Risk Level:	Low
Budget Risk Level:	Low	2016 Budget Schedule:	2018
		2017 Budget Schedule:	2018

Project Risk Assessment
N/A – This is a capped contribution project.

**500020**

**ST Express Mid-Day Bus Storage**

**Managed by: DECM**

Scope: Replace temporary bus storage at the Link Operations Maintenance Facility employee parking area with permanent storage with capacity for 30, forty-five foot buses. The project is complete, any remaining funds are considered surplus.

Changes to authorized project allocation since 2016: None.

Authorized Project Allocation to Date (in \$000s of \$ YOE dollars)		Total Financial Plan Project Estimate (in \$000s of \$ 2016)	
Phase Gate Passed:	7-Transition to Operations	2008 Cost Estimate:	N/A
Baseline:	\$0	2016 Cost Estimate:	\$3,542
2016 TIP:	\$3,128	2017 Cost Estimate:	\$3,542
2017 TIP:	\$3,128		

**Cashflow (in thousands)**

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
Pierce	2,308	0	820	0	0	0	0	0	3,128
Total	2,308	0	820	0	0	0	0	0	3,128

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	226	0	127	0	0	0	0	0	353
20-Prelim Engineering/Env Review	229	0	0	0	0	0	0	0	229
30-Final Design+Specifications	419	0	36	0	0	0	0	0	455
40-Row Acquisition+Permits	1	0	9	0	0	0	0	0	10
50-Construction	1,194	0	617	0	0	0	0	0	1,811
55-Construction Services	238	0	32	0	0	0	0	0	270
Total	2,308	0	820	0	0	0	0	0	3,128

Budget Risk Assessment		Schedule Risk Assessment	
Estimate Type:	Construction	Schedule Risk Level:	Low
Budget Risk Level:	Low	2016 Budget Schedule:	2015
		2017 Budget Schedule:	2015

Project Risk Assessment
The project is complete and will be closed in 2017.

5X142

Kirkland Transit Center/3rd

Managed by: DECM

Scope: Design and construct, and place into service, a new regional transit center in Kirkland on Third Street, south of Central Way to accommodate existing and anticipated bus service by King County Metro and ST Express routes. The project also includes a capped contribution for intersection improvements near the transit center to enhance bus service speed and reliability. This project was completed in 2015 and will be closed in 2016. Any remaining funds are considered surplus.

Changes to authorized project allocation since 2016: None.

Authorized Project Allocation to Date (in \$000s of \$ YOE dollars)		Total Financial Plan Project Estimate (in \$000s of \$ 2016)	
Phase Gate Passed:	7-Transition to Operations	2008 Cost Estimate:	N/A
Baseline:	\$13,300	2016 Cost Estimate:	N/A
2016 TIP:	\$10,959	2017 Cost Estimate:	N/A
2017 TIP:	\$10,959		

Cashflow (in thousands)

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
East King	10,827	0	132	0	0	0	0	0	10,959
Total	10,827	0	132	0	0	0	0	0	10,959

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	947	0	6	0	0	0	0	0	953
20-Prelim Engineering/Env Review	1,154	0	0	0	0	0	0	0	1,154
30-Final Design+Specifications	1,574	0	0	0	0	0	0	0	1,574
40-Row Acquisition+Permits	187	0	0	0	0	0	0	0	187
50-Construction	6,965	0	26	0	0	0	0	0	6,991
90-Contingency	0	0	100	0	0	0	0	0	100
Total	10,827	0	132	0	0	0	0	0	10,959

Budget Risk Assessment		Schedule Risk Assessment	
Estimate Type:	Construction	Schedule Risk Level:	Low
Budget Risk Level:	Low	2016 Budget Schedule:	2015
		2017 Budget Schedule:	2015

Project Risk Assessment
The project is complete and will be closed in 2017.

5X387

I-90 Two-Way Transit & HOV Operations, Stage 3

Managed by: DECM

Scope: Stage 3 of the I-90 Two-way Transit and HOV Operations project will provide reliable two-way transit and HOV operations eastbound and westbound on I-90 between 80th Avenue SE on Mercer Island and Rainier Avenue/I-5 in Seattle. This stage will also include the installation of screening on the shared pathway on the I-90 floating bridge. Upon completion of the Stage 3 project, the center roadway will be closed to allow the construction of East Link to proceed.

Changes to authorized project allocation since 2016: None

Authorized Project Allocation to Date (in \$000s of \$ YOE dollars)		Total Financial Plan Project Estimate (in \$000s of \$ 2016)	
Phase Gate Passed:	6-Proceed to Construction	2008 Cost Estimate:	N/A
Baseline:	\$225,648	2016 Cost Estimate:	N/A
2016 TIP:	\$225,648	2017 Cost Estimate:	N/A
2017 TIP:	\$225,648		

Cashflow (in thousands)

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
East King	152,902	39,221	732	0	32,793	0	0	0	225,648
Total	152,902	39,221	732	0	32,793	0	0	0	225,648

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	1,605	281	232	0	1,530	0	0	0	3,648
20-Prelim Engineering/Env Review	1,549	0	0	0	0	0	0	0	1,549
30-Final Design+Specifications	17,900	40	0	0	4,181	0	0	0	22,121
50-Construction	131,848	38,900	500	0	27,082	0	0	0	198,330
Total	152,902	39,221	732	0	32,793	0	0	0	225,648

Budget Risk Assessment		Schedule Risk Assessment	
Estimate Type:	Construction	Schedule Risk Level:	Medium
Budget Risk Level:	High	2016 Budget Schedule:	2017
		2017 Budget Schedule:	2017

Project Risk Assessment
Construction challenges for the retrofit of tunnel Fire Life Safety systems present cost and schedule risk.

**700720** **ST Express Fleet Expansion** **Managed by: Operations**

Scope: Procure and accept 38 buses to support the increase in peak hour bus service with an additional 32,000 hours of annualized peak hours in 2016 and an additional 15,000 hours of peak service hours to meet service level demands as a result of East Link construction, route congestion, ridership demands and appropriate bus spare ratio in 2017.

Changes to authorized project allocation since 2016: Increased by \$13.6 million for additional 11 buses in support of an additional 15,000 bus service hours.

Authorized Project Allocation to Date (in \$000s of \$ YOE dollars)		Total Financial Plan Project Estimate (in \$000s of \$ 2016)	
Phase Gate Passed:	None	2008 Cost Estimate:	\$41,790
Baseline:	\$0	2016 Cost Estimate:	\$46,045
2016 TIP:	\$26,185	2017 Cost Estimate:	\$59,016
2017 TIP:	\$39,757		

**Cashflow (in thousands)**

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
Snohomish	1,044	1,706	2,220	0	0	0	0	0	4,970
South King	910	1,488	1,936	0	0	0	0	0	4,333
East King	6,045	9,882	12,857	0	0	0	0	0	28,784
Pierce	351	573	746	0	0	0	0	0	1,670
Total	8,350	13,649	17,758	0	0	0	0	0	39,757

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
70-Vehicles	8,350	13,649	17,758	0	0	0	0	0	39,757
Total	8,350	13,649	17,758	0	0	0	0	0	39,757

Budget Risk Assessment		Schedule Risk Assessment	
Estimate Type:	Scoping	Schedule Risk Level:	Low
Budget Risk Level:	Low	2016 Budget Schedule:	2018
		2017 Budget Schedule:	2018

Project Risk Assessment
Some uncertainty exists with the composition of the fleet with bus type, size and fuel as well as our transit partners ability to base and maintain our buses as we approach base capacities.

**2017 Cashflow by Budget Approval**  
(in thousands)

System Expansion  
OTHER

Project Number and Name	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
<b>Preliminary Engineering</b>									
809100 ST3 Planning	21,294	6,850	24,505	0	0	0	0	0	52,648
809103 Central & East HCT Study	2,127	25	0	0	0	0	0	0	2,152
<b>Subtotal</b>	<b>23,420</b>	<b>6,875</b>	<b>24,505</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>54,800</b>
<b>Baseline</b>									
6X668 SStart	16,628	1,390	6,675	6,188	4,235	3,443	2,088	8,621	49,267
<b>Subtotal</b>	<b>16,628</b>	<b>1,390</b>	<b>6,675</b>	<b>6,188</b>	<b>4,235</b>	<b>3,443</b>	<b>2,088</b>	<b>8,621</b>	<b>49,267</b>
<b>Operating</b>									
600668 SStart Operations & Maintenance	863	239	184	171	180	183	190	2,919	4,927
<b>Subtotal</b>	<b>863</b>	<b>239</b>	<b>184</b>	<b>171</b>	<b>180</b>	<b>183</b>	<b>190</b>	<b>2,919</b>	<b>4,927</b>
<b>Program</b>									
56 of 147 3X212 Fare Collection	8,452	148	388	351	735	397	380	4,020	14,870
5X410 Research & Technology	9,898	2,297	2,696	2,801	2,034	0	0	275	20,000
600016 Fare Administration	1,108	2,473	5,615	673	500	986	2,477	2,271	16,103
600039 Fare Policy Program	0	400	400	300	300	108	0	0	1,508
<b>Subtotal</b>	<b>19,457</b>	<b>5,317</b>	<b>9,100</b>	<b>4,124</b>	<b>3,569</b>	<b>1,491</b>	<b>2,858</b>	<b>6,566</b>	<b>52,482</b>
<b>Total</b>	<b>\$60,368</b>	<b>\$13,821</b>	<b>\$40,463</b>	<b>\$10,483</b>	<b>\$7,983</b>	<b>\$5,116</b>	<b>\$5,136</b>	<b>\$18,106</b>	<b>\$161,476</b>

**2017 Cashflow by Subarea**  
(in thousands)

System Expansion  
OTHER

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
1 - Snohomish	3,590	192	758	701	596	443	308	2,023	8,612
2 - North King	5,156	394	1,605	1,488	1,033	848	533	2,700	13,757
3 - South King	6,357	361	1,436	1,328	1,100	828	568	3,632	15,611
4 - East King	8,419	680	2,802	2,598	1,817	1,487	938	4,809	23,549
5 - Pierce	4,547	175	645	594	604	415	312	2,395	9,687
6 - Systemwide	32,299	12,020	33,216	3,774	2,834	1,094	2,477	2,546	90,259
<b>Total</b>	<b>\$60,368</b>	<b>\$13,821</b>	<b>\$40,463</b>	<b>\$10,483</b>	<b>\$7,983</b>	<b>\$5,116</b>	<b>\$5,136</b>	<b>\$18,106</b>	<b>\$161,476</b>

**2017 Cashflow by Phase**  
(in thousands)

Phase # and Description	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
01-Operation+Maintenance	268	95	98	101	104	107	110	605	1,488
02-Operation+Maintenance-Agency	594	144	86	70	76	76	80	2,314	3,439
10-Agency Administration	5,895	2,631	1,987	747	895	346	316	1,897	14,714
20-Prelim Engineering/Env Review	22,893	6,110	24,008	407	300	108	39	54	53,919
26-Research+Technology	7,056	3,640	7,484	2,976	2,071	986	2,439	2,492	29,142
40-Row Acquisition+Permits	1	100	199	0	0	0	0	0	300
50-Construction	7,925	62	276	351	668	397	380	3,677	13,737
61-Art	15,735	1,040	6,325	5,832	3,869	3,097	1,772	7,068	44,737
<b>Total</b>	<b>\$60,368</b>	<b>\$13,821</b>	<b>\$40,463</b>	<b>\$10,483</b>	<b>\$7,983</b>	<b>\$5,116</b>	<b>\$5,136</b>	<b>\$18,106</b>	<b>\$161,476</b>

**809100**

**ST3 Planning**

**Managed by: PEPD**

Scope: Provide funding for the study of future regional transit system expansion beyond the Sound Move and ST2 programs. The ST3 plan includes funding for studying public transit expansion options in nine corridors. These studies were split into their own projects reducing the scope to long-range planning beyond the Sound Move and ST2 programs. The project is currently in the ST3 Planning Phase and on track for public ballot.

Changes to authorized project allocation since 2016: None.

Authorized Project Allocation to Date (in \$000s of \$ YOE dollars)		Total Financial Plan Project Estimate (in \$000s of \$ 2016)	
Phase Gate Passed:	1-Enter Project Development	2008 Cost Estimate:	\$64,969
Baseline:	\$0	2016 Cost Estimate:	\$51,008
2016 TIP:	\$52,648	2017 Cost Estimate:	\$51,008
2017 TIP:	\$52,648		

**Cashflow (in thousands)**

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
Systemwide	21,294	6,850	24,505	0	0	0	0	0	52,648
Total	21,294	6,850	24,505	0	0	0	0	0	52,648

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	3,190	1,500	1,148	0	0	0	0	0	5,838
20-Prelim Engineering/Env Review	18,102	5,250	23,157	0	0	0	0	0	46,510
40-Row Acquisition+Permits	1	100	199	0	0	0	0	0	300
Total	21,294	6,850	24,505	0	0	0	0	0	52,648

Budget Risk Assessment	
Estimate Type:	Planning
Budget Risk Level:	Low

Schedule Risk Assessment	
Schedule Risk Level:	Low
2016 Budget Schedule:	2018
2017 Budget Schedule:	2018

Project Risk Assessment
N/A



**809103****Central & East HCT Study****Managed by: PEPD**

Scope: Identify and evaluate alternative high-capacity transit (HCT) modes, routes, and potential station areas along high-capacity transit corridors.

Changes to authorized project allocation since 2016: None.

Authorized Project Allocation to Date (in \$000s of \$ YOE dollars)		Total Financial Plan Project Estimate (in \$000s of \$ 2016)	
Phase Gate Passed:	1-Enter Project Development	2008 Cost Estimate:	N/A
Baseline:	\$0	2016 Cost Estimate:	\$2,141
2016 TIP:	\$2,152	2017 Cost Estimate:	\$2,141
2017 TIP:	\$2,152		

**Cashflow (in thousands)**

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
North King	1,063	12	0	0	0	0	0	0	1,076
East King	1,063	12	0	0	0	0	0	0	1,076
Total	2,127	25	0	0	0	0	0	0	2,152

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	147	0	0	0	0	0	0	0	147
20-Prelim Engineering/Env Review	1,980	25	0	0	0	0	0	0	2,004
Total	2,127	25	0	0	0	0	0	0	2,152

Budget Risk Assessment		Schedule Risk Assessment	
Estimate Type:	Planning	Schedule Risk Level:	Low
Budget Risk Level:	Low	2016 Budget Schedule:	2017
		2017 Budget Schedule:	2017

**Project Risk Assessment**

N/A
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**6X668**

**STart**

**Managed by: DECM**

Scope: The Sound Transit Art Program (STart) incorporates art into Sound Transit facilities. The artwork is intended to reflect the communities served and contribute to a positive experience for customers. The Board supports a public art budget of one percent of construction costs excluding tunneling for all Sound Move and ST2 projects. In 2010, Resolution No. R2010-21 consolidated the Sound Move and ST2 Art programs and established an Art Policy. Ten percent of the total Art program funding is earmarked for the maintenance of the art collection (see project 600668).

Changes to authorized project allocation since 2016: None.

Authorized Project Allocation to Date (in \$000s of \$ YOE dollars)		Total Financial Plan Project Estimate (in \$000s of \$ 2016)	
Phase Gate Passed:	N/A	2008 Cost Estimate:	N/A
Baseline:	\$0	2016 Cost Estimate:	\$49,936
2016 TIP:	\$49,267	2017 Cost Estimate:	\$49,936
2017 TIP:	\$49,267		

**Cashflow (in thousands)**

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
Snohomish	1,630	136	654	606	415	337	205	845	4,828
North King	3,891	325	1,562	1,448	991	806	489	2,017	11,529
South King	3,143	263	1,261	1,170	800	651	395	1,629	9,312
East King	6,767	566	2,717	2,519	1,724	1,401	850	3,509	20,052
Pierce	1,197	100	481	446	305	248	150	621	3,547
<b>Total</b>	<b>16,628</b>	<b>1,390</b>	<b>6,675</b>	<b>6,188</b>	<b>4,235</b>	<b>3,443</b>	<b>2,088</b>	<b>8,621</b>	<b>49,267</b>

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	892	350	350	356	366	346	316	1,553	4,530
61-Art	15,735	1,040	6,325	5,832	3,869	3,097	1,772	7,068	44,737
<b>Total</b>	<b>16,628</b>	<b>1,390</b>	<b>6,675</b>	<b>6,188</b>	<b>4,235</b>	<b>3,443</b>	<b>2,088</b>	<b>8,621</b>	<b>49,267</b>

Budget Risk Assessment		Schedule Risk Assessment	
Estimate Type:	Planning	Schedule Risk Level:	Low
Budget Risk Level:	Low	2016 Budget Schedule:	2023
		2017 Budget Schedule:	2023

Project Risk Assessment
N/A

**600668****STart Operations & Maintenance****Managed by: DECM**

Scope: Maintain Sound Transit art installations, including documentation, monitoring, cleaning, repair and occasional replacement. As part of the Sound Transit Art program (STart), the lifetime budget is set at ten percent of the total STart program.

Changes to authorized project allocation since 2016: None.

Authorized Project Allocation to Date (in \$000s of \$ YOE dollars)		Total Financial Plan Project Estimate (in \$000s of \$ 2016)	
Phase Gate Passed:	N/A	2008 Cost Estimate:	N/A
Baseline:	\$0	2016 Cost Estimate:	\$4,927
2016 TIP:	\$4,927	2017 Cost Estimate:	\$4,927
2017 TIP:	\$4,927		

**Cashflow (in thousands)**

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
Snohomish	85	23	18	17	18	18	19	286	483
North King	202	56	43	40	42	43	44	683	1,153
South King	163	45	35	32	34	35	36	552	931
East King	351	97	75	70	73	74	77	1,188	2,005
Pierce	62	17	13	12	13	13	14	210	355
Total	863	239	184	171	180	183	190	2,919	4,927

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
01-Operation+Maintenance	268	95	98	101	104	107	110	605	1,488
02-Operation+Maintenance-Agency	594	144	86	70	76	76	80	2,314	3,439
Total	863	239	184	171	180	183	190	2,919	4,927

Budget Risk Assessment		Schedule Risk Assessment	
Estimate Type:	Planning	Schedule Risk Level:	Low
Budget Risk Level:	Low	2016 Budget Schedule:	2023
		2017 Budget Schedule:	2023

**Project Risk Assessment**

N/A
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Scope: Maintain and upgrade as required, Agency fare collection systems which includes: Ticket Vending Machines (TVMs), One Regional Card for All (ORCA) system, secure payment requirements, and electronic citations for fare validation and enforcement.

Changes to authorized project allocation since 2016: None.

Board Approved Capital Budget (in thousands of YOE dollars)		ST2 Total Project Cost Estimate (in thousands of 2016 dollars)	
Phase Gate Passed:	N/A		
Baseline:	\$0	2008 Cost Estimate:	N/A
2016 TIP:	\$14,870	2016 Cost Estimate:	N/A
2017 TIP:	\$14,870	2017 Cost Estimate:	N/A

TIP Cashflow (in thousands)

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
Snohomish	1,876	33	86	78	163	88	84	893	3,301
South King	3,051	53	140	127	265	143	137	1,451	5,368
East King	237	4	11	10	21	11	11	113	416
Pierce	3,288	57	151	136	286	154	148	1,564	5,785
Total	8,452	148	388	351	735	397	380	4,020	14,870

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	376	86	112	0	67	0	0	344	984
20-Prelim Engineering/Env Review	150	0	0	0	0	0	0	0	150
50-Construction	7,925	62	276	351	668	397	380	3,677	13,737
Total	8,452	148	388	351	735	397	380	4,020	14,870

Budget Risk Assessment		Schedule Risk Assessment	
Estimate Type:	Construction	Schedule Risk Level:	Medium
Budget Risk Level:	High	2016 Budget Schedule:	2023
		2017 Budget Schedule:	2023

Project Risk Assessment

The current budget and schedule is based on early planning estimates for rehabilitation and replacement for these assets. The costs are at high risk until more detailed assessment of the condition of the fielded assets and associated repair and replacement costs are developed.

**5X410**

**Research & Technology**

**Managed by: FIT**

Scope: Assess and implement new transit technologies to improve the agency's operational effectiveness, efficiency and customer experience. This program focuses on system wide security and safety technology, real-time service information and passenger communications, and deploying applications to manage operations better.

Changes to authorized project allocation since 2016: None

Authorized Project Allocation to Date (in \$000s of \$ YOE dollars)		Total Financial Plan Project Estimate (in \$000s of \$ 2016)	
Phase Gate Passed:	N/A	2008 Cost Estimate:	N/A
Baseline:	\$0	2016 Cost Estimate:	N/A
2016 TIP:	\$20,000	2017 Cost Estimate:	N/A
2017 TIP:	\$20,000		

**Cashflow (in thousands)**

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
Systemwide	9,898	2,297	2,696	2,801	2,034	0	0	275	20,000
Total	9,898	2,297	2,696	2,801	2,034	0	0	275	20,000

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	1,289	580	378	391	463	0	0	0	3,100
20-Prelim Engineering/Env Review	1,667	200	200	33	0	0	0	0	2,100
26-Research+Technology	6,942	1,517	2,119	2,377	1,571	0	0	275	14,800
Total	9,898	2,297	2,696	2,801	2,034	0	0	275	20,000

Budget Risk Assessment		Schedule Risk Assessment	
Estimate Type:	Planning	Schedule Risk Level:	High
Budget Risk Level:	Medium	2016 Budget Schedule:	2023
		2017 Budget Schedule:	2023

Project Risk Assessment
Elements of this program are in various stages of design and include new technologies that require custom software development which creates budget and schedule risk while a project goes from an idea or concept to a fully scoped project. Extensive coordination with external agencies adds level of schedule risk.

**600016**

**Fare Administration**

**Managed by: FIT**

Scope: Create and install fare system enhancements to the existing regional smart card system (ORCA) and fare collection systems. Project includes the planning, development and implementation of a new fare collection system, ngORCA. The program also manages fares and pricing for Sound Transit.

Changes to authorized project allocation since 2016: \$1.5 million transferred to the new Fare Policy Program project.

