

2017

Proposed Transit Improvement Plan



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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 project budgets.

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 Draft 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 budget amounts are included. Where a baseline budget has not been approved, the total budget 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.

TRANSIT IMPROVEMENT PLAN SUMMARY
(in millions)

	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
Transit Modes	\$0	\$287	\$300	\$310	\$317	\$336	\$372	\$0	\$1,922
Projects	5,099	1,220	1,481	1,302	1,237	709	507	636	12,192
Reserves	330	69	14	9	9	9	4	4	447
Total	\$5,429	\$1,289	\$1,494	\$1,311	\$1,246	\$719	\$512	\$640	\$12,641

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.

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.

Transit Modes

The Proposed 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.

TRANSIT MODES SUMMARY

(in millions)

Mode	2017	2018	2019	2020	2021	2022	Total
Link Light Rail	\$98	\$102	\$106	\$110	\$127	\$153	\$696
Souder Commuter Rail	54	59	61	64	59	62	358
ST Express Bus	130	135	137	137	141	145	826
Tacoma Link Light Rail	5	5	6	7	9	12	42
Total	\$287	\$300	\$310	\$317	\$336	\$372	\$1,922

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 proposed 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.

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 Souder 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 last year 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 roundtrip added in 2017 and a potential additional trip. 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 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.

Projects

The 2017 Transit Improvement Plan (TIP) contains all board-authorized budgets 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
System Expansion									
Link	\$3,593	\$977	\$1,191	\$1,195	\$1,116	\$601	\$446	\$563	\$9,682
Sounder	701	69	63	11	0	0	0	0	844
Regional Express	183	43	35	0	29	0	0	0	290
Other	61	12	40	10	8	5	7	17	161
Subtotal	4,539	1,101	1,329	1,216	1,154	606	453	580	10,978
Enhancement	68	26	20	9	1	1	0	0	126
Rehabilitation & Replacement	147	17	56	2	1	21	1	3	248
Administrative	345	77	74	75	81	82	53	53	840
Total	\$5,099	\$1,220	\$1,481	\$1,302	\$1,237	\$709	\$507	\$636	\$12,192

PROJECT DELIVERY SUMMARY BY MODE
(in millions)

	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total TIP
Link	\$3,613	\$992	\$1,196	\$1,195	\$1,116	\$601	\$446	\$563	\$9,722
Sounder	756	86	67	18	0	0	0	0	927
Regional Express	312	43	98	0	29	19	0	0	502
Other	417	99	120	89	92	89	61	73	1,040
Total	\$5,099	\$1,220	\$1,481	\$1,302	\$1,237	\$709	\$507	\$636	\$12,192

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 200th 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.
- Continue construction on track and signal improvements from Tacoma to Nisqually along Sound Transit owned right-of-way for Point Defiance Bypass.

BUDGET CHANGES

(in thousands)

System Expansion

Project	Reason	Budget Type	Explanation	Change
LINK				
Tacoma Link Expansion	Phase Gate	Final Design & ROW	Budget was increased to fund pre-construction services which will be needed prior to the project baseline.	\$550
REGIONAL EXPRESS				
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
OTHER				
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

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
Preliminary Engineering									
400034 Enhancements to Tacoma Link Expansion	300	1,500	200	0	0	0	0	0	2,000
4X445 Federal Way Link Extension	38,236	6,139	4,415	0	0	0	0	0	48,790
4X630 Downtown Redmond Link Extension	1,967	14,225	12,425	0	0	0	0	0	28,617
Subtotal	40,503	21,864	17,040	0	0	0	0	0	79,407
Final Design & ROW									
400008 Tacoma Link Expansion	11,004	9,986	5,638	1,975	1,875	2,049	1,026	0	33,552
4X115 Lynnwood Link Extension	117,501	116,196	98,527	45,481	36,564	28,119	23,260	22,213	487,861
Subtotal	128,505	126,182	104,166	47,455	38,439	30,168	24,286	22,213	521,413
Baseline									
400009 Link Operations & Maintenance Facility - East	56,693	99,847	79,095	92,773	94,385	25,236	1,191	0	449,220
400032 ST2 Light Rail Vehicle Fleet Expansion	10,791	59,534	26,368	99,138	123,584	148,945	163,010	101,635	733,006
4X100 Northgate Link Extension	778,810	258,860	320,679	224,551	100,171	43,759	14,457	158,468	1,899,756
4X200 University Link Extension	1,519,568	7,795	2,639	21,389	204,616	0	0	0	1,756,007
4X420 South 200th Link Extension	322,010	9,428	23,569	28,234	0	0	0	0	383,241
4X600 East Link Extension	603,511	393,373	617,564	681,205	555,181	352,797	242,896	230,624	3,677,150
Subtotal	3,291,383	828,837	1,069,914	1,147,290	1,077,937	570,738	421,554	490,727	8,898,380
Reserve									
4X199 Northgate Link Extension Project Reserve	0	0	0	0	0	0	0	50,000	50,000
Subtotal	0	0	0	0	0	0	0	50,000	50,000
Operating									
400007 First Hill Streetcar	132,728	8	8	8	8	8	8	8	132,780
Subtotal	132,728	8	8	8	8	8	8	8	132,780
Total	\$3,593,119	\$976,890	\$1,191,127	\$1,194,753	\$1,116,383	\$600,913	\$445,848	\$562,948	\$9,681,980

2017 TIP Cashflow by Subarea

(in thousands)

System Expansion
LINK

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
1 - Snohomish	77,356	91,555	73,570	56,212	54,615	38,526	32,512	24,325	448,669
2 - North King	2,500,777	356,310	392,882	315,917	377,563	107,548	75,584	250,435	4,377,016
3 - South King	372,534	42,478	46,598	58,934	34,188	24,208	21,420	13,213	613,572
4 - East King	631,148	475,062	672,239	761,715	648,142	428,582	315,306	274,976	4,207,171
5 - Pierce	11,304	11,486	5,838	1,975	1,875	2,049	1,026	0	35,552
Total	\$3,593,119	\$976,890	\$1,191,127	\$1,194,753	\$1,116,383	\$600,913	\$445,848	\$562,948	\$9,681,980

2017 TIP Cashflow by Phase

(in thousands)

Phase # and Description	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	221,835	47,489	57,949	54,772	72,167	42,086	40,269	64,414	600,982
20-Prelim Engineering/Env Review	186,112	11,502	10,094	250	250	250	271	2,705	211,433
30-Final Design+Specifications	422,840	67,920	53,595	24,215	23,396	16,073	11,642	14,987	634,668
35-Third Party	168,105	17,396	16,507	12,302	15,388	7,815	6,263	6,351	250,128
40-Row Acquisition+Permits	533,506	