Authorized Project Allocation to Date (in \$000s of \$ YOE dollars)		Total Financial Plan Project Estimate (in \$000s of \$ 2016)	
Phase Gate Passed:	N/A	2008 Cost Estimate:	N/A
Baseline:	\$0	2016 Cost Estimate:	N/A
2016 TIP:	\$17,611	2017 Cost Estimate:	N/A
2017 TIP:	\$16,103		

**Cashflow (in thousands)**

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
Systemwide	1,108	2,473	5,615	673	500	986	2,477	2,271	16,103
Total	1,108	2,473	5,615	673	500	986	2,477	2,271	16,103

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	0	115	0	0	0	0	0	0	115
20-Prelim Engineering/Env Review	994	235	250	74	0	0	39	54	1,646
26-Research+Technology	114	2,123	5,365	599	500	986	2,439	2,217	14,342
Total	1,108	2,473	5,615	673	500	986	2,477	2,271	16,103

Budget Risk Assessment		Schedule Risk Assessment	
Estimate Type:	Planning	Schedule Risk Level:	Low
Budget Risk Level:	Low	2016 Budget Schedule:	2023
		2017 Budget Schedule:	2023

Project Risk Assessment
N/A

<b>600039</b>	<b>Fare Policy Program</b>	<b>Managed by: FIT</b>
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Scope: Research and develop business practices and strategic initiatives to improve regional mobility and system efficiency. Develop and implement programs to improve the match between market needs and system performance.

Changes to authorized project allocation since 2016: \$1.5 million transferred to new Fare Policy Program from Fare Administration.

Authorized Project Allocation to Date (in \$000s of \$ YOE dollars)	Total Financial Plan Project Estimate (in \$000s of \$ 2016)
Phase Gate Passed:	
Baseline: \$0	2008 Cost Estimate: N/A
2016 TIP: \$0	2016 Cost Estimate: N/A
2017 TIP: \$1,508	2017 Cost Estimate: N/A

**Cashflow (in thousands)**

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
Systemwide	0	400	400	300	300	108	0	0	1,508
Total	0	400	400	300	300	108	0	0	1,508

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
20-Prelim Engineering/Env Review	0	400	400	300	300	108	0	0	1,508
Total	0	400	400	300	300	108	0	0	1,508

Budget Risk Assessment	Schedule Risk Assessment
Estimate Type: Planning	Schedule Risk Level: Low
Budget Risk Level: Low	2016 Budget Schedule:
	2017 Budget Schedule: 2021

Project Risk Assessment
The project risk is minimal as the policy review is limited by available funds.

## Enhancement

Although the majority of Sound Transit's projects are related to expanding the regional transit system, work is planned and ongoing to improve operating efficiency and effectiveness, improve the rider experience, increase system functionality, or reduce operating costs.

### 2017 Enhancement Project Highlights

- Install brighter, more energy efficient LED lighting and energy efficient upgrades at the Operations and Maintenance Facility (OMF), and Kent, Puyallup and Sumner Sounder Stations.
- Commission Positive Train Control (PTC) to increase operational safety of commuter rail in accordance with National Transportation Safety Board requirements.
- Complete design, procure and begin the installation of a second light rail vehicle lift at the Link Operations & Maintenance Facility (OMF).
- Upgrade the Link Closed Circuit Television System (CCTV) camera system by upgrading aged analog cameras to new digital cameras with higher resolution.
- Install modifications to the washer for light rail vehicles, in order to allow the washing of two vehicles and automated forehead washing of the LRVs.
- Install switches along the link overhead catenary system to allow for the turning off of power to specific locations along the alignment.
- Install a security system at the Bellevue Transit Center and upgrade the centralized access control system to agency facilities.

### CHANGES TO AUTHORIZED PROJECT ALLOCATIONS TO DATE (in thousands)

Project	Reason	Budget Type	Explanation	Change
<b>LINK</b>				
LRV Wash Bay Modifications	New Project	Operating	Modifications to LRV car wash system required to automate LRV forehead cleaning.	\$300
LRV Wheel Flat Software	New Project	Operating	Add software to the existing LRV wheel flat detection system to more accurately and efficiently identify and remedy sources of vibration in LRVs.	\$250
OMF Energy Efficiency	New Project	Operating	Replace existing Operations and Maintenance Facility shop bay lighting and HVAC controls to increase energy efficiency and reduce operating costs.	\$1,098
<b>SOUNDER</b>				
Customer Emergency Stations	New Project	Operating	Customer emergency stations are required at the Kent and Auburn Sounder station parking garages.	\$800
Locomotive Inboard Cameras	New Project	Operating	New Federal Railroad Administration rule that requires inboard facing cameras to monitor the actions of the engineers in handling a train.	\$300
Sounder Passenger Emergency Intercom	New Project	Operating	Install improved Passenger Emergency Intercom system to fulfill new FRA rule requiring passengers to be able to speak directly with a train crew member.	\$1,500



Project	Reason	Budget Type	Explanation	Change
<b>REGIONAL EXPRESS</b>				
Bellevue TC Security System	New Project	Operating	Security systems are required at the Bellevue Transit Center.	\$150
<b>OTHER</b>				
Signage Improvements	Scope Change	Operating	Study to be conducted in response to customer complaints that wayfinding signs are inadequate at the location of Link services.	\$200



## 2017 TIP Cashflow by Budget Approval

(in thousands)

### Enhancement

#### ALL MODES

Project Number and Name	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
700724 Puyallup Station LED Lighting	0	178	0	0	0	0	0	0	178
700725 Sumner Station LED Lighting	0	134	0	0	0	0	0	0	134
700726 Kent Station Platform Lighting	0	236	0	0	0	0	0	0	236
700727 Kent Station Parking Lot Paving	74	626	0	0	0	0	0	0	700
700733 OMF LRV Wash Heater System	268	0	32	0	0	0	0	0	300
700775 Central Link Card Readers	131	292	0	0	0	0	0	0	423
700777 Central Link Overhead Catenary System Tie Switch	5	2,995	0	0	0	0	0	0	3,000
<b>Subtotal</b>	<b>477</b>	<b>8,434</b>	<b>1,320</b>	<b>18</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>10,249</b>
<b>Program</b>									
700781 Non-revenue Support Vehicles	558	1,034	256	223	58	0	0	0	2,130
804100 Transit-Oriented Development Property Disposition	2,812	1,725	2,350	1,730	1,250	1,092	656	0	11,615
<b>Subtotal</b>	<b>3,370</b>	<b>2,759</b>	<b>2,606</b>	<b>1,953</b>	<b>1,308</b>	<b>1,092</b>	<b>656</b>	<b>0</b>	<b>13,745</b>
<b>Total</b>	<b>\$64,978</b>	<b>\$30,742</b>	<b>\$21,081</b>	<b>\$8,810</b>	<b>\$1,308</b>	<b>\$1,092</b>	<b>\$1,038</b>	<b>\$67</b>	<b>\$129,117</b>

**2017 TIP Cashflow by Subarea**  
(in thousands)

Enhancement  
ALL MODES

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
1 - Snohomish	4,198	730	2,142	486	0	0	0	0	7,555
2 - North King	12,780	14,274	5,279	1,890	1,289	1,092	656	0	37,261
3 - South King	6,655	6,239	3,622	381	20	0	0	0	16,917
4 - East King	4,405	214	6,056	0	0	0	0	0	10,675
5 - Pierce	36,314	7,831	3,734	6,053	0	0	382	67	54,380
6 - Systemwide	627	1,455	248	0	0	0	0	0	2,329
<b>Total</b>	<b>\$64,978</b>	<b>\$30,742</b>	<b>\$21,081</b>	<b>\$8,810</b>	<b>\$1,308</b>	<b>\$1,092</b>	<b>\$1,038</b>	<b>\$67</b>	<b>\$129,117</b>

**2017 TIP Cashflow by Phase**  
(in thousands)

Phase # and Description	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	4,184	1,950	837	951	250	170	90	0	8,432
20-Prelim Engineering/Env Review	495	93	253	150	100	94	0	0	1,186
30-Final Design+Specifications	528	1,565	70	70	0	0	0	0	2,233
35-Third Party	2,510	3,724	0	367	0	0	0	0	6,601
40-Row Acquisition+Permits	2,198	1,019	1,559	1,100	800	750	566	0	7,992
50-Construction	50,007	19,472	16,964	1,074	100	78	382	0	88,078
55-Construction Services	2,840	458	1,141	3,151	0	0	0	0	7,589
70-Vehicles	2,131	1,034	257	223	58	0	0	0	3,703
80-System Testing+Startup	86	1,404	0	0	0	0	0	0	1,490
90-Contingency	0	22	0	1,725	0	0	0	67	1,814
<b>Total</b>	<b>\$64,978</b>	<b>\$30,742</b>	<b>\$21,081</b>	<b>\$8,810</b>	<b>\$1,308</b>	<b>\$1,092</b>	<b>\$1,038</b>	<b>\$67</b>	<b>\$129,117</b>

<b>400044</b>	<b>Link Operating Segment Systems Enhancements and Upgrades</b>	<b>Managed by: DECM</b>
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Scope: Deliver enhancements and upgrades to systems on the existing Link operating segment, including AC power distribution, traction power, overhead catenary system, signals and communications systems upgrades, and enhancements to existing engineering infrastructure.

Changes to authorized project allocation since 2016: \$1.4 million for new project.

Authorized Project Allocation to Date (in \$000s of \$ YOE dollars)	Total Financial Plan Project Estimate (in \$000s of \$ 2016)
Phase Gate Passed: <span style="float:right">None</span>	
Baseline:	2008 Cost Estimate: <span style="float:right">N/A</span>
2016 TIP: <span style="float:right">\$0</span>	2016 Cost Estimate: <span style="float:right">N/A</span>
2017 TIP: <span style="float:right">\$1,400</span>	2017 Cost Estimate: <span style="float:right">N/A</span>

**Cashflow (in thousands)**

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
North King	0	935	0	0	0	0	0	0	935
South King	0	465	0	0	0	0	0	0	465
Total	0	1,400	0	0	0	0	0	0	1,400

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	0	185	0	0	0	0	0	0	185
30-Final Design+Specifications	0	185	0	0	0	0	0	0	185
50-Construction	0	950	0	0	0	0	0	0	950
55-Construction Services	0	80	0	0	0	0	0	0	80
Total	0	1,400	0	0	0	0	0	0	1,400

Budget Risk Assessment	Schedule Risk Assessment
Estimate Type: <span style="float:right">Scoping</span>	Schedule Risk Level: <span style="float:right">Low</span>
Budget Risk Level: <span style="float:right">Low</span>	2016 Budget Schedule:
	2017 Budget Schedule: <span style="float:right">2017</span>

<b>Project Risk Assessment</b>
Work will need to be coordinated with Link Operations to avoid impacts to light rail revenue service.

**5X261**

**Bus Maintenance Facility**

**Managed by: Operations**

Scope: Fund expansion of Sound Transit's fleet maintenance capacity through contributions to facilities managed by third party service providers. The cash flow is flexible as often no projects are planned for a given year.

Changes to authorized project allocation since 2016: None.

Authorized Project Allocation to Date (in \$000s of \$ YOE dollars)		Total Financial Plan Project Estimate (in \$000s of \$ 2016)	
Phase Gate Passed:	None	2008 Cost Estimate:	N/A
Baseline:	\$0	2016 Cost Estimate:	N/A
2016 TIP:	\$22,033	2017 Cost Estimate:	N/A
2017 TIP:	\$22,033		

**Cashflow (in thousands)**

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
Snohomish	1,462	0	2,019	0	0	0	0	0	3,481
South King	1,027	0	1,418	0	0	0	0	0	2,446
East King	4,387	0	6,056	0	0	0	0	0	10,444
Pierce	2,379	0	3,284	0	0	0	0	0	5,662
<b>Total</b>	<b>9,256</b>	<b>0</b>	<b>12,777</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>22,033</b>

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	24	0	0	0	0	0	0	0	24
20-Prelim Engineering/Env Review	8	0	0	0	0	0	0	0	8
40-Row Acquisition+Permits	59	0	0	0	0	0	0	0	59
50-Construction	9,164	0	12,777	0	0	0	0	0	21,941
<b>Total</b>	<b>9,256</b>	<b>0</b>	<b>12,777</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>22,033</b>

Budget Risk Assessment		Schedule Risk Assessment	
Estimate Type:	Planning	Schedule Risk Level:	Low
Budget Risk Level:	Low	2016 Budget Schedule:	2017
		2017 Budget Schedule:	2017

**Project Risk Assessment**

The schedule is flexible as it is predicated on partners to submit projects for participation. The schedules dates can change if no projects are planned.

**700723** **Downtown Seattle Transit Tunnel Mitigation** **Managed by: Operations**

Scope: This project reflects the Sound Transit contribution to a partnership for a series of mitigation improvements, including street improvements in downtown Seattle, to mitigate impacts to bus operations as buses transition from the Downtown Seattle Transit Tunnel (DSTT) to surface streets to accommodate increased light rail activity in the tunnel.

Changes to authorized project allocation since 2016: None.

Authorized Project Allocation to Date (in \$000s of \$ YOE dollars)		Total Financial Plan Project Estimate (in \$000s of \$ 2016)	
Phase Gate Passed:	N/A	2008 Cost Estimate:	N/A
Baseline:		2016 Cost Estimate:	N/A
2016 TIP:	\$2,334	2017 Cost Estimate:	N/A
2017 TIP:	\$2,334		

**Cashflow (in thousands)**

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
North King	0	2,334	0	0	0	0	0	0	2,334
Total	0	2,334	0	0	0	0	0	0	2,334

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
35-Third Party	0	2,334	0	0	0	0	0	0	2,334
Total	0	2,334	0	0	0	0	0	0	2,334

Budget Risk Assessment		Schedule Risk Assessment	
Estimate Type:	Fixed Contribution	Schedule Risk Level:	Low
Budget Risk Level:	Low	2016 Budget Schedule:	2017
		2017 Budget Schedule:	2017

Project Risk Assessment
Project risk is minimal as Sound Transit's contribution is fixed.

**700730** **Operations & Maintenance Facility LRV Lift** **Managed by: Operations**

Scope: Design, procure and install a second lift in the Link Operations and Maintenance Facility. The installation of a second lift in support of operations is required to accommodate scheduled and unscheduled light rail vehicle (LRV) maintenance needs and capacity.

Changes to authorized project allocation since 2016: None.

Authorized Project Allocation to Date (in \$000s of \$ YOE dollars)		Total Financial Plan Project Estimate (in \$000s of \$ 2016)	
Phase Gate Passed:	6-Proceed to Construction	2008 Cost Estimate:	N/A
Baseline:	\$4,898	2016 Cost Estimate:	N/A
2016 TIP:	\$4,898	2017 Cost Estimate:	N/A
2017 TIP:	\$4,898		

**Cashflow (in thousands)**

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
North King	376	3,803	0	0	0	0	0	0	4,179
South King	65	654	0	0	0	0	0	0	719
Total	440	4,458	0	0	0	0	0	0	4,898

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	182	317	0	0	0	0	0	0	499
20-Prelim Engineering/Env Review	258	2	0	0	0	0	0	0	260
30-Final Design+Specifications	0	250	0	0	0	0	0	0	250
50-Construction	1	3,684	0	0	0	0	0	0	3,684
55-Construction Services	0	205	0	0	0	0	0	0	205
Total	440	4,458	0	0	0	0	0	0	4,898

Budget Risk Assessment		Schedule Risk Assessment	
Estimate Type:	Conceptual Engineering	Schedule Risk Level:	High
Budget Risk Level:	Medium	2016 Budget Schedule:	2017
		2017 Budget Schedule:	2017

Project Risk Assessment
Constructability of project, given the constraints of having to install the lift in an on-going working environment, creates challenges in both schedule and cost. Procurement issues may delay the project.



**700736 Union Station Garden Level Remodel Managed by: Operations**

Scope: Renovate Union Station's Garden Level: convert cubicle space from 8X8 to 6X8 configuration, add 7 enclosed offices, relocate 3 offices, create a new mailroom, install new carpet, purchase and install 132 cubicles, and install new data cabling to support additional staff and consultants.

Changes to authorized project allocation since 2016: None.

Authorized Project Allocation to Date (in \$000s of \$ YOE dollars)		Total Financial Plan Project Estimate (in \$000s of \$ 2016)	
Phase Gate Passed:	N/A	2008 Cost Estimate:	N/A
Baseline:	\$0	2016 Cost Estimate:	N/A
2016 TIP:	\$1,854	2017 Cost Estimate:	N/A
2017 TIP:	\$1,854		

**Cashflow (in thousands)**

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
Systemwide	399	1,455	0	0	0	0	0	0	1,854
Total	399	1,455	0	0	0	0	0	0	1,854

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	3	0	0	0	0	0	0	0	3
30-Final Design+Specifications	21	0	0	0	0	0	0	0	21
50-Construction	376	1,455	0	0	0	0	0	0	1,831
Total	399	1,455	0	0	0	0	0	0	1,854

Budget Risk Assessment		Schedule Risk Assessment	
Estimate Type:	Planning	Schedule Risk Level:	Low
Budget Risk Level:	Medium	2016 Budget Schedule:	2016
		2017 Budget Schedule:	2017

Project Risk Assessment
In any remodel project the risk of scope creep for unknown conditions exists.

<b>700784</b>	<b>Regional Parking Pilot Project</b>	<b>Managed by: Operations</b>
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Scope: Conduct test and evaluate parking management strategies under the system implementation of customer parking permits to include: vanpool customer parking, community outreach activities and real time parking availability monitoring.

Changes to authorized project allocation since 2016: None

Authorized Project Allocation to Date (in \$000s of \$ YOE dollars)	Total Financial Plan Project Estimate (in \$000s of \$ 2016)
Phase Gate Passed: <span style="float: right;">N/A</span>	
Baseline: <span style="float: right;">\$0</span>	2008 Cost Estimate: <span style="float: right;">N/A</span>
2016 TIP: <span style="float: right;">\$475</span>	2016 Cost Estimate: <span style="float: right;">N/A</span>
2017 TIP: <span style="float: right;">\$475</span>	2017 Cost Estimate: <span style="float: right;">N/A</span>

**Cashflow (in thousands)**

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
Systemwide	227	0	248	0	0	0	0	0	475
Total	227	0	248	0	0	0	0	0	475

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
20-Prelim Engineering/Env Review	99	0	103	0	0	0	0	0	202
50-Construction	128	0	145	0	0	0	0	0	273
Total	227	0	248	0	0	0	0	0	475

Budget Risk Assessment	Schedule Risk Assessment
Estimate Type: <span style="float: right;">Planning</span>	Schedule Risk Level: <span style="float: right;">Low</span>
Budget Risk Level: <span style="float: right;">Low</span>	2016 Budget Schedule: <span style="float: right;">2016</span>
	2017 Budget Schedule: <span style="float: right;">2016</span>

Project Risk Assessment
N/A

<b>700793</b>	<b>Signage Improvements</b>	<b>Managed by: DECM</b>
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Scope: Sound Transit is modifying and updating signage at existing Link and Sounder stations and ticket vending machine (TVM) locations to improve wayfinding and reflect system expansion. Work includes design, fabrication, and installation of new signage elements.

Ticket vending machine signage reface work was completed in 2016.

Changes to authorized project allocation since 2016: \$200 thousand to study wayfinding issues to assist ease of access to Link services.

Authorized Project Allocation to Date (in \$000s of \$ YOE dollars)	Total Financial Plan Project Estimate (in \$000s of \$ 2016)
Phase Gate Passed: <span style="float: right;">N/A</span>	2008 Cost Estimate: <span style="float: right;">N/A</span>
Baseline:	2016 Cost Estimate: <span style="float: right;">N/A</span>
2016 TIP: <span style="float: right;">\$931</span>	2017 Cost Estimate: <span style="float: right;">N/A</span>
2017 TIP: <span style="float: right;">\$1,131</span>	

**Cashflow (in thousands)**

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
Snohomish	0	3	0	0	0	0	0	0	3
North King	56	484	0	0	0	0	0	0	541
South King	60	520	0	0	0	0	0	0	580
East King	0	1	0	0	0	0	0	0	1
Pierce	1	5	0	0	0	0	0	0	6
Total	118	1,014	0	0	0	0	0	0	1,131

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	58	23	0	0	0	0	0	0	81
30-Final Design+Specifications	46	248	0	0	0	0	0	0	294
50-Construction	14	715	0	0	0	0	0	0	728
55-Construction Services	0	28	0	0	0	0	0	0	28
Total	118	1,014	0	0	0	0	0	0	1,131

Budget Risk Assessment	Schedule Risk Assessment
Estimate Type: <span style="float: right;">Scoping</span>	Schedule Risk Level: <span style="float: right;">Low</span>
Budget Risk Level: <span style="float: right;">Low</span>	2016 Budget Schedule: <span style="float: right;">2016</span>
	2017 Budget Schedule: <span style="float: right;">2017</span>

Project Risk Assessment
N/A

<b>700798</b>	<b>Link Remote Switch Heaters</b>	<b>Managed by: Operations</b>
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Scope: Install remote switch heaters at Rainier Beach Station and Stadium Station interlockings to enhance the capabilities of providing all-weather service.

Changes to authorized project allocation since 2016: None.

Authorized Project Allocation to Date (in \$000s of \$ YOE dollars)	Total Financial Plan Project Estimate (in \$000s of \$ 2016)
Phase Gate Passed: <span style="float: right;">N/A</span>	2008 Cost Estimate: <span style="float: right;">N/A</span>
Baseline: <span style="float: right;">\$0</span>	2016 Cost Estimate: <span style="float: right;">N/A</span>
2016 TIP: <span style="float: right;">\$200</span>	2017 Cost Estimate: <span style="float: right;">N/A</span>
2017 TIP: <span style="float: right;">\$200</span>	

**Cashflow (in thousands)**

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
North King	75	125	0	0	0	0	0	0	200
Total	75	125	0	0	0	0	0	0	200

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	18	19	0	0	0	0	0	0	37
20-Prelim Engineering/Env Review	57	0	0	0	0	0	0	0	57
50-Construction	0	106	0	0	0	0	0	0	106
Total	75	125	0	0	0	0	0	0	200

Budget Risk Assessment	Schedule Risk Assessment
Estimate Type: <span style="float: right;">Initial Estimate</span>	Schedule Risk Level: <span style="float: right;">Low</span>
Budget Risk Level: <span style="float: right;">Low</span>	2016 Budget Schedule: <span style="float: right;">2017</span>
	2017 Budget Schedule: <span style="float: right;">2017</span>

Project Risk Assessment
Remote switch heaters will be installed by Sound Transit maintenance staff. Risk of other work receiving the resource allocations resulting in delays to the project schedule.

**300011**

**Positive Train Control**

**Managed by: DECM**

Scope: Integrate command, control, communications, and information systems for controlling passenger train movements with safety, security, precision, and efficiency. These systems will improve railroad safety by significantly reducing the probability of collisions between trains, casualties to railway workers and damage to their equipment, and over speed accidents. Federal regulations had previously mandated that PTC be operational on all passenger rail systems by the end of December 2015, but this was recently extended by three years. The project was originally scheduled to be completed in 2015, however due to third party delays, it will now likely complete in third quarter of 2017. Budget displayed in 2019 is considered surplus at this time.

Changes to authorized project allocation since 2016: None.

Authorized Project Allocation to Date (in \$000s of \$ YOE dollars)		Total Financial Plan Project Estimate (in \$000s of \$ 2016)	
Phase Gate Passed:	6-Proceed to Construction	2008 Cost Estimate:	N/A
Baseline:	\$53,054	2016 Cost Estimate:	N/A
2016 TIP:	\$53,054	2017 Cost Estimate:	N/A
2017 TIP:	\$53,054		

**Cashflow (in thousands)**

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
Snohomish	2,700	568	13	486	0	0	0	0	3,767
South King	1,673	352	8	301	0	0	0	0	2,334
Pierce	33,653	7,081	166	6,053	0	0	0	0	46,953
Total	38,026	8,002	187	6,840	0	0	0	0	53,054

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	1,386	150	100	601	0	0	0	0	2,238
30-Final Design+Specifications	226	0	0	52	0	0	0	0	279
35-Third Party	2,510	1,390	0	367	0	0	0	0	4,267
50-Construction	33,066	4,937	48	944	0	0	0	0	38,995
55-Construction Services	752	120	39	3,151	0	0	0	0	4,062
80-System Testing+Startup	86	1,404	0	0	0	0	0	0	1,490
90-Contingency	0	0	0	1,725	0	0	0	0	1,725
Total	38,026	8,002	187	6,840	0	0	0	0	53,054

Budget Risk Assessment		Schedule Risk Assessment	
Estimate Type:	Construction	Schedule Risk Level:	Medium
Budget Risk Level:	Low	2016 Budget Schedule:	2016
		2017 Budget Schedule:	2016

Project Risk Assessment
Limited availability of contractor technical staff and high demand for their services; Availability of Federal Railroad Administration staff for final certification; BNSF implementation delays of their PTC system on the Seattle sub-division.

**4X210**

**LRV On Board Energy Storage**

**Managed by: DECM**

Scope: Design, procure, and install energy storage units on up to five light rail vehicles to capture and store energy generated by vehicle braking for reuse to improve vehicle operational efficiencies, lower energy consumption, and reduce operating costs. The project is partially funded by a Transit Investment for Greenhouse Gas and Energy Reduction (TIGGER) grant awarded to Sound Transit in 2011.

Work was completed in June 2014, and contract warranty support closed out in 2016. Project close-out is expected in 2017. Budget cash flow in 2018 reflects projected surplus budget.

Changes to authorized project allocation since 2016: None.

Authorized Project Allocation to Date (in \$000s of \$ YOE dollars)		Total Financial Plan Project Estimate (in \$000s of \$ 2016)	
Phase Gate Passed:	6-Proceed to Construction	2008 Cost Estimate:	N/A
Baseline:	\$1,643	2016 Cost Estimate:	N/A
2016 TIP:	\$1,643	2017 Cost Estimate:	N/A
2017 TIP:	\$1,643		

**Cashflow (in thousands)**

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
North King	1,580	0	63	0	0	0	0	0	1,643
Total	1,580	0	63	0	0	0	0	0	1,643

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	7	0	53	0	0	0	0	0	60
30-Final Design+Specifications	0	0	10	0	0	0	0	0	10
70-Vehicles	1,573	0	0	0	0	0	0	0	1,573
Total	1,580	0	63	0	0	0	0	0	1,643

Budget Risk Assessment		Schedule Risk Assessment	
Estimate Type:	Construction	Schedule Risk Level:	Low
Budget Risk Level:	Low	2016 Budget Schedule:	2016
		2017 Budget Schedule:	2016

**Project Risk Assessment**

The project is complete and will be closed in 2017.

<b>4X340</b>	<b>Noise Abatement</b>	<b>Managed by: DECM</b>
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Scope: Design and construct a noise wall along the Link elevated guideway in Tukwila. Funding for the completion of the Residential Sound Insulation Program (RSIP) for residences impacted by noise from operations of Central Link in the Rainier Valley is included in this project.

Construction of the noise wall was completed in 2013. Environmental testing is expected to complete in 2017, with project close-out anticipated in 2018. Budget cash flow in 2018 reflects projected surplus budget.

Changes to authorized project allocation since 2016: None.

Authorized Project Allocation to Date (in \$000s of \$ YOE dollars)		Total Financial Plan Project Estimate (in \$000s of \$ 2016)	
Phase Gate Passed:	6-Proceed to Construction	2008 Cost Estimate:	N/A
Baseline:	\$13,000	2016 Cost Estimate:	N/A
2016 TIP:	\$13,000	2017 Cost Estimate:	N/A
2017 TIP:	\$13,000		

**Cashflow (in thousands)**

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
North King	6,139	89	2,649	0	0	0	0	0	8,876
South King	2,852	41	1,230	0	0	0	0	0	4,124
Total	8,991	130	3,879	0	0	0	0	0	13,000

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	1,026	5	169	0	0	0	0	0	1,200
30-Final Design+Specifications	5	0	55	0	0	0	0	0	60
40-Row Acquisition+Permits	16	25	59	0	0	0	0	0	100
50-Construction	5,856	100	2,494	0	0	0	0	0	8,450
55-Construction Services	2,088	0	1,102	0	0	0	0	0	3,190
Total	8,991	130	3,879	0	0	0	0	0	13,000

Budget Risk Assessment		Schedule Risk Assessment	
Estimate Type:	Construction	Schedule Risk Level:	Low
Budget Risk Level:	Low	2016 Budget Schedule:	2016
		2017 Budget Schedule:	2017

Project Risk Assessment
N/A

**600029**

**Tacoma Link Fare Collection**

**Managed by: FIT**

Scope: Install and commission eight ticket vending machines at Tacoma Link stations, establish a spare parts inventory, set up fare collection and fare enforcement support, and conduct public outreach. No planned budgeted activity until 2022.

Changes to authorized project allocation since 2016: None

Authorized Project Allocation to Date (in \$000s of \$ YOE dollars)		Total Financial Plan Project Estimate (in \$000s of \$ 2016)	
Phase Gate Passed:	N/A	2008 Cost Estimate:	N/A
Baseline:	\$0	2016 Cost Estimate:	N/A
2016 TIP:	\$514	2017 Cost Estimate:	N/A
2017 TIP:	\$514		

**Cashflow (in thousands)**

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
Pierce	64	0	0	0	0	0	382	67	514
Total	64	0	0	0	0	0	382	67	514

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
50-Construction	64	0	0	0	0	0	382	0	447
90-Contingency	0	0	0	0	0	0	0	67	67
Total	64	0	0	0	0	0	382	67	514

Budget Risk Assessment		Schedule Risk Assessment	
Estimate Type:	Initial Estimate	Schedule Risk Level:	Medium
Budget Risk Level:	Low	2016 Budget Schedule:	2016
		2017 Budget Schedule:	2022

**Project Risk Assessment**

Key project risks include a further deferment of implementation. Additionally, fare system contractor timelines for software development and ability to reach intergovernmental agreements for fare enforcement may cause a delay once implementation is approved.



**700774 Central Link HVAC - Instrument House and UPS Room Managed by: Operations**

Scope: Install HVAC system in the uninterruptible power supply (UPS) rooms and signal houses. This project consists of installing AC units in ten instrument houses along the Central Link corridor. AC units are needed to keep equipment inside the bungalows from overheating during periods of hot weather. This project is necessary to ensure the continued integrity of the signal equipment throughout the system. This is the current design standard for Link light rail.

Changes to authorized project allocation since 2016: None.

Authorized Project Allocation to Date (in \$000s of \$ YOE dollars)		Total Financial Plan Project Estimate (in \$000s of \$ 2016)	
Phase Gate Passed:	N/A	2008 Cost Estimate:	N/A
Baseline:	\$0	2016 Cost Estimate:	N/A
2016 TIP:	\$1,232	2017 Cost Estimate:	N/A
2017 TIP:	\$1,232		

**Cashflow (in thousands)**

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
North King	524	300	0	0	0	0	0	0	824
South King	259	149	0	0	0	0	0	0	408
Total	783	449	0	0	0	0	0	0	1,232

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	284	166	0	0	0	0	0	0	450
30-Final Design+Specifications	132	0	0	0	0	0	0	0	132
40-Row Acquisition+Permits	6	24	0	0	0	0	0	0	30
50-Construction	361	259	0	0	0	0	0	0	621
Total	783	449	0	0	0	0	0	0	1,232

Budget Risk Assessment		Schedule Risk Assessment	
Estimate Type:	Construction	Schedule Risk Level:	Low
Budget Risk Level:	Low	2016 Budget Schedule:	2016
		2017 Budget Schedule:	2017

Project Risk Assessment
Project delays associated with small right-of-way needs to allow for the proper installation of equipment.

**7X753** **Bike Locker Program** **Managed by: Operations**

Scope: Install new bicycle parking at various Sounder commuter rail, ST Express bus, and Link light rail stations. In addition, project-funded design and construction of a bicycle plaza adjacent to the light rail Columbia City station. In King County, Sound Transit will add bicycle parking spaces at six light rail and commuter rail stations (Tukwila Station, Kent Station, Auburn Station, Columbia City Station, Othello Station, and Rainier Beach Station). In Pierce County, Sound Transit will expand secured bicycle parking at Puyallup and Sumner Stations. The project will also add benches, lighting, signage, and other pedestrian and bicycle amenities at the commuter rail stations.

Anticipated completion of this project is 2016.

Changes to authorized project allocation since 2016: None.

Authorized Project Allocation to Date (in \$000s of \$ YOE dollars)		Total Financial Plan Project Estimate (in \$000s of \$ 2016)	
Phase Gate Passed:	N/A	2008 Cost Estimate:	N/A
Baseline:	\$0	2016 Cost Estimate:	N/A
2016 TIP:	\$1,355	2017 Cost Estimate:	N/A
2017 TIP:	\$1,355		

**Cashflow (in thousands)**

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
Snohomish	35	6	0	0	0	0	0	0	41
North King	577	91	0	0	0	0	0	0	668
South King	324	51	0	0	0	0	0	0	375
East King	18	3	0	0	0	0	0	0	20
Pierce	217	34	0	0	0	0	0	0	251
Total	1,171	184	0	0	0	0	0	0	1,355

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	290	93	0	0	0	0	0	0	383
30-Final Design+Specifications	98	0	0	0	0	0	0	0	98
40-Row Acquisition+Permits	13	0	0	0	0	0	0	0	13
50-Construction	770	91	0	0	0	0	0	0	861
Total	1,171	184	0	0	0	0	0	0	1,355

Budget Risk Assessment		Schedule Risk Assessment	
Estimate Type:	Construction	Schedule Risk Level:	Low
Budget Risk Level:	Low	2016 Budget Schedule:	2016
		2017 Budget Schedule:	2017

Project Risk Assessment
N/A

**600045**

**On-Demand Bike Locker Pilot**

**Managed by: CEA**

Scope: Installation of 16 bike lockers with on-demand technology at Mercer Island Transit Center to test and evaluate system for potential use at other locations. This project recently received partial funding through a local grant making this project affordable.

Changes to authorized project allocation since 2016: \$60 thousand new project.

Authorized Project Allocation to Date (in \$000s of \$ YOE dollars)		Total Financial Plan Project Estimate (in \$000s of \$ 2016)	
Phase Gate Passed:	N/A	2008 Cost Estimate:	N/A
Baseline:	\$0	2016 Cost Estimate:	N/A
2016 TIP:	\$0	2017 Cost Estimate:	N/A
2017 TIP:	\$60		

**Cashflow (in thousands)**

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
East King	0	60	0	0	0	0	0	0	60
Total	0	60	0	0	0	0	0	0	60

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
50-Construction	0	60	0	0	0	0	0	0	60
Total	0	60	0	0	0	0	0	0	60

Budget Risk Assessment		Schedule Risk Assessment	
Estimate Type:	Construction	Schedule Risk Level:	Low
Budget Risk Level:	Low	2016 Budget Schedule:	
		2017 Budget Schedule:	2019

Project Risk Assessment

**700696 King St Station Platform Improvements Managed by: Operations**

Scope: Participate in a local partnership to design and construction passenger access improvements to King Street Station improving access to Century Link Field. The partnership is between Sound Transit, Washington State Department of Transportation and Amtrak to improve special event train access to King Street Station. Special events requiring 7 car platform support limit train access to other platforms. This will allow improvements to track 9 for game days and special events reducing platform crowding and improving overall safety to passengers. This will be partially funded by a grant from the Federal Railway Administration.

Changes to authorized project allocation since 2016: \$300 thousand new project.

Authorized Project Allocation to Date (in \$000s of \$ YOE dollars)		Total Financial Plan Project Estimate (in \$000s of \$ 2016)	
Phase Gate Passed:	N/A	2008 Cost Estimate:	N/A
Baseline:	\$0	2016 Cost Estimate:	N/A
2016 TIP:	\$0	2017 Cost Estimate:	N/A
2017 TIP:	\$300		

**Cashflow (in thousands)**

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
South King	0	300	0	0	0	0	0	0	300
Total	0	300	0	0	0	0	0	0	300

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	0	25	0	0	0	0	0	0	25
20-Prelim Engineering/Env Review	0	25	0	0	0	0	0	0	25
30-Final Design+Specifications	0	50	0	0	0	0	0	0	50
40-Row Acquisition+Permits	0	75	0	0	0	0	0	0	75
50-Construction	0	125	0	0	0	0	0	0	125
Total	0	300	0	0	0	0	0	0	300

Budget Risk Assessment		Schedule Risk Assessment	
Estimate Type:	Construction	Schedule Risk Level:	Low
Budget Risk Level:	Low	2016 Budget Schedule:	
		2017 Budget Schedule:	2019

Project Risk Assessment

<b>700697</b>	<b>LRV Between Car Barriers</b>	<b>Managed by: Operations</b>
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Scope: Procure platform mounted barriers to be install at 21 Link stations. Federal Transit Authority Regulation 49 CFR 38.85 requires barriers on the platform to prevent visually impaired riders from mistaking the space between light rail vehicles as an open door.

Changes to authorized project allocation since 2016: \$520 thousand new project.

Authorized Project Allocation to Date (in \$000s of \$ YOE dollars)	Total Financial Plan Project Estimate (in \$000s of \$ 2016)
Phase Gate Passed: N/A	
Baseline: \$0	2008 Cost Estimate: N/A
2016 TIP: \$0	2016 Cost Estimate: N/A
2017 TIP: \$520	2017 Cost Estimate: N/A

**Cashflow (in thousands)**

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
North King	0	438	0	0	0	0	0	0	438
South King	0	82	0	0	0	0	0	0	82
Total	0	520	0	0	0	0	0	0	520

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	0	152	0	0	0	0	0	0	152
50-Construction	0	368	0	0	0	0	0	0	368
Total	0	520	0	0	0	0	0	0	520

Budget Risk Assessment	Schedule Risk Assessment
Estimate Type: Construction	Schedule Risk Level: Low
Budget Risk Level: Low	2016 Budget Schedule:
	2017 Budget Schedule: 2019

Project Risk Assessment

<b>700706</b>	<b>OMF Energy Efficiency</b>	<b>Managed by: Operations</b>
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Scope: Replace existing Operations and Maintenance Facility shop bay lighting (metal halide) with LED fixtures and replace the direct digital controls on the HVAC system to allow integration with Union Station controls to increase energy efficiency and reduce operating costs.

Changes to authorized project allocation since 2016: \$1.1 million for new project.

Authorized Project Allocation to Date (in \$000s of \$ YOE dollars)	Total Financial Plan Project Estimate (in \$000s of \$ 2016)
Phase Gate Passed: <span style="float: right;">N/A</span>	
Baseline:	2008 Cost Estimate: <span style="float: right;">N/A</span>
2016 TIP: <span style="float: right;">\$0</span>	2016 Cost Estimate: <span style="float: right;">N/A</span>
2017 TIP: <span style="float: right;">\$1,098</span>	2017 Cost Estimate: <span style="float: right;">N/A</span>

**Cashflow (in thousands)**

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
North King	0	696	25	12	0	0	0	0	733
South King	0	346	13	6	0	0	0	0	365
Total	0	1,042	38	18	0	0	0	0	1,098

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	0	10	33	0	0	0	0	0	43
30-Final Design+Specifications	0	227	5	18	0	0	0	0	250
50-Construction	0	805	0	0	0	0	0	0	805
Total	0	1,042	38	18	0	0	0	0	1,098

Budget Risk Assessment	Schedule Risk Assessment
Estimate Type: <span style="float: right;">Initial Estimate</span>	Schedule Risk Level: <span style="float: right;">Medium</span>
Budget Risk Level: <span style="float: right;">Low</span>	2016 Budget Schedule:
	2017 Budget Schedule: <span style="float: right;">2019</span>

Project Risk Assessment
Work will need to be coordinated with Link Operations to avoid impacts to light rail vehicle maintenance.

<b>700707</b>	<b>Bellevue TC Security System</b>	<b>Managed by: Operations</b>
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Scope: Procure and install security systems in the Bellevue Transit Center.

Changes to authorized project allocation since 2016: \$150 thousand for new project.

Authorized Project Allocation to Date (in \$000s of \$ YOE dollars)	Total Financial Plan Project Estimate (in \$000s of \$ 2016)
Phase Gate Passed: N/A	2008 Cost Estimate: N/A
Baseline: \$0	2016 Cost Estimate: N/A
2016 TIP: \$0	2017 Cost Estimate: N/A
2017 TIP: \$150	

**Cashflow (in thousands)**

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
East King	0	150	0	0	0	0	0	0	150
Total	0	150	0	0	0	0	0	0	150

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
50-Construction	0	150	0	0	0	0	0	0	150
Total	0	150	0	0	0	0	0	0	150

Budget Risk Assessment	Schedule Risk Assessment
Estimate Type: Initial Estimate	Schedule Risk Level: Low
Budget Risk Level: Low	2016 Budget Schedule:
	2017 Budget Schedule: 2017

Project Risk Assessment
The risk of budget or schedule changes is minimal given the scope of the project.

<b>700708</b>	<b>Customer Emergency Stations</b>	<b>Managed by: Operations</b>
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Scope: Installation of customer emergency stations at the Kent and Auburn parking garages.

Changes to authorized project allocation since 2016: \$800 thousand for new project.

Authorized Project Allocation to Date (in \$000s of \$ YOE dollars)	Total Financial Plan Project Estimate (in \$000s of \$ 2016)
Phase Gate Passed:	
Baseline: \$0	2008 Cost Estimate: N/A
2016 TIP: \$0	2016 Cost Estimate: N/A
2017 TIP: \$800	2017 Cost Estimate: N/A

**Cashflow (in thousands)**

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
South King	0	300	500	0	0	0	0	0	800
Total	0	300	500	0	0	0	0	0	800

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
50-Construction	0	300	500	0	0	0	0	0	800
Total	0	300	500	0	0	0	0	0	800

Budget Risk Assessment	Schedule Risk Assessment
Estimate Type: Planning	Schedule Risk Level: Low
Budget Risk Level: Low	2016 Budget Schedule:
	2017 Budget Schedule: 2018

**Project Risk Assessment**

However slight, when installing this many stations (4 per floor) unexpected site conditions may result in schedule or budget changes.



**700710**

**Locomotive Inboard Cameras**

**Managed by: Operations**

Scope: A new Federal Railroad Administration rule requires inboard facing cameras to monitor the actions of the engineers in handling a train. This project is for a total of 41 pieces of equipment.

Changes to authorized project allocation since 2016: \$300 thousand for new project.

Authorized Project Allocation to Date (in \$000s of \$ YOE dollars)		Total Financial Plan Project Estimate (in \$000s of \$ 2016)	
Phase Gate Passed:	N/A	2008 Cost Estimate:	N/A
Baseline:	\$0	2016 Cost Estimate:	N/A
2016 TIP:	\$0	2017 Cost Estimate:	N/A
2017 TIP:	\$300		

**Cashflow (in thousands)**

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
Snohomish	0	44	0	0	0	0	0	0	44
South King	0	143	0	0	0	0	0	0	143
Pierce	0	114	0	0	0	0	0	0	114
Total	0	300	0	0	0	0	0	0	300

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	0	30	0	0	0	0	0	0	30
30-Final Design+Specifications	0	30	0	0	0	0	0	0	30
50-Construction	0	240	0	0	0	0	0	0	240
Total	0	300	0	0	0	0	0	0	300

Budget Risk Assessment		Schedule Risk Assessment	
Estimate Type:	Construction	Schedule Risk Level:	Low
Budget Risk Level:	Low	2016 Budget Schedule:	
		2017 Budget Schedule:	2018

Project Risk Assessment

**700711** **Sounder Passenger Emergency Intercom** **Managed by: Operations**

Scope: New FRA rule requires passengers to be able to speak directly with a train crew member. The new Bombardier Cab Cars are coming with a system to meet this new rule. However, this system will only allow passengers to talk directly with the engineer, not the conductor. There is an "Emergency Order" put out by the FRA that prohibits an engineer from being disturbed by a cell phone. This project upgrades this system which will require an upgrade on all cars with a Passenger Emergency Intercom (PEI) system that will enable passengers to speak directly to the conductor instead of the engineer so as not to allow passengers to disturb the engineer.

Changes to authorized project allocation since 2016: \$1.5 million new project.

Authorized Project Allocation to Date (in \$000s of \$ YOE dollars)		Total Financial Plan Project Estimate (in \$000s of \$ 2016)	
Phase Gate Passed:	N/A	2008 Cost Estimate:	N/A
Baseline:	\$0	2016 Cost Estimate:	N/A
2016 TIP:	\$0	2017 Cost Estimate:	N/A
2017 TIP:	\$1,500		

**Cashflow (in thousands)**

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
Snohomish	0	110	110	0	0	0	0	0	219
South King	0	356	356	0	0	0	0	0	713
Pierce	0	284	284	0	0	0	0	0	569
Total	0	750	750	0	0	0	0	0	1,500

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	0	150	0	0	0	0	0	0	150
30-Final Design+Specifications	0	300	0	0	0	0	0	0	300
50-Construction	0	300	750	0	0	0	0	0	1,050
Total	0	750	750	0	0	0	0	0	1,500

Budget Risk Assessment		Schedule Risk Assessment	
Estimate Type:	Construction	Schedule Risk Level:	Low
Budget Risk Level:	Low	2016 Budget Schedule:	
		2017 Budget Schedule:	2019

Project Risk Assessment

<b>700712</b>	<b>LRV Wheel Flat Software</b>	<b>Managed by: Operations</b>
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Scope: Based on agreements with the University of Washington (UW), Link light rail trains operating in the vicinity of the University must remain within agreed-upon vibrational criteria. To enable vehicle maintenance staff to more accurately and efficiently identify and remedy sources of vibration in light rail vehicles (LRVs), an additional axle identifier (transponder) software module that will interface with the existing LRV wheel flat detection system will be purchased and installed, including selection of a contractor experienced with the software to oversee its installation.

Changes to authorized project allocation since 2016: \$250 thousand for new project.

Authorized Project Allocation to Date (in \$000s of \$ YOE dollars)	Total Financial Plan Project Estimate (in \$000s of \$ 2016)
Phase Gate Passed: <span style="float: right;">None</span>	2008 Cost Estimate: <span style="float: right;">N/A</span>
Baseline:	2016 Cost Estimate: <span style="float: right;">N/A</span>
2016 TIP: <span style="float: right;">\$0</span>	2017 Cost Estimate: <span style="float: right;">N/A</span>
2017 TIP: <span style="float: right;">\$250</span>	

**Cashflow (in thousands)**

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
North King	0	167	0	0	0	0	0	0	167
South King	0	83	0	0	0	0	0	0	83
Total	0	250	0	0	0	0	0	0	250

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	0	50	0	0	0	0	0	0	50
30-Final Design+Specifications	0	150	0	0	0	0	0	0	150
50-Construction	0	50	0	0	0	0	0	0	50
Total	0	250	0	0	0	0	0	0	250

Budget Risk Assessment	Schedule Risk Assessment
Estimate Type: <span style="float: right;">Initial Estimate</span>	Schedule Risk Level: <span style="float: right;">Low</span>
Budget Risk Level: <span style="float: right;">Low</span>	2016 Budget Schedule:
	2017 Budget Schedule: <span style="float: right;">2017</span>

Project Risk Assessment
Careful planning is required so that installation does not impact daily train maintenance operations at the Operations and Maintenance Facility.

<b>700713</b>	<b>LRV Wash Bay Modifications</b>	<b>Managed by: Operations</b>
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Scope: Modify the Link light rail vehicle (LRV) car wash system at the Link Operations and Maintenance Facility, including upgrades to electrical and mechanical equipment, to provide automatic LRV forehead cleaning and eliminate manual washing.

Changes to authorized project allocation since 2016: \$300 thousand for new project.

Authorized Project Allocation to Date (in \$000s of \$ YOE dollars)	Total Financial Plan Project Estimate (in \$000s of \$ 2016)
Phase Gate Passed: N/A	2008 Cost Estimate: N/A
Baseline:	2016 Cost Estimate: N/A
2016 TIP: \$0	2017 Cost Estimate: N/A
2017 TIP: \$300	

**Cashflow (in thousands)**

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
North King	0	200	0	0	0	0	0	0	200
South King	0	100	0	0	0	0	0	0	100
Total	0	300	0	0	0	0	0	0	300

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	0	25	0	0	0	0	0	0	25
30-Final Design+Specifications	0	75	0	0	0	0	0	0	75
50-Construction	0	200	0	0	0	0	0	0	200
Total	0	300	0	0	0	0	0	0	300

Budget Risk Assessment	Schedule Risk Assessment
Estimate Type: Initial Estimate	Schedule Risk Level: Low
Budget Risk Level: Low	2016 Budget Schedule:
	2017 Budget Schedule: 2017

Project Risk Assessment
Reduction in availability of the LRV wash system while modifications are installed.

<b>700724</b>	<b>Puyallup Station LED Lighting</b>	<b>Managed by: Operations</b>
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Scope: Install energy efficient lighting at Puyallup Station. Work will result in receiving a utility incentive based upon the energy reduction achieved and will reduce energy consumption on a ongoing basis.

Changes to authorized project allocation since 2016: None.

Authorized Project Allocation to Date (in \$000s of \$ YOE dollars)	Total Financial Plan Project Estimate (in \$000s of \$ 2016)
Phase Gate Passed: <span style="float: right;">N/A</span>	
Baseline: <span style="float: right;">\$0</span>	2008 Cost Estimate: <span style="float: right;">N/A</span>
2016 TIP: <span style="float: right;">\$178</span>	2016 Cost Estimate: <span style="float: right;">N/A</span>
2017 TIP: <span style="float: right;">\$178</span>	2017 Cost Estimate: <span style="float: right;">N/A</span>

**Cashflow (in thousands)**

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
Pierce	0	178	0	0	0	0	0	0	178
Total	0	178	0	0	0	0	0	0	178

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
50-Construction	0	178	0	0	0	0	0	0	178
Total	0	178	0	0	0	0	0	0	178

Budget Risk Assessment	Schedule Risk Assessment
Estimate Type: <span style="float: right;">Construction</span>	Schedule Risk Level: <span style="float: right;">Low</span>
Budget Risk Level: <span style="float: right;">Low</span>	2016 Budget Schedule: <span style="float: right;">2016</span>
	2017 Budget Schedule: <span style="float: right;">2017</span>

Project Risk Assessment
Risk is minimal for a straight procurement

<b>700725</b>	<b>Sumner Station LED Lighting</b>	<b>Managed by: Operations</b>
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Scope: Install energy efficient lighting at Sumner Station. Work will result in receiving a utility incentive based upon the energy reduction achieved and will reduce energy consumption on a ongoing basis.

Changes to authorized project allocation since 2016: None.

Authorized Project Allocation to Date (in \$000s of \$ YOE dollars)	Total Financial Plan Project Estimate (in \$000s of \$ 2016)
Phase Gate Passed: <span style="float: right;">N/A</span>	
Baseline: <span style="float: right;">\$0</span>	2008 Cost Estimate: <span style="float: right;">N/A</span>
2016 TIP: <span style="float: right;">\$134</span>	2016 Cost Estimate: <span style="float: right;">N/A</span>
2017 TIP: <span style="float: right;">\$134</span>	2017 Cost Estimate: <span style="float: right;">N/A</span>

**Cashflow (in thousands)**

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
Pierce	0	134	0	0	0	0	0	0	134
Total	0	134	0	0	0	0	0	0	134

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
50-Construction	0	134	0	0	0	0	0	0	134
Total	0	134	0	0	0	0	0	0	134

Budget Risk Assessment	Schedule Risk Assessment
Estimate Type: <span style="float: right;">Construction</span>	Schedule Risk Level: <span style="float: right;">Low</span>
Budget Risk Level: <span style="float: right;">Low</span>	2016 Budget Schedule: <span style="float: right;">2016</span>
	2017 Budget Schedule: <span style="float: right;">2017</span>

Project Risk Assessment
Risk is minimal for a straight procurement.

<b>700726</b>	<b>Kent Station Platform Lighting</b>	<b>Managed by: Operations</b>
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Scope: Install energy efficient lighting at Kent Station. In late 2012 lighting was upgraded in the Kent Garage, this project will extend the upgrades to the platform, surface lots, pedestrian bridge, and bus loop areas. Work will result in receiving a utility incentive based upon the energy reduction achieved and will reduce energy consumption on an ongoing basis.

Changes to authorized project allocation since 2016: None.

Authorized Project Allocation to Date (in \$000s of \$ YOE dollars)	Total Financial Plan Project Estimate (in \$000s of \$ 2016)
Phase Gate Passed: <span style="float: right;">N/A</span>	
Baseline: <span style="float: right;">\$0</span>	2008 Cost Estimate: <span style="float: right;">N/A</span>
2016 TIP: <span style="float: right;">\$236</span>	2016 Cost Estimate: <span style="float: right;">N/A</span>
2017 TIP: <span style="float: right;">\$236</span>	2017 Cost Estimate: <span style="float: right;">N/A</span>

**Cashflow (in thousands)**

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
South King	0	236	0	0	0	0	0	0	236
Total	0	236	0	0	0	0	0	0	236

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
50-Construction	0	236	0	0	0	0	0	0	236
Total	0	236	0	0	0	0	0	0	236

Budget Risk Assessment	Schedule Risk Assessment
Estimate Type: <span style="float: right;">Construction</span>	Schedule Risk Level: <span style="float: right;">Low</span>
Budget Risk Level: <span style="float: right;">Low</span>	2016 Budget Schedule: <span style="float: right;">2016</span>
	2017 Budget Schedule: <span style="float: right;">2017</span>

Project Risk Assessment
Risk is minimal for a straight procurement.

<b>700727</b>	<b>Kent Station Parking Lot Paving</b>	<b>Managed by: Operations</b>
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Scope: Design and install paved and landscaped commuter parking to an additional 36 standard spaces, 1 compact space and 2 Americans with Disabilities Act (ADA) spaces.

Changes to authorized project allocation since 2016: None.

Authorized Project Allocation to Date (in \$000s of \$ YOE dollars)	Total Financial Plan Project Estimate (in \$000s of \$ 2016)
Phase Gate Passed: N/A	
Baseline: \$0	2008 Cost Estimate: N/A
2016 TIP: \$700	2016 Cost Estimate: N/A
2017 TIP: \$700	2017 Cost Estimate: N/A

**Cashflow (in thousands)**

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
South King	74	626	0	0	0	0	0	0	700
Total	74	626	0	0	0	0	0	0	700

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	1	0	0	0	0	0	0	0	1
20-Prelim Engineering/Env Review	73	66	0	0	0	0	0	0	139
50-Construction	0	560	0	0	0	0	0	0	560
Total	74	626	0	0	0	0	0	0	700

Budget Risk Assessment	Schedule Risk Assessment
Estimate Type: Construction	Schedule Risk Level: Low
Budget Risk Level: Low	2016 Budget Schedule: 2016
	2017 Budget Schedule: 2016

Project Risk Assessment
The risk of a changing scope could effect the ultimate budget as requirements may change.



<b>700733</b>	<b>OMF LRV Wash Heater System</b>	<b>Managed by: Operations</b>
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Scope: Install a heating system within the OMF LRV washbay facility that includes overhead radiant heaters, water line heat tracing, and a small unit heater. The installation of the system will allow for all-weather operation and reduce the risk to operators of working in icy conditions when weather is below freezing.

Changes to authorized project allocation since 2016: None.

Authorized Project Allocation to Date (in \$000s of \$ YOE dollars)	Total Financial Plan Project Estimate (in \$000s of \$ 2016)
Phase Gate Passed: 1-Enter Project Development	
Baseline: \$0	2008 Cost Estimate: N/A
2016 TIP: \$300	2016 Cost Estimate: N/A
2017 TIP: \$300	2017 Cost Estimate: N/A

**Cashflow (in thousands)**

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
North King	179	0	22	0	0	0	0	0	201
South King	89	0	11	0	0	0	0	0	99
Total	268	0	32	0	0	0	0	0	300

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	141	0	32	0	0	0	0	0	174
50-Construction	126	0	0	0	0	0	0	0	126
Total	268	0	32	0	0	0	0	0	300

Budget Risk Assessment	Schedule Risk Assessment
Estimate Type: Initial Estimate	Schedule Risk Level: Low
Budget Risk Level: Low	2016 Budget Schedule: 2016
	2017 Budget Schedule: 2016

Project Risk Assessment
Modifications to existing systems pose potential compatibility issues potentially putting schedule and budget at risk however slight.

<b>700775</b>	<b>Central Link Card Readers</b>	<b>Managed by: Operations</b>
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Scope: Install card readers on all doors at Central Link stations' public areas. Card readers are required to ensure secure premises, eliminate the need to issue keys to a large number of staff and ensure consistency in key control.

Changes to authorized project allocation since 2016: None.

Authorized Project Allocation to Date (in \$000s of \$ YOE dollars)	Total Financial Plan Project Estimate (in \$000s of \$ 2016)
Phase Gate Passed: <span style="float: right;">N/A</span>	
Baseline: <span style="float: right;">\$0</span>	2008 Cost Estimate: <span style="float: right;">N/A</span>
2016 TIP: <span style="float: right;">\$423</span>	2016 Cost Estimate: <span style="float: right;">N/A</span>
2017 TIP: <span style="float: right;">\$423</span>	2017 Cost Estimate: <span style="float: right;">N/A</span>

**Cashflow (in thousands)**

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
North King	88	195	0	0	0	0	0	0	283
South King	43	97	0	0	0	0	0	0	140
Total	131	292	0	0	0	0	0	0	423

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	57	20	0	0	0	0	0	0	77
30-Final Design+Specifications	0	50	0	0	0	0	0	0	50
50-Construction	74	175	0	0	0	0	0	0	249
55-Construction Services	0	25	0	0	0	0	0	0	25
90-Contingency	0	22	0	0	0	0	0	0	22
Total	131	292	0	0	0	0	0	0	423

Budget Risk Assessment	Schedule Risk Assessment
Estimate Type: <span style="float: right;">Construction</span>	Schedule Risk Level: <span style="float: right;">Low</span>
Budget Risk Level: <span style="float: right;">Low</span>	2016 Budget Schedule: <span style="float: right;">2017</span>
	2017 Budget Schedule: <span style="float: right;">2017</span>

Project Risk Assessment
The readers will be installed at multiple locations providing a slight risk to schedule and budget.

**700777 Central Link Overhead Catenary System Tie Switch Managed by: Operations**

Scope: Install the mechanical means to electrically bridge the Overhead Catenary System (OCS) section insulators at approximately 34 various locations throughout the Link alignment to allow inspection and maintenance of traction power substations without interrupting Link service.

Changes to authorized project allocation since 2016: None

Authorized Project Allocation to Date (in \$000s of \$ YOE dollars)		Total Financial Plan Project Estimate (in \$000s of \$ 2016)	
Phase Gate Passed:	N/A	2008 Cost Estimate:	N/A
Baseline:	\$0	2016 Cost Estimate:	N/A
2016 TIP:	\$3,000	2017 Cost Estimate:	N/A
2017 TIP:	\$3,000		

**Cashflow (in thousands)**

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
North King	3	2,004	0	0	0	0	0	0	2,007
South King	2	991	0	0	0	0	0	0	993
Total	5	2,995	0	0	0	0	0	0	3,000

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	0	0	0	0	0	0	0	0	0
50-Construction	5	2,995	0	0	0	0	0	0	3,000
Total	5	2,995	0	0	0	0	0	0	3,000

Budget Risk Assessment		Schedule Risk Assessment	
Estimate Type:	Scoping	Schedule Risk Level:	Medium
Budget Risk Level:	Low	2016 Budget Schedule:	2017
		2017 Budget Schedule:	2017

Project Risk Assessment
Project is intended to be completed by Link Maintenance staff. There is a risk to schedule when competing projects use limited resources initially allocated to this project.

<b>700781</b>	<b>Non-revenue Support Vehicles</b>	<b>Managed by: Operations</b>
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Scope: Purchase and replace maintenance vehicles to improve maintenance efficiencies for the Link light rail system.

Changes to authorized project allocation since 2016: None

Authorized Project Allocation to Date (in \$000s of \$ YOE dollars)	Total Financial Plan Project Estimate (in \$000s of \$ 2016)
Phase Gate Passed: <span style="float: right;">N/A</span>	
Baseline: <span style="float: right;">\$0</span>	2008 Cost Estimate: <span style="float: right;">N/A</span>
2016 TIP: <span style="float: right;">\$2,130</span>	2016 Cost Estimate: <span style="float: right;">N/A</span>
2017 TIP: <span style="float: right;">\$2,130</span>	2017 Cost Estimate: <span style="float: right;">N/A</span>

**Cashflow (in thousands)**

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
North King	371	688	170	148	39	0	0	0	1,416
South King	187	347	86	75	20	0	0	0	713
Total	558	1,034	256	223	58	0	0	0	2,130

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
70-Vehicles	558	1,034	256	223	58	0	0	0	2,130
Total	558	1,034	256	223	58	0	0	0	2,130

Budget Risk Assessment	Schedule Risk Assessment
Estimate Type: <span style="float: right;">Planning</span>	Schedule Risk Level: <span style="float: right;">Low</span>
Budget Risk Level: <span style="float: right;">Low</span>	2016 Budget Schedule: <span style="float: right;">2019</span>
	2017 Budget Schedule: <span style="float: right;">2019</span>

Project Risk Assessment
N/A

**804100** **Transit Oriented Development Property Disposition** **Managed by: PEPD**

Scope: Provide planning and technical assistance to local jurisdictions and Sound Transit project teams to help identify and shape transit oriented development and joint development opportunities. Dispose of properties that have been declared surplus and are suitable for transit oriented development based on size and proximity to ST transit services.

Changes to authorized project allocation since 2016: None.

Authorized Project Allocation to Date (in \$000s of \$ YOE dollars)		Total Financial Plan Project Estimate (in \$000s of \$ 2016)	
Phase Gate Passed:	N/A	2008 Cost Estimate:	N/A
Baseline:	\$0	2016 Cost Estimate:	N/A
2016 TIP:	\$11,615	2017 Cost Estimate:	N/A
2017 TIP:	\$11,615		

**Cashflow (in thousands)**

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
North King	2,812	1,725	2,350	1,730	1,250	1,092	656	0	11,615
Total	2,812	1,725	2,350	1,730	1,250	1,092	656	0	11,615

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	706	530	450	350	250	170	90	0	2,546
20-Prelim Engineering/Env Review	0	0	150	150	100	94	0	0	494
40-Row Acquisition+Permits	2,104	895	1,500	1,100	800	750	566	0	7,715
50-Construction	2	300	250	130	100	78	0	0	860
Total	2,812	1,725	2,350	1,730	1,250	1,092	656	0	11,615

Budget Risk Assessment		Schedule Risk Assessment	
Estimate Type:	Planning	Schedule Risk Level:	Low
Budget Risk Level:	Low	2016 Budget Schedule:	2023
		2017 Budget Schedule:	2023

Project Risk Assessment
N/A

## Rehabilitation & Replacement

Rehabilitation & Replacement projects extend the life of existing system assets and replace those at the end of their useful life. As the transit system ages, investment in maintaining our assets in a state of good repair will rise.

### 2017 Rehabilitation & Replacement Project Highlights

- Replace the bus loops at the Tukwila International Blvd Station and the Auburn Station.
- Upgrade and replace the hardware and software backbone of Sound Transit legacy information technology systems.
- Overhaul three Sounder locomotives to maintain them in good repair and meet higher emissions standards.
- Rehabilitate 11 Sounder HEP (Power) Controllers which provide wayside power to locomotives reducing locomotive idling time and fuel consumption.
- Begin the process of refurbishing 58 passenger doors on Sounder passenger cars which have begun to fail due to repeated use.
- Perform bridge repairs to two bridge segments supporting the Link system.

CHANGES TO AUTHORIZED PROJECT ALLOCATIONS TO DATE (in thousands)

Project	Reason	Budget Type	Explanation	Change
<b>LINK</b>				
Link Bridge Repairs	New Project	Operating	Repairs to bridge structures within the Link light rail alignment are required to correct areas of deterioration that have developed over time.	\$550
Link CCTV System Upgrade	Cost Increase	Operating	Additional scope added to project.	\$2,394
Link Radio Upgrade	New Project	Operating	Upgrade Distributed Antenna System in support of Link tunnel operations.	\$1,000
<b>SOUNDER</b>				
Sounder Vehicle Overhaul Program	Cost Increase	Program	To add head end power controllers overhaul (\$550k) and passenger car door rehabilitation (\$250k).	\$800
Station Midlife Refurbishment Program	Cost Increase	Program	Additional budget required to rehabilitate the Tukwila International Blvd Station bus loop.	\$245
<b>OTHER</b>				
Small Works Program	Cost Increase	Program	Extend the program another year and added budget based on work identified for 2017.	\$3,366

## 2017 Cashflow by Budget Approval

(in thousands)

### Rehabilitation and Replacement

#### ALL MODES

Project Number and Name	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
<b>Preliminary Engineering</b>									
400046 Convention Place Development Systems Retrofit	0	2,549	0	0	0	0	0	0	2,549
700718 Tacoma Link Light Rail Vehicle Overhaul	54	418	259	0	0	0	0	0	731
870100 IT Link Light Rail	212	1,597	1,548	183	0	0	0	395	3,935
<b>Subtotal</b>	<b>266</b>	<b>4,564</b>	<b>1,807</b>	<b>183</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>395</b>	<b>7,215</b>
<b>Operating</b>									
600033 Link CCTV System Upgrade	626	2,394	74	0	0	0	0	0	3,094
700695 Access Control Card Upgrade	0	1,114	0	0	0	0	0	0	1,114
700704 Link Radio Upgrade	0	1,000	0	0	0	0	0	0	1,000
700705 Link Bridge Repairs	0	550	0	0	0	0	0	0	550
700728 Link Station Braided Tile Replacement	0	435	0	0	0	0	0	0	435
700769 LRV Overhaul	2,041	2,959	0	0	0	0	0	0	5,000
7X356 Tacoma Dome Station	0	414	0	0	0	0	0	0	414
<b>Subtotal</b>	<b>2,666</b>	<b>8,865</b>	<b>74</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>11,606</b>
<b>Program</b>									
700770 Sounder Vehicle Overhaul Program	14,166	6,652	4,284	0	0	0	0	0	25,101
700771 Station Midlife Refurbishment Program	1,079	616	0	0	0	0	0	0	1,695
7X701 ST Express Fleet Replacement	118,498	25	50,644	0	0	20,102	0	0	189,269
7X740 Small Works Program	3,164	3,073	1,489	1,006	992	979	604	0	11,308
870101 IT Transit Systems	224	355	305	550	343	840	486	2,802	5,905
<b>Subtotal</b>	<b>137,130</b>	<b>10,721</b>	<b>56,722</b>	<b>1,556</b>	<b>1,335</b>	<b>21,921</b>	<b>1,090</b>	<b>2,802</b>	<b>233,278</b>
<b>Total</b>	<b>\$140,062</b>	<b>\$24,150</b>	<b>\$58,604</b>	<b>\$1,739</b>	<b>\$1,335</b>	<b>\$21,921</b>	<b>\$1,090</b>	<b>\$3,197</b>	<b>\$252,100</b>

**2017 Cashflow by Subarea**  
(in thousands)

Rehabilitation and Replacement  
ALL MODES

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
1 - Snohomish	23,208	1,315	9,694	131	129	3,665	79	0	38,220
2 - North King	2,415	10,284	1,420	286	149	147	91	293	15,085
3 - South King	21,523	7,135	8,009	198	149	2,177	91	102	39,384
4 - East King	55,110	595	23,579	191	188	9,433	115	0	89,212
5 - Pierce	37,583	4,466	15,597	382	377	5,659	230	0	64,293
6 - Systemwide	224	355	305	550	343	840	486	2,802	5,905
<b>Total</b>	<b>\$140,062</b>	<b>\$24,150</b>	<b>\$58,604</b>	<b>\$1,739</b>	<b>\$1,335</b>	<b>\$21,921</b>	<b>\$1,090</b>	<b>\$3,197</b>	<b>\$252,100</b>

**2017 Cashflow by Phase**  
(in thousands)

Phase # and Description	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
09-Admin Capital	212	755	300	150	0	0	0	0	1,417
10-Agency Administration	413	474	0	0	0	0	0	0	888
20-Prelim Engineering/Env Review	72	178	0	0	0	0	0	0	250
30-Final Design+Specifications	39	336	0	0	0	0	0	0	375
35-Third Party	0	156	0	0	0	0	0	0	156
50-Construction	12,644	11,977	3,116	1,589	1,335	1,819	1,090	3,197	36,769
55-Construction Services	0	220	0	0	0	0	0	0	220
70-Vehicles	126,682	10,054	55,188	0	0	20,102	0	0	212,025
<b>Total</b>	<b>\$140,062</b>	<b>\$24,150</b>	<b>\$58,604</b>	<b>\$1,739</b>	<b>\$1,335</b>	<b>\$21,921</b>	<b>\$1,090</b>	<b>\$3,197</b>	<b>\$252,100</b>



**400046** **Convention Place Development Systems Retrofit** **Managed by: DECM**

Scope: Install electrical distribution equipment that is necessary for the operation and integration of the Pine Street facility with the University Link and the Downtown Seattle Transit Tunnel. This effort is in support of the deletion of the emergency generator necessary for the Convention Center project.

Changes to authorized project allocation since 2016: \$2,55 million for new project.

Authorized Project Allocation to Date (in \$000s of \$ YOE dollars)		Total Financial Plan Project Estimate (in \$000s of \$ 2016)	
Phase Gate Passed:	None	2008 Cost Estimate:	N/A
Baseline:		2016 Cost Estimate:	N/A
2016 TIP:	\$0	2017 Cost Estimate:	N/A
2017 TIP:	\$2,549		

**Cashflow (in thousands)**

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
North King	0	2,549	0	0	0	0	0	0	2,549
Total	0	2,549	0	0	0	0	0	0	2,549

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	0	233	0	0	0	0	0	0	233
30-Final Design+Specifications	0	72	0	0	0	0	0	0	72
50-Construction	0	2,025	0	0	0	0	0	0	2,025
55-Construction Services	0	220	0	0	0	0	0	0	220
Total	0	2,549	0	0	0	0	0	0	2,549

Budget Risk Assessment		Schedule Risk Assessment	
Estimate Type:	Scoping	Schedule Risk Level:	Low
Budget Risk Level:	Medium	2016 Budget Schedule:	
		2017 Budget Schedule:	2017

Project Risk Assessment
Work will need to be coordinated with Link Operations and King County Metro to avoid impacts to existing DSTT operations

**700718 Tacoma Link Light Rail Vehicle Overhaul Managed by: Operations**

Scope: Maintain, preserve, and extend the life of the Tacoma Link fleet of three light rail vehicles. Repair, replace and overhaul traction motors and trucks, including wheel assemblies and gear boxes for the light rail vehicles per the manufacturer's 375,000 mile overhaul guidelines.

Changes to authorized project allocation since 2016: None.

Authorized Project Allocation to Date (in \$000s of \$ YOE dollars)		Total Financial Plan Project Estimate (in \$000s of \$ 2016)	
Phase Gate Passed:	Pending	2008 Cost Estimate:	N/A
Baseline:	\$0	2016 Cost Estimate:	N/A
2016 TIP:	\$731	2017 Cost Estimate:	N/A
2017 TIP:	\$731		

**Cashflow (in thousands)**

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
Pierce	54	418	259	0	0	0	0	0	731
Total	54	418	259	0	0	0	0	0	731

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
70-Vehicles	54	418	259	0	0	0	0	0	731
Total	54	418	259	0	0	0	0	0	731

Budget Risk Assessment		Schedule Risk Assessment	
Estimate Type:	Scoping	Schedule Risk Level:	Low
Budget Risk Level:	Low	2016 Budget Schedule:	2018
		2017 Budget Schedule:	2018

Project Risk Assessment
N/A

**870100**

**IT Link Light Rail**

**Managed by: FIT**

Scope: Maintain the lifecycle maintenance of the IT infrastructure behind the Link light rail Supervisory Control and Data Acquisition (SCADA) system to mitigate equipment failure of an operationally-critical system including, but not limited to, servers, storage area networks, networking equipment, Video Messaging Systems/backend and other computer-based infrastructure, and enhancements and maintenance for IT SCADA security. The project also includes integration of legacy hardware/software at Link light rail stations and control centers with upcoming future light rail expansion.

Changes to authorized project allocation since 2016: None.

Authorized Project Allocation to Date (in \$000s of \$ YOE dollars)		Total Financial Plan Project Estimate (in \$000s of \$ 2016)	
Phase Gate Passed:	None	2008 Cost Estimate:	N/A
Baseline:	\$0	2016 Cost Estimate:	N/A
2016 TIP:	\$3,935	2017 Cost Estimate:	N/A
2017 TIP:	\$3,935		

**Cashflow (in thousands)**

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
North King	157	1,183	1,147	135	0	0	0	293	2,915
South King	55	414	401	47	0	0	0	102	1,020
Total	212	1,597	1,548	183	0	0	0	395	3,935

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
09-Admin Capital	212	755	300	150	0	0	0	0	1,417
50-Construction	0	842	1,248	33	0	0	0	395	2,518
Total	212	1,597	1,548	183	0	0	0	395	3,935

Budget Risk Assessment		Schedule Risk Assessment	
Estimate Type:	Construction	Schedule Risk Level:	Low
Budget Risk Level:	Medium	2016 Budget Schedule:	2023
		2017 Budget Schedule:	2023

Project Risk Assessment
Potential for risk of increased cost as system expands and integration and support require more resources to meet system compliance standards.

<b>600033</b>	<b>Link CCTV System Upgrade</b>	<b>Managed by: Operations</b>
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Scope: Upgrade existing Link light rail Closed-Circuit Television (CCTV) NiceVision system at 16 stations and Link Operations and Maintenance Facility with digital cameras to be compatible with the new equipment installed for University Link and South 200th Link extensions.

Changes to authorized project allocation since 2016: \$2.15 million for digital cameras and equipment, and an additional \$240 thousand grant funding for video monitoring equipment at Union Station was added via Resolution No. R2016-37.

Authorized Project Allocation to Date (in \$000s of \$ YOE dollars)	Total Financial Plan Project Estimate (in \$000s of \$ 2016)
Phase Gate Passed: N/A	2008 Cost Estimate: N/A
Baseline: \$0	2016 Cost Estimate: N/A
2016 TIP: \$700	2017 Cost Estimate: N/A
2017 TIP: \$3,094	

**Cashflow (in thousands)**

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
North King	418	1,601	50	0	0	0	0	0	2,070
South King	207	792	25	0	0	0	0	0	1,024
Total	626	2,394	74	0	0	0	0	0	3,094

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	0	20	0	0	0	0	0	0	20
30-Final Design+Specifications	0	50	0	0	0	0	0	0	50
50-Construction	626	2,324	74	0	0	0	0	0	3,024
Total	626	2,394	74	0	0	0	0	0	3,094

Budget Risk Assessment	Schedule Risk Assessment
Estimate Type: Scoping	Schedule Risk Level: Low
Budget Risk Level: Low	2016 Budget Schedule: 2016
	2017 Budget Schedule: 2018

Project Risk Assessment
Completion of the project in 2017 requires a Q1 2017 contract award to ensure all stations can be scheduled for installation of a large volume of cameras and integration into the agency CCTV system.

<b>700695</b>	<b>Access Control Card Upgrade</b>	<b>Managed by: Operations</b>
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Scope: Upgrade the existing access control system that manages the secure access to Sound Transit Link facilities. The existing General Electric (GE) Secure Perfect system was installed in 2008 and is no longer supported by GE. A new system will allow for a single access control platform for all of the agency's Link facilities.

Changes to authorized project allocation since 2016: \$1.114 million new project

Authorized Project Allocation to Date (in \$000s of \$ YOE dollars)	Total Financial Plan Project Estimate (in \$000s of \$ 2016)
Phase Gate Passed: <span style="float: right;">N/A</span>	
Baseline: <span style="float: right;">\$0</span>	2008 Cost Estimate: <span style="float: right;">N/A</span>
2016 TIP: <span style="float: right;">\$0</span>	2016 Cost Estimate: <span style="float: right;">N/A</span>
2017 TIP: <span style="float: right;">\$1,114</span>	2017 Cost Estimate: <span style="float: right;">N/A</span>

**Cashflow (in thousands)**

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
North King	0	857	0	0	0	0	0	0	857
South King	0	257	0	0	0	0	0	0	257
Total	0	1,114	0	0	0	0	0	0	1,114

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
50-Construction	0	1,114	0	0	0	0	0	0	1,114
Total	0	1,114	0	0	0	0	0	0	1,114

Budget Risk Assessment	Schedule Risk Assessment
Estimate Type: <span style="float: right;">Construction</span>	Schedule Risk Level: <span style="float: right;">Low</span>
Budget Risk Level: <span style="float: right;">Low</span>	2016 Budget Schedule:
	2017 Budget Schedule: <span style="float: right;">2019</span>

Project Risk Assessment
The risk of budget or schedule changes are minimal given the scope of the project.

<b>700704</b>	<b>Link Radio Upgrade</b>	<b>Managed by: Operations</b>
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Scope: Install upgraded Distributed Antenna System (DAS) in two Link tunnel systems - Downtown Seattle Transit Tunnel and Beacon Hill Tunnel.

Changes to authorized project allocation since 2016: \$1 million new project.

Authorized Project Allocation to Date (in \$000s of \$ YOE dollars)	Total Financial Plan Project Estimate (in \$000s of \$ 2016)
Phase Gate Passed:	
Baseline: \$0	2008 Cost Estimate: N/A
2016 TIP: \$0	2016 Cost Estimate: N/A
2017 TIP: \$1,000	2017 Cost Estimate: N/A

**Cashflow (in thousands)**

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
North King	0	668	0	0	0	0	0	0	668
South King	0	332	0	0	0	0	0	0	332
Total	0	1,000	0	0	0	0	0	0	1,000

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	0	80	0	0	0	0	0	0	80
20-Prelim Engineering/Env Review	0	100	0	0	0	0	0	0	100
30-Final Design+Specifications	0	120	0	0	0	0	0	0	120
50-Construction	0	700	0	0	0	0	0	0	700
Total	0	1,000	0	0	0	0	0	0	1,000

Budget Risk Assessment	Schedule Risk Assessment
Estimate Type: Construction	Schedule Risk Level: Low
Budget Risk Level: Low	2016 Budget Schedule:
	2017 Budget Schedule: 2018

Project Risk Assessment
There is a low potential for a radio system failure during the installation of the upgraded system which would prevent Link operations in the tunnels until fixed.

<b>700705</b>	<b>Link Bridge Repairs</b>	<b>Managed by: Operations</b>
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Scope: Repair bridge structures within the Tukwila Freeway Route and E-3 Busway segments of the Link light rail alignment to correct areas of deterioration that have developed over time as a result of weather, change of seasons and vibration caused by the operating trains.

Changes to authorized project allocation since 2016: \$550 thousand for new project.

Authorized Project Allocation to Date (in \$000s of \$ YOE dollars)	Total Financial Plan Project Estimate (in \$000s of \$ 2016)
Phase Gate Passed: <span style="float: right;">None</span>	
Baseline:	2008 Cost Estimate: <span style="float: right;">N/A</span>
2016 TIP: <span style="float: right;">\$0</span>	2016 Cost Estimate: <span style="float: right;">N/A</span>
2017 TIP: <span style="float: right;">\$550</span>	2017 Cost Estimate: <span style="float: right;">N/A</span>

**Cashflow (in thousands)**

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
North King	0	550	0	0	0	0	0	0	550
Total	0	550	0	0	0	0	0	0	550

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	0	50	0	0	0	0	0	0	50
30-Final Design+Specifications	0	50	0	0	0	0	0	0	50
50-Construction	0	450	0	0	0	0	0	0	450
Total	0	550	0	0	0	0	0	0	550

Budget Risk Assessment	Schedule Risk Assessment
Estimate Type: <span style="float: right;">Initial Estimate</span>	Schedule Risk Level: <span style="float: right;">Medium</span>
Budget Risk Level: <span style="float: right;">Medium</span>	2016 Budget Schedule:
	2017 Budget Schedule: <span style="float: right;">2017</span>

**Project Risk Assessment**

There is a limited repair window to affect repairs without impacting light rail operations requiring effective schedule and efficient execution of repairs.

**700728**

**Link Station Braided Tile Replacement**

**Managed by: Operations**

Scope: Demolition and reinstallation of braided wayfinding tile at five Link light rail stations: Stadium, Sodo, Columbia City, Othello, and Rainier Beach.

Changes to authorized project allocation since 2016 - None.

Authorized Project Allocation to Date (in \$000s of \$ YOE dollars)		Total Financial Plan Project Estimate (in \$000s of \$ 2016)	
Phase Gate Passed:	N/A	2008 Cost Estimate:	N/A
Baseline:		2016 Cost Estimate:	N/A
2016 TIP:	\$435	2017 Cost Estimate:	N/A
2017 TIP:	\$435		

**Cashflow (in thousands)**

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
North King	0	435	0	0	0	0	0	0	435
Total	0	435	0	0	0	0	0	0	435

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	0	22	0	0	0	0	0	0	22
50-Construction	0	413	0	0	0	0	0	0	413
Total	0	435	0	0	0	0	0	0	435

Budget Risk Assessment		Schedule Risk Assessment	
Estimate Type:	Initial Estimate	Schedule Risk Level:	Low
Budget Risk Level:	Low	2016 Budget Schedule:	2016
		2017 Budget Schedule:	2017

Project Risk Assessment
N/A



**700769**

**LRV Overhaul**

**Managed by: DECM**

Scope: Complete repairs of the gear units and traction motors on light rail vehicles (LRVs), and purchase materials, equipment, services, and labor necessary to complete repairs.

Repairs to the LRV fleet were completed in 2016; work to repair spare equipment is scheduled to be completed in 2017.

Changes to authorized project allocation since 2016: None.

Authorized Project Allocation to Date (in \$000s of \$ YOE dollars)		Total Financial Plan Project Estimate (in \$000s of \$ 2016)	
Phase Gate Passed:	N/A	2008 Cost Estimate:	N/A
Baseline:	\$0	2016 Cost Estimate:	N/A
2016 TIP:	\$5,000	2017 Cost Estimate:	N/A
2017 TIP:	\$5,000		

**Cashflow (in thousands)**

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
North King	1,365	1,980	0	0	0	0	0	0	3,345
South King	675	980	0	0	0	0	0	0	1,655
Total	2,041	2,959	0	0	0	0	0	0	5,000

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
70-Vehicles	2,041	2,959	0	0	0	0	0	0	5,000
Total	2,041	2,959	0	0	0	0	0	0	5,000

Budget Risk Assessment		Schedule Risk Assessment	
Estimate Type:	Initial Estimate	Schedule Risk Level:	Low
Budget Risk Level:	High	2016 Budget Schedule:	2016
		2017 Budget Schedule:	2017

**Project Risk Assessment**

Budget risk remains high given no agreement regarding the warranty coverage on repairs has been reached between manufacturer, supplier and Sound Transit.

<b>7X356</b>	<b>Tacoma Dome Station</b>	<b>Managed by: Operations</b>
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Scope: Provide financial support to address major maintenance requirement at Tacoma Dome Station per agreement with Pierce Transit.

Changes to authorized project allocation since 2016: None

Authorized Project Allocation to Date (in \$000s of \$ YOE dollars)	Total Financial Plan Project Estimate (in \$000s of \$ 2016)
Phase Gate Passed: <span style="float: right;">N/A</span>	
Baseline: <span style="float: right;">\$0</span>	2008 Cost Estimate: <span style="float: right;">N/A</span>
2016 TIP: <span style="float: right;">\$414</span>	2016 Cost Estimate: <span style="float: right;">N/A</span>
2017 TIP: <span style="float: right;">\$414</span>	2017 Cost Estimate: <span style="float: right;">N/A</span>

**Cashflow (in thousands)**

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
Pierce	0	414	0	0	0	0	0	0	414
Total	0	414	0	0	0	0	0	0	414

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
50-Construction	0	414	0	0	0	0	0	0	414
Total	0	414	0	0	0	0	0	0	414

Budget Risk Assessment	Schedule Risk Assessment
Estimate Type: <span style="float: right;">Fixed Contribution</span>	Schedule Risk Level: <span style="float: right;">Low</span>
Budget Risk Level: <span style="float: right;">Low</span>	2016 Budget Schedule: <span style="float: right;">2018</span>
	2017 Budget Schedule: <span style="float: right;">2018</span>

Project Risk Assessment

700770

Sounder Vehicle Overhaul Program

Managed by: Operations

Scope: Maintain, preserve, and extend the life of Sounder locomotives and cab car fleet. This program overhauls 11 locomotives of the Sounder fleet while upgrading technologies and emission efficiencies, truck overhauls of cab cars and HVAC upgrades to the same.

Changes to authorized project allocation since 2016: Additional work to include head end power controllers overhaul \$550 thousand and passenger car door rehabilitation \$250 thousand.

Authorized Project Allocation to Date (in \$000s of \$ YOE dollars)		Total Financial Plan Project Estimate (in \$000s of \$ 2016)	
Phase Gate Passed:	N/A	2008 Cost Estimate:	N/A
Baseline:	\$0	2016 Cost Estimate:	N/A
2016 TIP:	\$24,301	2017 Cost Estimate:	N/A
2017 TIP:	\$25,101		

Cashflow (in thousands)

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
Snohomish	1,941	911	587	0	0	0	0	0	3,439
South King	7,423	3,485	2,245	0	0	0	0	0	13,153
Pierce	4,802	2,255	1,452	0	0	0	0	0	8,509
Total	14,166	6,652	4,284	0	0	0	0	0	25,101

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
50-Construction	8,265	0	0	0	0	0	0	0	8,265
70-Vehicles	5,901	6,652	4,284	0	0	0	0	0	16,836
Total	14,166	6,652	4,284	0	0	0	0	0	25,101

Budget Risk Assessment		Schedule Risk Assessment	
Estimate Type:	Initial Estimate	Schedule Risk Level:	Low
Budget Risk Level:	Low	2016 Budget Schedule:	2018
		2017 Budget Schedule:	2018

Project Risk Assessment
Multiple Sounder vehicles being overhauled or under going major repairs continue to run the risk of cost overruns or schedule delays.

700771

Station Midlife Refurbishment Program

Managed by: Operations

Scope: Provide rehabilitation and mid-life maintenance for Sound Transit facilities that have been in service for fifteen years or longer.

Changes to authorized project allocation since 2016: Increase project budget by \$245 thousand for TIBS (Tukwila International Blvd Station) bus loop rehabilitation project.

Authorized Project Allocation to Date (in \$000s of \$ YOE dollars)		Total Financial Plan Project Estimate (in \$000s of \$ 2016)	
Phase Gate Passed:	N/A	2008 Cost Estimate:	N/A
Baseline:	\$0	2016 Cost Estimate:	N/A
2016 TIP:	\$1,450	2017 Cost Estimate:	N/A
2017 TIP:	\$1,695		

Cashflow (in thousands)

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
South King	720	411	0	0	0	0	0	0	1,131
Pierce	359	205	0	0	0	0	0	0	565
Total	1,079	616	0	0	0	0	0	0	1,695

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	8	0	0	0	0	0	0	0	8
50-Construction	1,072	616	0	0	0	0	0	0	1,688
Total	1,079	616	0	0	0	0	0	0	1,695

Budget Risk Assessment		Schedule Risk Assessment	
Estimate Type:	Planning	Schedule Risk Level:	Medium
Budget Risk Level:	Low	2016 Budget Schedule:	2017
		2017 Budget Schedule:	2017

Project Risk Assessment
Undefined scope of work at the various station locations could affect both the budget and schedule.

**7X701**

**ST Express Fleet Replacement**

**Managed by: Operations**

Scope: Funds the bus fleet replacement program for ST Express.

Current Assumptions: FTA guidelines indicate that buses are to be replaced no earlier than either 12 years of service or 500,000 miles. Due to the unique service characteristics of the ST Express fleet, Sound Transit buses typically reach 500,000 miles after only 10 years of operations yet Sound Transit often keeps buses for several years past the minimal deadline. Replacement decisions are informed by specific fleet performance in consultation with our operating partner agencies. During the period from 2017-2022 150 buses will be replaced. The fleet size as of 2017 is 318.

Changes to authorized project allocation since 2016: None.

Authorized Project Allocation to Date (in \$000s of \$ YOE dollars)		Total Financial Plan Project Estimate (in \$000s of \$ 2016)	
Phase Gate Passed:	N/A	2008 Cost Estimate:	N/A
Baseline:	\$0	2016 Cost Estimate:	N/A
2016 TIP:	\$189,269	2017 Cost Estimate:	N/A
2017 TIP:	\$189,269		

**Cashflow (in thousands)**

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
Snohomish	20,856	4	8,913	0	0	3,538	0	0	33,311
South King	11,968	3	5,115	0	0	2,030	0	0	19,116
East King	54,509	12	23,296	0	0	9,247	0	0	87,064
Pierce	31,165	7	13,319	0	0	5,287	0	0	49,778
<b>Total</b>	<b>118,498</b>	<b>25</b>	<b>50,644</b>	<b>0</b>	<b>0</b>	<b>20,102</b>	<b>0</b>	<b>0</b>	<b>189,269</b>

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
50-Construction	47	0	0	0	0	0	0	0	47
70-Vehicles	118,451	25	50,644	0	0	20,102	0	0	189,222
<b>Total</b>	<b>118,498</b>	<b>25</b>	<b>50,644</b>	<b>0</b>	<b>0</b>	<b>20,102</b>	<b>0</b>	<b>0</b>	<b>189,269</b>

Budget Risk Assessment		Schedule Risk Assessment	
Estimate Type:	Planning	Schedule Risk Level:	Low
Budget Risk Level:	Medium	2016 Budget Schedule:	2021
		2017 Budget Schedule:	2021

**Project Risk Assessment**

Budget risk is a concern as the cost estimates and vehicle types are annually reviewed as replacements are identified and the agency adopts on-board technologies to be included in future replacements.

**7X740**

**Small Works Program**

**Managed by: Operations**

Scope: Projects completed under the small works program include modification/repairs of operating facilities and systems with an estimated total cost of less than \$200,000 per project. The budget for this program is based on number of sites maintained, age of facilities, and amount of use.

Changes to authorized project allocation since 2016: Project budget increased by \$3.4 million which includes extending the program another year.

Authorized Project Allocation to Date (in \$000s of \$ YOE dollars)		Total Financial Plan Project Estimate (in \$000s of \$ 2016)	
Phase Gate Passed:	N/A	2008 Cost Estimate:	N/A
Baseline:	\$0	2016 Cost Estimate:	N/A
2016 TIP:	\$7,942	2017 Cost Estimate:	N/A
2017 TIP:	\$11,308		

**Cashflow (in thousands)**

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
Snohomish	411	399	194	131	129	127	79	0	1,470
North King	475	461	223	151	149	147	91	0	1,696
South King	475	461	223	151	149	147	91	0	1,696
East King	601	584	283	191	188	186	115	0	2,148
Pierce	1,202	1,168	566	382	377	372	230	0	4,297
Total	3,164	3,073	1,489	1,006	992	979	604	0	11,308

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	406	70	0	0	0	0	0	0	475
20-Prelim Engineering/Env Review	72	78	0	0	0	0	0	0	150
30-Final Design+Specifications	39	45	0	0	0	0	0	0	84
35-Third Party	0	156	0	0	0	0	0	0	156
50-Construction	2,412	2,725	1,489	1,006	992	979	604	0	10,207
70-Vehicles	236	0	0	0	0	0	0	0	236
Total	3,164	3,073	1,489	1,006	992	979	604	0	11,308

Budget Risk Assessment		Schedule Risk Assessment	
Estimate Type:	Scoping	Schedule Risk Level:	Low
Budget Risk Level:	Low	2016 Budget Schedule:	2020
		2017 Budget Schedule:	2022

Project Risk Assessment
Project risks are minimal, however, the volume of small works eligible projects and the limits of internal resources could impact the delivery of project requests.

**870101**

**IT Transit Systems**

**Managed by: FIT**

Scope: Maintain, upgrade and replace multiple computer and technology-based systems at Sounder stations and ST Express transit centers to keep them safe, secure, and functional for our customers.

Systems maintained include: Sounder Stations & Transit Centers - closed circuit television access control and customer emergency stations; Sounder - passenger information systems, automated passenger counters and variable message signage.

Changes to authorized project allocation since 2016: None.

Authorized Project Allocation to Date (in \$000s of \$ YOE dollars)		Total Financial Plan Project Estimate (in \$000s of \$ 2016)	
Phase Gate Passed:	N/A	2008 Cost Estimate:	N/A
Baseline:	\$0	2016 Cost Estimate:	N/A
2016 TIP:	\$5,905	2017 Cost Estimate:	N/A
2017 TIP:	\$5,905		

**Cashflow (in thousands)**

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
Systemwide	224	355	305	550	343	840	486	2,802	5,905
Total	224	355	305	550	343	840	486	2,802	5,905

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
50-Construction	224	355	305	550	343	840	486	2,802	5,905
Total	224	355	305	550	343	840	486	2,802	5,905

Budget Risk Assessment		Schedule Risk Assessment	
Estimate Type:	Construction	Schedule Risk Level:	Medium
Budget Risk Level:	Medium	2016 Budget Schedule:	2023
		2017 Budget Schedule:	2023

Project Risk Assessment
Information technology is ever changing and could adversely affect both the cost of the equipment and the availability of the equipment and technology.

## Administrative

Administrative projects are not specific to any transit mode or capital program. Projects fund disposition of surplus real estate, procurement of administrative equipment, facilities, and technology, as well as administrative support critical to the successful operation of the agency. Administrative costs that support projects are charged to construction in progress and capitalized with the resulting assets.

### 2017 Administrative Project Highlights

- Replace eight non-revenue vehicles used by administrative staff and add 7 vehicles to the fleet in support of increased pool usage and direct need due to increased program activity.
- Commence a three year program to replace the roof top cooling towers and 98 variable air volume exchangers at Union Station.
- Install Americans with Disabilities Act (ADA) compliant entrance to the south access of Union Station.
- Continue landscape and wetland hydrology mitigation and maintenance activities at selected Sound Transit properties.
- Migrate SharePoint to Microsoft 365 Cloud.
- Implement stringent information security controls and monitoring.
- Upgrade Contract Manager software in support of the procurement division.
- Investigate the potential of a business intelligence system to enhance usability of agency and industry data.

### CHANGES TO AUTHORIZED PROJECT ALLOCATIONS TO DATE (in thousands)

Project	Reason	Budget Type	Explanation	Change
<b>OTHER</b>				
Administrative Capital	Increase in scope	Program	Tenant improvements and furnishings for new leased office space.	\$3,800



## 2017 Cashflow by Budget Approval

(in thousands)

### Administrative

#### ALL MODES

Project Number and Name	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
<b>Program</b>									
0X002 Agency Administration Operating	312,146	72,374	71,026	71,885	77,595	77,676	51,967	57,249	791,918
600025 Environmental Mitigation, Monitoring & Maintenance	456	165	138	110	0	0	0	554	1,423
802000 Administrative Capital	6,545	6,526	856	781	645	670	667	594	17,284
803800 Information Technology Program	13,696	2,274	2,371	2,456	2,403	2,140	2,148	4,748	32,235
804500 Surplus Property Disposition	273	183	252	0	0	0	0	0	708
<b>Subtotal</b>	333,114	81,521	74,643	75,232	80,644	80,486	54,781	63,146	843,568
<b>Total</b>	\$333,114	\$81,521	\$74,643	\$75,232	\$80,644	\$80,486	\$54,781	\$63,146	\$843,568

**2017 Cashflow by Subarea**  
(in thousands)

Administrative  
ALL MODES

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
1 - Snohomish	80	29	24	19	0	0	0	97	249
2 - North King	273	183	252	0	0	0	0	0	708
3 - South King	283	102	86	68	0	0	0	343	882
4 - East King	27	10	8	6	0	0	0	32	83
5 - Pierce	67	24	20	16	0	0	0	81	209
6 - Systemwide	332,386	81,173	74,253	75,122	80,644	80,486	54,781	62,592	841,437
<b>Total</b>	<b>\$333,114</b>	<b>\$81,521</b>	<b>\$74,643</b>	<b>\$75,232</b>	<b>\$80,644</b>	<b>\$80,486</b>	<b>\$54,781</b>	<b>\$63,146</b>	<b>\$843,568</b>

**2017 Cashflow by Phase**  
(in thousands)

Phase # and Description	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
02-Operation+Maintenance-Agency	244	160	10	0	254	0	0	32	700
09-Admin Capital	18,857	8,387	2,970	2,794	2,644	2,649	2,655	4,779	45,735
10-Agency Administration	313,072	72,585	71,223	72,168	77,595	77,676	51,967	57,315	793,602
20-Prelim Engineering/Env Review	672	165	138	220	100	110	110	973	2,488
40-Row Acquisition+Permits	270	174	252	0	0	0	0	0	696
90-Contingency	0	50	50	50	50	50	50	47	347
<b>Total</b>	<b>\$333,114</b>	<b>\$81,521</b>	<b>\$74,643</b>	<b>\$75,232</b>	<b>\$80,644</b>	<b>\$80,486</b>	<b>\$54,781</b>	<b>\$63,146</b>	<b>\$843,568</b>

Scope: Funds administrative overhead expenses that are charged to capital projects and overhead expenses that are not allocated to either projects or transit operations. Overhead expenses allocated to projects are included in the capitalized cost of the resulting assets. Unallocated overhead expenses are included in general and administrative expenses for the agency.

The agency uses a cost allocation plan approved by the Federal Transit Administration. Use of this approved model makes the majority of indirect project expenses eligible for federal grant funding. The project timeline coincides with that of the ST2 program: 2010 - 2023.

Changes to authorized project allocation since 2016: None.

Authorized Project Allocation to Date (in \$000s of \$ YOE dollars)		Total Financial Plan Project Estimate (in \$000s of \$ 2016)	
Phase Gate Passed:	N/A	2008 Cost Estimate:	N/A
Baseline:	\$0	2016 Cost Estimate:	N/A
2016 TIP:	\$791,918	2017 Cost Estimate:	N/A
2017 TIP:	\$791,918		

Cashflow (in thousands)

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
Systemwide	312,146	72,374	71,026	71,885	77,595	77,676	51,967	57,249	791,918
Total	312,146	72,374	71,026	71,885	77,595	77,676	51,967	57,249	791,918

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	312,146	72,374	71,026	71,885	77,595	77,676	51,967	57,249	791,918
Total	312,146	72,374	71,026	71,885	77,595	77,676	51,967	57,249	791,918

Budget Risk Assessment		Schedule Risk Assessment	
Estimate Type:	Planning	Schedule Risk Level:	Low
Budget Risk Level:	Low	2016 Budget Schedule:	2023
		2017 Budget Schedule:	2023

Project Risk Assessment
N/A

**600025 Environmental Mitigation, Monitoring & Maintenance Managed by: PEPD**

Scope: Monitor and maintain post-construction environmental mitigation including wetland hydrology, plant establishment, and other site features. Duration depends upon permit conditions and may be 10 years and/or may last for the life of the property.

Changes to authorized project allocation since 2016: None.

Authorized Project Allocation to Date (in \$000s of \$ YOE dollars)		Total Financial Plan Project Estimate (in \$000s of \$ 2016)	
Phase Gate Passed:	N/A	2008 Cost Estimate:	N/A
Baseline:	\$0	2016 Cost Estimate:	N/A
2016 TIP:	\$1,423	2017 Cost Estimate:	N/A
2017 TIP:	\$1,423		

**Cashflow (in thousands)**

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
Snohomish	80	29	24	19	0	0	0	97	249
South King	283	102	86	68	0	0	0	343	882
East King	27	10	8	6	0	0	0	32	83
Pierce	67	24	20	16	0	0	0	81	209
Total	456	165	138	110	0	0	0	554	1,423

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
20-Prelim Engineering/Env Review	456	165	138	110	0	0	0	554	1,423
Total	456	165	138	110	0	0	0	554	1,423

Budget Risk Assessment		Schedule Risk Assessment	
Estimate Type:	Construction	Schedule Risk Level:	Low
Budget Risk Level:	Low	2016 Budget Schedule:	2030
		2017 Budget Schedule:	2030

Project Risk Assessment
N/A

**802000**

**Administrative Capital**

**Managed by: FIT**

Scope: Funds capital expenditures for administrative assets that support agency staff, including administrative facilities, non-revenue administrative fleet, office equipment, space planning, and furnishings.

Changes to authorized project allocation since 2016: Increased by \$3.8 million per budget revision adopted by Resolution No. R2016-37.

Authorized Project Allocation to Date (in \$000s of \$ YOE dollars)		Total Financial Plan Project Estimate (in \$000s of \$ 2016)	
Phase Gate Passed:	N/A	2008 Cost Estimate:	N/A
Baseline:	\$0	2016 Cost Estimate:	N/A
2016 TIP:	\$13,484	2017 Cost Estimate:	N/A
2017 TIP:	\$17,284		

**Cashflow (in thousands)**

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
Systemwide	6,545	6,526	856	781	645	670	667	594	17,284
Total	6,545	6,526	856	781	645	670	667	594	17,284

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
09-Admin Capital	6,545	6,476	806	731	595	620	617	548	16,937
90-Contingency	0	50	50	50	50	50	50	47	347
Total	6,545	6,526	856	781	645	670	667	594	17,284

Budget Risk Assessment		Schedule Risk Assessment	
Estimate Type:	Planning	Schedule Risk Level:	Low
Budget Risk Level:	Low	2016 Budget Schedule:	2023
		2017 Budget Schedule:	2023

Project Risk Assessment
N/A

**803800**

**Information Technology Program**

**Managed by: FIT**

Scope: Support agencywide hardware and software infrastructure, develop and implement technology solutions to improve administrative efficiency through 2023.

Changes to authorized project allocation since 2016: None.

Board Approved Capital Budget (in thousands of YOY dollars)		ST2 Total Project Cost Estimate (in thousands of 2016 dollars)	
Phase Gate Passed:	N/A	2008 Cost Estimate:	N/A
Baseline:	\$0	2016 Cost Estimate:	N/A
2016 TIP:	\$32,235	2017 Cost Estimate:	N/A
2017 TIP:	\$32,235		

**TIP Cashflow (in thousands)**

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
Systemwide	13,696	2,274	2,371	2,456	2,403	2,140	2,148	4,748	32,235
Total	13,696	2,274	2,371	2,456	2,403	2,140	2,148	4,748	32,235

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
02-Operation+Maintenance-Agency	244	160	10	0	254	0	0	32	700
09-Admin Capital	12,312	1,911	2,164	2,063	2,049	2,030	2,038	4,231	28,798
10-Agency Administration	924	203	197	283	0	0	0	66	1,672
20-Prelim Engineering/Env Review	216	0	0	110	100	110	110	419	1,065
Total	13,696	2,274	2,371	2,456	2,403	2,140	2,148	4,748	32,235

Budget Risk Assessment		Schedule Risk Assessment	
Estimate Type:	Conceptual Engineering	Schedule Risk Level:	High
Budget Risk Level:	High	2016 Budget Schedule:	2023
		2017 Budget Schedule:	2023

**Project Risk Assessment**

Future year forecasts reflect initial planning estimates so costs are subject to change. Schedules are dependent on staff capacity and the specific application or

**804500**

**Surplus Property Disposition**

**Managed by: DECM**

Scope: Prepare surplus properties for sale that due to their size or location do not lend themselves to Transit-Oriented Development (TOD) opportunities. Surplus properties represent remnant properties that may have been used during construction or were acquired and no longer needed for transit use.

Changes to authorized project allocation since 2016: None.

Authorized Project Allocation to Date (in \$000s of \$ YOE dollars)		Total Financial Plan Project Estimate (in \$000s of \$ 2016)	
Phase Gate Passed:	N/A	2008 Cost Estimate:	N/A
Baseline:	\$0	2016 Cost Estimate:	N/A
2016 TIP:	\$708	2017 Cost Estimate:	N/A
2017 TIP:	\$708		

**Cashflow (in thousands)**

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
North King	273	183	252	0	0	0	0	0	708
Total	273	183	252	0	0	0	0	0	708

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	2	9	0	0	0	0	0	0	12
40-Row Acquisition+Permits	270	174	252	0	0	0	0	0	696
Total	273	183	252	0	0	0	0	0	708

Budget Risk Assessment		Schedule Risk Assessment	
Estimate Type:	Planning	Schedule Risk Level:	Low
Budget Risk Level:	Low	2016 Budget Schedule:	2017
		2017 Budget Schedule:	2017

Project Risk Assessment
N/A

# Reserves

The 2017 TIP includes history and forecasts for reserve fund contributions through 2023 to support emergencies as well as unplanned expenditures.

### Emergency/Loss

While the agency maintains a comprehensive insurance program, the policies do contain retentions (deductibles), which the agency would have to cover in the event of an insurable loss. In such instances, the Board could authorize the use of the emergency/loss fund on a case-by-case basis.

### Insurance Systemwide

The insurance systemwide reserve is forecasted to be made available to partially pay for builders' risk insurance in conjunction with funds provided by building contractors.

### Operations & Maintenance

Sound Transit's financial policies require the agency to maintain an operation and maintenance reserve equal to two months of department operating expenses, including costs allocated to transit modes and projects.

### Systemwide Contingency

The systemwide contingency is forecasted as part of the Sound Move program and supplemented in the ST2 plan. This fund is for use by the Board to deal with any unforeseen events.

### AGENCY RESERVE SUMMARY (in millions)

	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
Emergency Loss	\$15	\$3	\$3	\$3	\$3	\$3	\$4	\$4	\$38
Insurance Systemwide	0	0	6	6	6	6	0	0	23
Operations & Maintenance	0	68	0	0	0	0	0	0	68
Systemwide Contingency	0	0	5	0	0	0	0	0	5
Capital Replacement	317	0	0	0	0	0	0	0	317
<b>Total</b>	<b>\$332</b>	<b>\$71</b>	<b>\$14</b>	<b>\$9</b>	<b>\$9</b>	<b>\$9</b>	<b>\$4</b>	<b>\$4</b>	<b>\$451</b>

### Capital Replacement

The agency maintains a minimum \$300.0 million reserve for unanticipated expenditures necessary to keep the system in good working condition.

In 2015, the Sound Transit Board adopted an Asset Management Policy establishing guidelines for forecasting and budgeting capital replacement and lifecycle maintenance to ensure the regional system is maintained in a state of good repair. The following are financial elements of the policy:

- \$300 million minimum Capital Replacement Reserve to be maintained by the agency for unanticipated or emergency capital replacements. The reserve balance is currently \$316.8 million.
- A rolling 40-year State of Good Repair Forecast (SGRF) will inform the inclusion of a 6 year funding of the replacement of agency assets and major mid-life maintenance, which will be included annually in the TIP. Independent assessments of the plan will be conducted every five years. The six year finding forecast is provided in the Reserve table.
- Appendix C provides a more detailed explanation of the policy and the categories of assets accounting for the financial set asides.





# Appendix A – Sound Transit 2 Cost Estimates

The agency maintains cost estimates for all of its capital projects that are funded in the agency's financial plan. These estimates are updated as new engineering, right-of-way, public outreach, and other project information are developed. Project cost estimates are updated prior to seeking Board authorization of budgets for preliminary engineering, final design and right-of-way acquisition, and baseline budget, which includes total project costs and construction.

ST2 cost estimates were initially developed and reported in 2007 constant-year dollars. To enable comparisons between cost estimates, the figures in this appendix have been updated to 2015 constant-year dollars based on the agency's August 2015 inflation forecasts. The table on the next page includes the following information:

- 2008 cost estimates are from the initial ST2 plan approved by voters in November 2008.
- 2016 cost estimates match the proposed 2016 TIP.
- 2017 cost estimates include all ST2 projects currently funded in the agency's financial plan.

The changes to the cost estimates between 2016 and 2017 include:

- The establishment of the Auburn and Kent Station Access Improvement projects to improve facility access and parking and sidewalk improvements for rider access to the station and platforms. Deferred during the program realignment process in 2010, the Board reestablished the projects in 2016.
- Increasing ST Express Fleet Expansion by adding 11 buses to support ridership demands and congestion impacts during peak hours.
- Increasing the Link Maintenance Facility also known as the Operations and Maintenance Facility (OMF) – East to address increased scope and an ambitious schedule.

*U Link opening day in March 2016*



ST2 COST ESTIMATES  
(in thousands/constant 2016 dollars)

	2008 Estimate	Inc / (Dec)	2016 Estimate	Inc / (Dec)	2017 Estimate
<b>Link Light Rail</b>					
East Link	\$ 3,545,597	\$ (256,746)	\$ 3,288,852	\$ -	\$ 3,288,852
Downtown Redmond PE	\$ -	-	\$ 18,422	-	\$ 18,422
Northgate Link Extension	\$ 1,853,049	164,335	\$ 2,017,384	-	\$ 2,017,384
Lynnwood Link Extension	\$ 1,769,504	(261,533)	\$ 1,507,972	-	\$ 1,507,972
First Hill Link Connector	\$ 140,663	(1,368)	\$ 139,295	-	\$ 139,295
South 200th Street Link Extension	\$ 430,859	(17,778)	\$ 413,082	-	\$ 413,082
South Corridor HCT - S200th to KDM Rd	\$ 525,433	(59,651)	\$ 465,782	-	\$ 465,782
South Corridor HCT - KDM Rd to S 272nd St	\$ 571,070	(571,070)	\$ -	-	\$ -
HCC to Tacoma Dome - P/E & ROW	\$ 54,491	(54,491)	\$ -	-	\$ -
South Corridor Alternatives Analysis	\$ 84,434	(81,301)	\$ 3,133	-	\$ 3,133
Tacoma Link Expansion	\$ 106,678	37,759	\$ 144,436	-	\$ 144,436
Link Maintenance & Storage	\$ 320,432	(50,515)	\$ 269,918	144,005	\$ 413,922
Link Fleet Expansion	\$ 594,231	56,115	\$ 650,346	-	\$ 650,346
<b>Subtotal Link Light Rail</b>	<b>\$ 9,996,443</b>	<b>(1,096,244)</b>	<b>\$ 8,918,621</b>	<b>144,005</b>	<b>\$ 9,062,626</b>
<b>Souder Commuter Rail</b>					
Station Access & Demand Study	\$ 90,051	(24,805)	\$ 65,246	-	\$ 65,246
Sumner Station Improvements	\$ 52,034	(4,584)	\$ 47,449	-	\$ 47,449
Puyallup Station Improvements	\$ 73,587	(11,332)	\$ 62,254	-	\$ 62,254
Lakewood Station Improvements	\$ 46,948	(6,994)	\$ 39,953	-	\$ 39,953
Kent Station Improvements	\$ 33,115	(33,114.72)	\$ -	33,115	\$ 33,115
Auburn Station Improvements	\$ 34,812	(34,812.06)	\$ -	34,812	\$ 34,812
Souder Yard & Shop Facility	\$ 186,150	(23,632)	\$ 162,518	-	\$ 162,518
Souder Yard Expansion	\$ -	22,302	\$ 22,302	-	\$ 22,302
Tukwila Permanent Station	\$ 43,236	8,892	\$ 52,128	-	\$ 52,128
Edmonds Permanent Station	\$ 28,990	(28,990)	\$ -	-	\$ -
Seattle to Lakewood - Expanded Service	\$ 225,229	59,874	\$ 285,103	-	\$ 285,103
Souder ST2 Fleet Expansion	\$ 37,526	(6,533)	\$ 30,993	-	\$ 30,993
Reservation Junction - Track & Signal	\$ 80,436	(12,419)	\$ 68,017	-	\$ 68,017
Tacoma Track & Signal	\$ 32,475	(325)	\$ 32,150	-	\$ 32,150
Platform Extensions - South King / Pierce	\$ 63,974	(63,974)	\$ -	-	\$ -
Eastside Rail Partnership	\$ 58,635	(58,634)	\$ 1	-	\$ 1
<b>Subtotal Souder Commuter Rail</b>	<b>\$ 1,087,198</b>	<b>(219,082)</b>	<b>\$ 868,116</b>	<b>67,927</b>	<b>\$ 936,042</b>
<b>Regional Express</b>					
ST Express Bus Base	\$ 210,557	(6,920)	\$ 203,637	-	\$ 203,637
Mid-Day Bus Storage	\$ -	3,542	\$ 3,542	-	\$ 3,542
ST Express Fleet Expansion	\$ 41,790	4,255	\$ 46,045	12,971	\$ 59,016
ST Express Capital Reserve Program	\$ 28,678	(28,678)	\$ -	-	\$ -
I-90 Contribution	\$ 58,455	-	\$ 58,455	-	\$ 58,455
Burien - Parking Garage / Transit Center	\$ 17,374	(1,376)	\$ 15,999	-	\$ 15,999
Bothell - Parking Garage / Transit Center	\$ 6,495	(300)	\$ 6,195	-	\$ 6,195
<b>Subtotal Regional Express</b>	<b>\$ 363,350</b>	<b>(29,477)</b>	<b>\$ 333,873</b>	<b>12,971</b>	<b>\$ 346,844</b>
<b>Other</b>					
ST3 Planning	\$ 64,969	(13,961)	\$ 51,008	-	\$ 51,008
HCT Corridor Planning Studies	\$ -	60	\$ 60	-	\$ 60
Central and East HCT Study	\$ -	2,141	\$ 2,141	-	\$ 2,141
ST Art Program	\$ -	29,003	\$ 29,003	-	\$ 29,003
<b>Subtotal Other</b>	<b>\$ 64,969</b>	<b>17,243</b>	<b>\$ 82,212</b>	<b>-</b>	<b>\$ 82,212</b>
<b>Total ST2 Cost Estimate</b>	<b>\$ 11,511,960</b>	<b>\$ (1,327,560)</b>	<b>\$ 10,202,822</b>	<b>\$ 224,903</b>	<b>\$ 10,427,725</b>

Note: The cost estimates included in the table above reflect the amount funded in the Agency's long-term Financial Plan. Projects proposed to proceed with only limited engineering activity are funded only to the extent that activity requires. Projects proposed to be suspended or deleted have no funding in the current Long-term Financial Plan.

# Appendix B – Sound Move Project Budgets

The agency has three voter-approved system expansion programs: Sound Move approved in 1996; Sound Transit 2 (ST2) approved in 2008; and Sound Transit 3 (ST3) approved in 2016. Appendix A reflects the cost estimates in constant-year dollars for all projects funded under the ST2 program. This appendix displays adopted project budgets in year-of-expenditure dollars for active Sound Move system expansion projects.

Project budgets for Sound Move projects were adopted as total project budgets/baseline budgets, since these projects pre-date the agency's Phase Gate process. As with the ST2 projects in Appendix A, Sound Move project budgets are shown for 2008, 2016, and 2017.

The changes between 2016 and 2017 include:

## Link Light Rail

- Initial Segment was closed in 2016.

## Regional Express

- 85th Corridor, Kirkland was closed in 2016.
- Federal Way Transit Center was closed in 2016.

Note: The I-90 Two-Way Transit and HOV Operations, Stage 3 project was baselined in 2014. This project is funded by Sound Move & ST2, Regional Express Reserve, and agency financial capacity.

### I-90 TWO-WAY AND HOV OPERATIONS, STAGE 3 TOTAL FUNDING (in thousands)

Sound Move	\$64,222
I-90 Contribution (ST2)	45,000
REX Program Reserve	27,126
Agency Financial Capacity	89,300
<b>Total Project Cost</b>	<b>\$225,648</b>

### ADOPTED ALLOCATIONS TO DATE FOR ACTIVE SOUND MOVE PROJECTS

Year of Expenditure (YOE) Dollars (in thousands)

	2008	Inc/(Dec)	2016	Inc/(Dec)	2017
<b><u>Link Light Rail</u></b>					
University Link	\$ 1,614,007	\$ 142,000	\$ 1,756,007	\$ -	\$ 1,756,007
<b>Total Link Light Rail</b>	<b>1,614,007</b>	<b>142,000</b>	<b>1,756,007</b>	<b>-</b>	<b>1,756,007</b>
<b><u>Souder Commuter Rail</u></b>					
M Street to Lakewood Track and Signal	73,601	7,053	80,654	-	80,654
D Street to M Street Track and Signal	76,025	82,237	158,262	-	158,262
Mukilteo Station, South Platform	9,371	8,942	18,313	-	18,313
Tukwila Station (see Notes)	-	-	-	-	-
<b>Total Souder Commuter Rail</b>	<b>158,997</b>	<b>98,232</b>	<b>257,229</b>	<b>-</b>	<b>257,229</b>
<b><u>Regional Express</u></b>					
I-90 2-Way Transit & HOV Op, Stage 3 (see note)	1,722	223,926	225,648	-	225,648
Kirkland Transit Center	13,300	(2,341)	10,959	-	10,959
<b>Total Regional Express</b>	<b>15,022</b>	<b>221,585</b>	<b>236,607</b>	<b>-</b>	<b>236,607</b>
S <i>T</i> art Program	18,100	16,100	34,200	-	34,200
<b>Total Active Sound Move Projects</b>	<b>\$ 1,806,126</b>	<b>\$ 477,917</b>	<b>\$ 2,284,043</b>	<b>\$ -</b>	<b>\$ 2,284,043</b>

Notes: Numbers may not add due to rounding.

Tukwila Station is a project recognized in ST2, but Sound Move did fund the project through Final Design.

I-90 2-Way Transit and HOV Op, Stage 3 is recognized in Sound Move, but ST2 contributed \$45 million of planned funding.

The agency used \$89.3 million of financial capacity to fully fund the project and the balance of the REX program reserve of \$27.2 million.

## Appendix C – State of Good Repair Forecast

In accordance with the agency asset management policy, the agency will maintain a rolling 40-year state of good repair forecast (SOGRF) for the purpose of advance funding for replacement of assets and major midlife maintenance. The full 40-year rolling forecast is included in the agency's finance plan to account for the use of long term revenues for the replacement of assets which is intended to reduce net borrowing costs to the agency. Additionally, an annual SOGRF spending forecast for the period 2017-2023 is displayed below.

The Capital Replacement Reserve (CRR) will be maintained and serve as a funding source for emergency or unexpected capital replacements.

The CRR balance will be maintained at a minimum of \$300 million and if used, must be replenished to the minimum level within 5 years. The current CRR balance is \$315 million.

The following table represents the two most current years of the 40-year rolling forecast. Below represents the two most current years forecast. The variance between 2015 and 2016 would be the increase in anticipated cost of replacing qualifying assets, as well as the anticipated addition of assets to the replacement schedule.

### STATE OF GOOD REPAIR FORECAST (in millions and in YOY)

40-year Rolling Forecast	2015-2014	2016-2015
Administrative Facilities	\$99	\$100
Track and Power	594	588
Transit Centers/Parking Lots	799	810
Stations/Platforms/Ped Bridges/Garages	578	601
O&M Facilities	424	425
Infrastructure	1,541	1,537
Rolling Stock	1,728	1,739
Fare Collection	216	213
Non-Revenue Fleet	16	16
Other	44	42
<b>Total</b>	<b>\$6,040</b>	<b>\$6,071</b>

The following table represents the annual state of good repair forecast for the period 2017-2023. The actual spending is represented in the TIP under the Rehabilitation and Replacement projects, for 2017 those projects total \$16.7 million. The variance between the forecast and the proposed spending is the timing of payments for bus replacements.

### STATE OF GOOD REPAIR (in millions)

	2017	2018	2019	2020	2021	2022	2023
<b>State of Good Repair Forecast</b>	<b>\$11</b>	<b>\$67</b>	<b>\$21</b>	<b>\$36</b>	<b>\$76</b>	<b>\$101</b>	<b>\$164</b>

# Appendix D – Reconciliation of the Proposed 2017 TIP to Adopted 2017 TIP

The TIP contains Board-approved allocations for active projects by phase and year of expenditure forecast. The Proposed TIP, and any revisions to it before the Board adopts the Budget and TIP, is approved by the annual budget resolution. Additional changes to the Proposed TIP arise from budget amendments approved as separate Board actions, in the time between publication of the Proposed and Adopted TIP, or from non-material error corrections. The 2017 TIP was adopted by Resolution No. R2016-37 on December 15, 2016. The TIP also includes summary level six year forecasts for Transit Mode expenses contained in the 2017 Service Implementation Plan (SIP).

There are three circumstances when the project allocation to date would change from the Proposed TIP to the Adopted TIP:

1. Budget revisions adopted by the annual budget resolution.
2. Amendments adopted between publication of the proposed and adopted TIP.
3. Non-material error corrections.

## 1. Budget revisions adopted by the annual budget resolution

Board committees reviewed and recommended for approval to the Board, budget revisions to project allocations to date published in the proposed TIP. These revisions were adopted by the annual budget resolution (**Resolution No. R2016-37, Attachment C**) and are shown below.

Project	Authorized Project Allocation as reported in Proposed TIP (\$000)	Revised Authorized Project Allocation (\$000)	Change to Allocation (\$000)	Comments
<b>SYSTEM EXPANSION - LINK</b>				
4X115 - LYNNWOOD LINK EXTENSION	487,861	488,361	500	Early permitting costs required in advance of project baseline.
400008 - TACOMA LINK EXPANSION	33,552	34,622	1,070	Allocation for early pre-construction and construction management costs in advance of the project baseline.
<b>SYSTEM EXPANSION - SOUNDER</b>				
300004 - SOUNDER MAINTENANCE BASE	6,841	8,968	2,127	To allow the flexibility to acquire property that may become available prior to any phase gate actions.
300018 - SUMNER STATION IMPROVEMENTS	6,472	17,042	1,502	To allow the flexibility to acquire property that may become available prior to any phase gate actions.
<b>REHABILITATION &amp; REPLACEMENT</b>				
400046 - CONVENTION PL SYSTEM RETROFIT		2,549	2,549	New project. Current power distribution infrastructure in the Convention Place/Pine Street area is scheduled for redevelopment making it necessary to relocate and decommission existing equipment located at the site.
600033 - LINK CCTV SYSTEM UPGRADE	2,854	3,094	240	To procure and install video monitoring system at Union Station aiding Security Operations Center in monitoring events in the field. This amount is the amount of the Homeland Security Grant for the procurement.
<b>ENHANCEMENT</b>				
400044 - LINK OP SYST ENHANCEMENT/UPGRD		1,400	1,400	New project to provide continued safe and reliable operation of existing Link systems via enhancements and upgrades identified based on system operational performance.
600045 - ON-DEMAND BIKE LOCKER PILOT		60	60	New project to install 16 bike lockers with on demand technology at Mercer Island Transit Center.
700695 - ACCESS CONTROL CARD UPGRADE		1,114	1,114	Upgrade existing system and centralize access control at all Sound Transit facilities
700696 - KING ST STATION PLATFORM IMPRV		300	300	New project to participate in local partnership to design and construct passenger access improvements to King Street Station improving access to Century Link Field.
700697 - LRV BETWEEN CAR BARRIERS		520	520	New project to procure and install barriers for 21 Link stations to prevent access to space between LRV vehicles.
700793 - SIGNAGE IMPROVEMENTS	931	1,131	200	To study wayfinding issues to assist ease of access to Link services.
<b>ADMINISTRATIVE</b>				
802000 - ADMINISTRATIVE CAPTIAL	13,484	17,284	3,800	To fund tenant improvements to newly leased office space.

**2. Amendments adopted between the publication of the Proposed and Adopted TIP**

Other budget amendments adopted by the Board subsequent to publication of the Proposed 2017 TIP and prior to publication of the Adopted 2017 TIP are shown below:

Project	Authorized Project Allocation as reported in	Revised Authorized Project	Change to Allocation (\$000)	Comments
<b>SYSTEM EXPANSION - SOUNDER</b>				
300017 - PUYALLUP STATION IMPROVEMENTS	8,414	11,009	2,595	Budget revision per R2016-26 as project enters final design.
300018 - SUMNER STATION IMPROVEMENTS	6,472	17,042	9,068	Authorized project allocation increase per R2017-01 as project enters into final design.
<b>ENHANCEMENT</b>				
700736 - UNION STN GARDEN LEVEL REMODEL	1,383	1,854	471	Budget revision per R2016-31 to increase project allocation due to changes in project design, added work spaces and furnishings and electrical condition mitigation.

**3. Non-material error corrections.**

Resolution No. R2016-37, Section 5g, authorizes the CEO to correct the budget for “non-material errors” to be consistent with Board actions.

There were no corrections for 2017.

# Appendix E – Sound Transit Project Phases

Projects are typically planned and executed in phases. Project teams track and report on project costs relative to the activities and deliverables in each. Project phases include:

## 01 – Operations+Maintenance

Costs to operate and maintain capital assets where the budget to do so is part of an established lifetime budget. Currently used to maintain Sound Transit's public art assets.

## 02 – Operations+Maintenance-Agency

Costs that cannot be capitalized. Currently used for Research and Technology project costs incurred prior to the establishment of project scope.

## 09 – Administrative Capital

Design, development and implementation or procurement of Agency assets such as non-revenue vehicle fleet, IT systems, furniture, and equipment.

## 10 – Agency Administration

Administrative expenditures occur throughout the life of the project and include costs for direct labor by Sound Transit staff (staff dedicated to specific projects) and other direct charges to the project necessary for project execution.

## 20 – Preliminary Engineering & Environmental Review

Professional services to complete the preliminary engineering and environmental assessments and evaluations. Preliminary engineering identifies project requirements and defines the project work scope. This includes preliminary design studies, permitting requirements, data collection, public involvement, legal and technical documentation, cost estimates, and assessment of alternatives. The environmental review includes achievement of all necessary environmental permits.

## 26 – Research & Technology

Implementation of new transit technologies focused on systemwide safety, security and communications with passengers.

## 30 – Final Design & Specification

Final design includes professional consultant activities to complete design and full construction plans and specifications, legal and technical documentation, environmental clearance, constructability review, value engineering, data collection, advertising, assessment of alternatives related to project design, and bid reviews.

## 35 – Third Parties

Third party expenditures occur through the life of the project and include agreements with other governmental units to reimburse their costs for review of alternatives, design review, and construction monitoring and inspection.

In certain cases, when Sound Transit is a funding partner rather than the lead agency, it includes Sound Transit's funding obligation to the lead agency.

## 40 – Right-of-Way (ROW) Acquisition & Permits

ROW includes the cost to purchase or lease real property required for construction and construction staging, easements, rights-of-way, and any residential or commercial relocations. This phase includes budget for negotiating the purchase price, relocation costs, surveys, appraisals, environmental audits, permits, legal costs, maps, charts, and all permits not included under the general construction contracts.

## 50 – Construction

Construction covers project construction contracts, professional and technical assistance, advertising, legal and technical documentation, inspection, testing, and permitting. In addition, the construction budget includes service startup, commissioning of all systems, and training.

## 55 – Construction Services

Construction Services includes construction management and other professional services in support of the Agency's management of construction activities.

## 61 – Art

Procurement and installation of public art at stations and along guideways.

## 70 – Vehicles

Procurement, manufacture, delivery, testing, and commissioning of revenue vehicles, spare parts, and warranty support. Also includes procurement of non-revenue vehicles.

## 80 – Startup and Testing

Includes tests of new systems, new schedules, and various specific equipment. This phase includes the training of personnel before the completion of the project to identify issues and correct them to enable a smooth transition to operations and the close out of the project.

## 90 – Contingency

Contingency provides a funding source to address general project risks, such as market fluctuations and changes in regulatory requirements. It also covers unforeseen expenses and cost estimate variances.



# Appendix F – Subarea Allocations

The Central Puget Sound Regional Transit Authority (Sound Transit) has implemented an accounting and reporting system consistent with the financial policies approved in the ST2 voter-approved program. Annually, Sound Transit (the agency) prepares a Schedule of Sources and Uses of Funds by Subarea (the schedule) that is based on the agency's audited financial statements and the agency's long-term Financial Plan. The schedule reports actual tax revenues received by subarea and an allocation to each subarea of other sources and uses earned.

This system is integrated into the agency's system of internal control over financial reporting, ensuring the integrity of the information reported and providing management, the Board, and the Citizen Oversight Panel required information to

monitor progress against Sound Transit's subarea commitments to its voters.

Annually, the agency's financial statement auditors perform agreed upon procedures which look at the allocation of sources and uses of funds presented. These procedures were developed by management, reviewed by the Citizen Oversight Panel, and approved by the Audit and Reporting Committee of the Board. All results from independent examinations are presented to the Board.

This appendix provides the drivers that will be used to allocate sources and uses to subareas in 2016 as well as new projects for 2017. Any additional projects are added at the end of the year when subarea allocations are calculated.

## Revenues and Financing Sources

### SOURCES

Description	Driver
Bond Proceeds	Financial Plan
Capital Grants	Project Costs or Board Designation
Interest Earnings	Financial Plan
Motor Vehicle Excise Tax	Zip Code Location
Operating Grants	Operating Uses by Mode
Other Revenue	Location/Modal Operating Use Drivers (see Operating Uses section below)
Passenger Fares	(see next section)
Rental Car Tax	Department of Revenue Location Code/County Level
Sales & Use Tax	Department of Revenue Location Code

### PASSENGER FARES

Description	Driver
Central Link Light Rail Fares	Station Boardings
Souder Fares	Station Boardings
ST Express Fares	Route Boardings/Platform Hours
Tacoma Link Light Rail Fares	Station Boardings

**Operating Uses**

LINK LIGHT RAIL SERVICES OPERATING USES

Description	Driver
Central Link Operations	Track Miles/Boardings
Tacoma Link Operations	Location

SOUNDER COMMUTER RAIL SERVICES OPERATING USES

Description	Driver
BNSF North Line	Track Miles
BNSF South Line	Track Miles
All Other Sounder Operations	Vehicle Miles

ST EXPRESS SERVICES OPERATING USES

Description	Driver
Bus Operations	Platform Hours
DSTT Operations	Location

OTHER USES

Description	Driver
Art Maintenance	Location
Other Expenses	Location or Board Designation

**Capital Project Uses (Outlays)**

System Expansion – Link Light Rail Projects	Driver
East Link Extension	ST2 Adopted Financial Plan Location
Downtown Redmond Link Extension	Location
Federal Way Link Extension	Location
First Hill Link Streetcar	Location
Link Operations & Maintenance Satellite Facility	ST2 Adopted Financial Plan
Lynnwood Link Extension	ST2 Adopted Financial Plan
Northgate Link Extension	Location
S. 200 <sup>th</sup> Link Extension	Location
Tacoma Link Expansion	Location
University Link Extension	Location
ST2 LRV Fleet Expansion	ST2 Adopted Financial Plan
Enhancements to Tacoma Link Expansion	Location

<b>System Expansion – Sounder Commuter Rail Projects</b>	<b>Driver</b>
D St-M St Track & Signal	Location
Lakewood Station Improvements	Location
M St.-Lakewood Track & Signal	Location
Mukilteo Station, South Platform	Location
Passenger Information System/CCTV	Location
Point Defiance Bypass	Location
Puyallup Station Improvements	Location
Sounder South Expanded Service	ST2 Adopted Financial Plan
Sounder ST2 Fleet Expansion	ST2 Adopted Financial Plan
Sounder Yard & Shops Facility	ST2 Adopted Financial Plan
Sounder Yard Expansion	Track Miles
Sumner Station Improvements	Location
Tacoma Trestle Track & Signal	Location
Tukwila Station	Location

<b>System Expansion – ST Express Projects</b>	<b>Driver</b>
Bothell Transit Related Improvements	Location
I-90 Two-Way Transit & HOV Operations, Stage 3	Location
Kirkland Transit Center/3 <sup>rd</sup>	Location
ST Express Bus Base	ST2 Adopted Financial Plan
ST Express Mid-Day Bus Storage	Location

<b>System Expansion – Other</b>	<b>Driver</b>
South King County HCT Study	Financial Policies
Fare Administration	Financial Policies
Fare Collection	Location
Fare Policy Program	Financial policies
Research and Technology	Financial Policies
ST3 Planning	Financial Policies
STart	Location

<b>Enhancement Projects</b>	<b>Driver</b>
Bike Locker Program	Location
Bus Maintenance Facility	Platform Hours
Central Link Card Readers	Boardings/Track Miles
Central Link HVAC – Instrument House & UPS Room	Boardings/Track Miles
Bellevue Transit Center Security System	Location

<b>Enhancement Projects</b>	<b>Driver</b>
Central Link Overhead Catenary System Tie Switch	Boardings/Track Miles
Convention Place Development Systems Retrofit	Location
Customer Emergency Stations	Location
Downtown Seattle Transit Tunnel Mitigation	Location
Kent Station Parking Lot Paving	Location
Kent Station Platform Lighting	Location
King Street Station Platform Improvements	Boardings/ Track Miles
Link CCTV System Upgrade	Boardings/Track Miles
Link OMF Energy Efficiency	Boardings/Track Miles
Link Operating Segment System Enhancements & Upgrades	Location
Locomotive Inboard Facing Cameras	Boardings/Track Miles
LRV On Board Energy Storage	Location
LRV Between Car Barriers	Location
LRV Wash Bay Modification	Boardings/Track Miles
LRV Wheel Flat Software	Boardings/Track Miles
Noise Abatement	Location
Non Revenue Support Vehicles	Boardings/ Track Miles
OMF LRV Wash Heater System	Boardings/Track Miles
On Demand Bike Locker Pilot	Location
Operations & Maintenance LRV Vehicle Lift	Boardings/Track Miles
Positive Train Control	Location
Puyallup Station LED Lighting	Location
Regional Parking Pilot Project	Financial Policies
Remote Switch Heaters	Location
Security Enhancements	Location
Signage Improvements	Location
Souder Passenger Emergency Intercom	Boardings/Track Miles
ST Express Mobile Communications	Platform Hours
Sumner Station LED Lighting	Location
Tacoma Link Fare Collection	Location
TOD Property Disposition	Location
Union Station Remodel – Renovation of Garden Level Remodel	Location

<b>Rehabilitation &amp; Replacement Projects</b>	<b>Driver</b>
Access Control System Upgrade	Location
Beacon Avenue Paving	Location
Federal Way: Post Tension Cable Repair	Location

<b>Rehabilitation &amp; Replacement Projects</b>	<b>Driver</b>
IT Link Light Rail	Financial Policies
IT Transit Systems	Financial Policies
Link Bridge Repairs	Location
Link Radio Upgrade	Location
Link Station Braided Tile Replacement	Location
LRV Overhaul	Boardings/Track Miles
Small Works Program	Location
Sounder Vehicle Overhaul Program	Vehicle Miles
ST Express Fleet Replacement	Platform Hours
Station Midlife Refurbishment Program	Location
Tacoma Dome Station	Location
Tacoma Link LRV Overhaul	Location
Tacoma Link LRV Communications Upgrade	Location

<b>Administrative Projects</b>	<b>Driver</b>
Administrative Capital	Financial Policies
Environmental Mitigation, Monitoring and Maintenance	Modal Operating Expense Rules
Information Technology Program	Financial Policies
Surplus Property Disposition	Location

#### **Systemwide Uses**

<b>Description</b>	<b>Driver</b>
Agency Administration	Financial Policies

#### **Debt Service**

<b>Description</b>	<b>Driver</b>
Debt Service	Financial Plan

## Appendix G – Glossary

**A87** – A federal government Office of Management and Budget circular that establishes principles and standards for determining costs for Federal awards carried out through grants, cost reimbursement contracts, and other agreements with State and local governments. The A-87 Revised (effective June 9, 2004) rescinds and supersedes Circular A-87 (issued May 4, 1995).

**ADA (Americans with Disabilities Act)** – Federal law passed in 1990 that prohibits discrimination in services, facilities, and employment against individuals with disabilities.

**Adopted Annual Budget** – The proposed annual budget and associated revisions adopted by the Board before the beginning of the fiscal year, plus any one-time actions that the agency's Budget Policy authorizes the CEO to take after the Board adopts the budget and transit improvement plan (TIP) and before publication of the adopted annual budget document.

**Adopted Transit Improvement Plan (TIP)** – The TIP is the cumulative total of authorized project allocations to date for all active projects. The adopted TIP is the proposed TIP and associated revisions adopted by the Board, plus any one-time actions that the Budget Policy authorizes the CEO to take after the Board adopts the annual budget and TIP resolution.

**Annual Budget and TIP Resolution** – Board-adopted resolution that establishes annual spending authority and divides spending totals into categories such as operating including transit modes, projects by type, and debt service, plus an annual revenue forecast. It also establishes the authorized project allocation to date for projects included in the TIP and not approved by separate Board resolution.

**Annual Operating Budget** – Board-authorized agency operating expenditures. The agency maintains operating budgets at five levels:

*Agency:* Total agency operating expenditures.

*Department:* All operating expenditures managed by a department (e.g., DECM, Operations, Executive). Included in agency budget document.

*Division:* All operating expenditures managed by a division (e.g., Construction Management, Environmental & Sustainability, Human Resources, Service Planning, ). Not included in agency budget document but maintained and monitored within agency financial systems.

*Business Unit:* All operating expenditures for smallest organization component. Not included in agency budget documents but maintained and monitored within agency financial systems.

*Modal:* All operating expenditures for a transit mode: Sounder commuter rail, ST Express bus, Tacoma Link, and Link light rail. Included in agency budget document.

**Annual Project Budget** – The amount of project costs expected to be incurred during the budget year.

**Authorized Project Allocation to Date** – The current Board-authorized spending ceiling for a project.

**Average Weekday Boardings** – Number of one-way passenger movements (trips) between two points on a single vehicle on all routes on an average weekday.

**Baseline** – A plan, design, specification, contract, or other approved document or configurations against which actual performance is measured. Baseline can also refer to a schedule or budget used for management control and reporting purposes.

**BNSF** – Burlington Northern Santa Fe Railway - The railroad company that contractually operates Sounder, Sound Transit's commuter rail service.

**Board** – The Sound Transit Board of Directors, made up of 18 members: 17 elected officials from local jurisdictions within the Sound Transit district and the Secretary of the Washington State Department of Transportation.

**Boarding** – The number of one-way passenger trips between two points on a single vehicle. Also synonymous with unlinked passenger trip, rider, or passenger.

**Capital Asset** – Individual assets costing \$5,000 or more and having useful lives greater than one year. Also, significant alterations, renovations, or structural changes that increase the usefulness of a Sound Transit owned asset, enhance its efficiency, or prolong its useful life by more than one year.

**Capital Outlay** – An expense that results in the acquisition of or addition to fixed assets.

**Capital Projects** – Projects that purchase or construct capital assets.

**Catenary** – Suspended overhead wire that carries high voltage for electrically-powered transit vehicles (such as light rail) from a central power source.

**CCTV (Closed Circuit Television)** – Cameras installed aboard transit vehicles and at passenger stations for security purposes.

**CEA** – Communications & External Affairs department.

**CEO** – Chief Executive Officer of Sound Transit who reports directly to the Board of Directors.

**COLA (Cost-of-Living Adjustment)** – Refers to the annual percentage increase applied to an employee's salary for inflationary factors.

**Commuter Rail** – Railway for urban passenger train service consisting of local short distance travel operating between a central city and adjacent suburbs.

**Complaints per 100,000 Boardings** – The performance metric (calculated for each mode) that measures the number of service complaints per 100,000 passenger boardings.

*Calculation = [(Service Complaints Received/ Modal Passenger Boardings) \* 100,000]*

**Contingency** – A budgetary reserve put aside for emergencies or unforeseen expenses.

**COP (Citizen Oversight Panel)** – An independent panel of 15 volunteers appointed by the Board of Directors representing each of Sound Transit's five subareas. Its mission is to monitor the agency's commitment to the public, reviewing projects, budgets, and performance, and reporting its findings and recommendations for improvement to the Board.

**Cost per Boarding** – Calculated for each mode, this metric represents the fully allocated cost of providing service to a passenger.

*Calculation = (Modal Operating Expenses/Modal Passenger Boardings)*

**Cost per Platform Hour** – Calculated for each mode, this metric measures the fully allocated cost of providing one hour of service, inclusive of revenue and non-revenue time.

*Calculation = (Modal Operating Expenses/Modal Platform Hours)*

**Cost per Revenue Vehicle Hour** – Calculated for each mode, this metric represents the fully allocated cost of providing one revenue vehicle hour of service.

*Calculation = (Modal Operating Expense/Modal Revenue Vehicle Hours)*

**CPI (Cost Performance Index)** – A measure of the value of the work completed compared to the actual cost or progress made on the project.

**Deadhead** – The amount of non-revenue service time or miles when a bus or train is not carrying revenue passengers, usually a trip from, to, or between lines, yards, or garages.

**Debt Service** – The payment of interest and the repayment of principal on long-term borrowed funds according to a predetermined schedule.

**DECM** – Design, Engineering & Construction Management department.

**DB (Design-build)** – A procurement method used to minimize design and construction risks while reducing the project delivery schedule by overlapping the design phase and construction phase of a project. Using DB, the owner contracts with a single entity for all engineering, design, and construction services for a transit facility/system.

**Department** – Highest organizational unit of Sound Transit, consisting of: Communications & External Affairs; Design, Engineering & Construction Management; Executive; Finance & Information Technology; Legal; Operations; and Planning, Environment & Project Development.

**Depreciation** – A method by which the costs of property and equipment are systematically and rationally allocated over their useful life.

**Division** – Organizational sub-unit within departments.

**DSTT** – Downtown Seattle Transit Tunnel.

**EIS (Environmental Impact Statement)** – A study of the impacts of a major project on the environment and surrounding areas, required for any capital construction project for which federal funds are used.

**Expense** – A decrease in net current assets. Expenses include salaries and benefits, administrative expenses, debt service, and those current operating costs that require the use of current assets.

**Farebox Recovery** – Calculated for each mode collecting fares, this metric represents the percentage of operating cost of each mode that is paid by transit riders.

*Calculation = (Modal Operating Expenses/Modal Passenger Fare Revenue)*

**FCC** – Federal Communications Commission.

**Financial Plan Project Estimate** – The current estimated project cost from inception to completion, as maintained and updated annually in the agency's financial plan. Maintained in inflation adjusted year of expenditure dollars.

**Fiscal Year** – A 12-month period for calculating annual financial statements. Sound Transit's fiscal year is January 1 to December 31.

**FIT** – Finance & Information Technology department.

**FTA (Federal Transit Administration)** – The federal agency responsible for the administration of federal transit programs, including the allocation of grant funds. FTA is a part of the U.S. Department of Transportation.

**FTE (Full Time Equivalent)** – The fractional equivalent of one full-time employee working a 40-hour work week for one calendar year.

**FY** – Fiscal Year.

**GCCM (General Contractor/Construction Manager)** – A procurement method used to reduce construction risk. Using GCCM, the owner has access to construction expertise and experience prior to completion of design. Services offered by a GCCM contractor include assistance with decision-making, constructability reviews, value engineering, budget control, cost estimating, and schedule control.

**GFOA (Government Finance Officers Association)** – An organization whose purpose is to enhance and promote the professional management of governments for the public's benefit by identifying and developing financial policies and practices and promoting them through education, training, and leadership.

**GIS** – Geographic Information Services

**HCT (High Capacity Transit)** – Public transportation within an urbanized region operating principally on exclusive rights of way, including interim express services and high occupancy vehicle lanes, which taken as a whole, provides a substantially higher level of passenger capacity, speed, and service frequency than traditional public transportation systems operating principally in general purpose roadways.

**HOV (High-Occupancy Vehicle)** – A vehicle containing two or more passengers. Occupancy designations are used on designated auto traffic lanes to encourage car-pooling, ride sharing, or the use of public transportation.

**IT** – Information Technology

**KCM (King County Metro)** – The public transit division of King County Department of Transportation, responsible for providing bus, trolley bus, light rail, water taxi, paratransit, and vanpool services in a service area of about 2,000 square miles. Sound Transit contracts a portion of its express bus service as well as all of its light rail service with KCM.

**Light Rail** – Service using trains powered with overhead catenary power, operating on tracks embedded in city streets or along a separate right-of-way. Passengers are picked up and discharged at fixed locations (stations) located along the tracks.

**LRV (Light Rail Vehicle)** – A vehicle with overhead catenary power operating on tracks. It may be connected to other vehicles and operated as a train.

**MMIS (Maintenance Management Information System)** – The Maintenance Management Information System is an online system that helps gather and analyze data about an organization's maintenance operations with the intention of helping management make informed decisions and staff do their jobs more effectively.

**Mode** – A system for carrying transit passengers described by specific right-of-way, technology, and operational features. Sound Transit modes are light rail, commuter rail, and regional express bus.

**MVET (Motor Vehicle Excise Tax)** – Also called the “car tab” tax; this is a tax on vehicles based on the depreciated value of the vehicle using the Manufacturer's Suggested Retail Price (MSRP) as the initial vehicle value. The tax on commercial trucks and trailers is based on the depreciated value using the latest purchase price and year as the initial vehicle value. Sound Transit currently assesses a 0.3 percent MVET within its taxing district.

**NRV (Non-Revenue Vehicles)** – Agency fleet consisting of cars, trucks, vans, SUVs, specialty vehicles, and equipment used for administrative purposes.

**O&M** – Operations and Maintenance

**OMF** – Operations Maintenance Facility

**On-Time Performance** – A performance ratio that measures how often a transit service is on time (i.e., at a designated pick-up spot within a predetermined timeframe). The timeframe differs based on mode and frequency of service.

*Calculation =  $(\# \text{ Scheduled Trips} - \# \text{ Trips Early or Late}) / \text{Total \# of Scheduled Trips}$*

**ORCA (One Regional Card for All)** – A stored-value smart card used for payment of public transit fares in the Central Puget Sound region.

**Paratransit** – The comparable transportation service required by the ADA for individuals with disabilities who are unable to use fixed-route (bus and rail) service. The vehicles used do not operate over a fixed route or on a fixed schedule.

**PE/ED** – Preliminary Engineering and Environmental Documentation

**PEPD** – Planning, Environment & Project Development department

**Percentage of Scheduled Trips Operated** – A performance ratio that measures the number of times a Sound Transit vehicle or mode of service completes its scheduled route/trip

**Phase Gate Process** – Project management oversight and project budget approval process to ensure projects are ready to advance to a subsequent phase. Intended to enhance Board visibility into projects and control over key project decisions. The Phase Gate process triggers requests to the Board for Phase Gate project budget and other actions.

**PLA (Project Labor Agreement)** – PLAs are collective bargaining agreements between building trade unions and contractors. They govern terms and conditions of employment for all craft workers – union and nonunion – on a construction project.



**Platform Hours (also called Service Hours)** – For any mode, the total time the operator operates the vehicle, including revenue service (scheduled route, special event, and layover time) and non-revenue service (pullout and pull-in times from first/last stop to garage).

**Platform Miles (also called Service Miles)** – For any mode, the total miles traveled by a vehicle from pullout of garage/yard to return to garage/yard at end of revenue service, including any layover time and time when not carrying passengers.

**Preventable Accidents per 100,000 Revenue Miles** – For any mode, the number of preventable accidents reported per 100,000 miles of actual revenue vehicle mileage. A preventable accident is one in which the driver failed to do everything that reasonably could have been done to avoid the crash.

*Calculation = (Preventable Accidents / Actual Revenue Mileage) \* 100,000*

**Project Amendment** – A change to an authorized project allocation to date for a previously established phase budget or baseline. Generally triggered by a cost overrun or underrun.

**Project Type** – A category name used to identify projects of a similar nature. Sound Transit has four project types:

*System Expansion:* Projects that expand the current regional transit system including planning, design, and construction of light rail, commuter rail, and express bus transit infrastructure. Examples: East Link Extension, Tukwila Station, Fare Collection.

*Enhancement:* Projects that improve operating efficiency and effectiveness, improve rider experience, increase system functionality, or reduce operating costs. Examples: Noise Abatement, Signage Improvements, OMF Energy Efficiency

*Rehabilitation & Replacement:* Projects that extend the life of existing system assets and replace those at the end of their useful life; investment in maintaining assets in a state of good repair. Examples: Small Works Program, Link CCTV System Upgrade, Sounder Vehicle Overhaul Program

*Administrative:* Projects that support administration of the agency. The majority of these costs are capitalized with the assets produced by projects or expensed as transit operating costs. Remaining costs are treated as general and administrative expenses. Examples: Information Technology Program, Environmental Mitigation Monitoring & Maintenance, Surplus Property Disposition

**Proposed Annual Budget** – The initial annual operating and project budget as submitted by the CEO to the Board for its consideration and adoption.

**Proposed Transit Improvement Plan (TIP)** – The TIP is the cumulative total of authorized project allocations to date for all active projects. The proposed TIP is the initial submission to the Board for their review and adoption.

**Purchased Transportation** – Transportation service provided to a public transit agency from a public or private transportation provider, based on a written contract.

**Rebaselined Budget** – Board adopted change to a previously adopted baseline budget. Occurs when new scope elements have been included in a project that were not previously part of the project baseline. In order to maintain clear cost management accountability, projects are not rebaselined when project cost elements are higher than previously estimated.

**Revenue Vehicle Hours** – The number of hours that a vehicle is in revenue service and there is a reasonable expectation of carrying passengers (includes layover time, but not deadhead).

**Revenue Vehicle Miles** – The number of miles that a vehicle is in revenue service and there is a reasonable expectation of carrying passengers (includes layover time, but not deadhead).

**Revenues** – Increases in proprietary fund type net total assets from other than expense refunds and capital contributions.

**ROW (Right-of-Way)** – A right-of-way is a right to make a way over a piece of land, usually to and from another piece of land. A right of way is a type of easement granted or reserved over the land for transportation purposes. Also used to describe the land on which a railroad line, road, or utility is built.

**Sales Tax** – A 0.9 percent tax levied on sales of eligible items within the boundaries of the Sound Transit District and collected by the State for the benefit of Sound Transit.

**SCADA (Supervisory Control and Data Acquisition)** – A centralized system to control signals, systems, and substations on Sound Transit's light rail system. The system also provides real-time location data to a control center.

**Service Hours (also called Platform Hours)** – For any mode, the total time the operator operates the vehicle, including revenue service (scheduled route, special event, and layover time) and non-revenue service (pullout and pull-in times from first/last stop to garage).

**Service Miles (also called Platform Miles)** – For any mode, the total miles traveled by a vehicle from pullout of garage/yard to return to garage/yard at end of revenue service, including any layover time and time when not carrying passengers.

**Service Implementation Plan (SIP)** – Board-adopted document that details six-year transit mode service levels and operating expenses. SIP is a planning document and does not constitute authorization for expenditure of funds.

**Smart Card** – A small card, usually plastic, with an imbedded computer chip good for one or more trips that is usually altered by a fare collection machine removing some or all of the stored value as each trip is taken.

**SODO** – The general area south of downtown Seattle; also, the name of one of Sound Transit's light rail stations located in that neighborhood.

**Sound Move** – Voter-approved plan (1996) to build a high-capacity public transit system.

**Sound Transit** – The Central Puget Sound Regional Transit Authority

**SPI (Schedule Performance Index)** – A measure of schedule efficiency on a project. It is the ratio of earned value (EV) to planned value (PV).

**SR** – State Route

**ST2 (Sound Transit 2)** – Voter-approved (2008) second phase of Sound Transit's plan for mass transit expansion.

**ST3 (Sound Transit 3)** – The third phase of Sound Transit's plan for mass transit expansion.

**STart (Sound Transit Art Program)** – Program whose purpose is to incorporate public art into Sound Transit systems and facilities that will reflect the communities served and enhance the customer experience.

**STU (Sound Transit University Program)** – Refers to a range of training courses, both on-site and off-site, offered for Sound Transit employees to improve professional and technical skills.

**Subarea** – Five subareas of the Sound Transit District defined for planning and budgeting purposes consisting of Snohomish County, North King County, East King County, South King County, and Pierce County.

**System Plan** – (see Sound Move).

**TCO (Total Cost of Ownership)** – A financial estimate intended to help buyers and owners determine the direct and indirect costs of a product or system.

**TGT (Technology Governance Team)** – Team of Sound Transit employees who provide leadership and direction for the Information Technology (IT) division to ensure reliable, consistent, cost-effective, and accountable services.

**TIFIA (Transportation Infrastructure Financing and Innovation Act)** – A direct loan, loan guarantee, and standby line of credit program allowing the USDOT to provide credit assistance of up to 33 percent of the construction costs of a regionally or nationally significant surface transportation project. Loans are made at U.S. Treasury rates and may be repaid over as long as 35 years after substantial completion of the project.

**TIP (Transit Improvement Plan)** – This document provides projected capital and operating expenditures for the construction and operation of the Sound Transit regional transit system in the central Puget Sound. The TIP contains information on scope and budget as well as changes in budget and schedule for all active phases of both capital and operating programs.

**TOD (Transit-Oriented Development)** – The development of residential, commercial, and retail uses within walking distance of a transit station or stop.

**Total Baseline Budget** – The total budget to complete all phases of a project approved by the Board as a benchmark for performance and reporting purposes in year of expenditure dollars. A project may set a new baseline if there is a change in the scope of the project. However, a project baseline is not adjusted to account for cost overruns or underruns.

**Total Capital Project Cost Estimate** – The current estimated project cost from inception to completion, as maintained and updated at engineering milestones by agency Project Controls. Maintained in constant dollars.

**TPSS (Traction Power Sub Station)** – A wayside unit that converts electric power from the form provided by the public utility to an appropriate voltage, current type, and frequency to supply traction power to the motor of the light rail vehicle through the overhead catenary.

**TVM (Ticket Vending Machine)** – Automated equipment located at customer facilities that enable the purchase of fare media for access to the Sound Transit transportation system.

**UPS** – Uninterrupted Power Supply

**UW** – University of Washington

**Variance** – The difference between planned costs and actual costs.

**WSDOT** – Washington State Department of Transportation

**YOE (Year of Expenditure)** – refers to the representation of a project's cost inclusive of an annual inflationary factor calculation.





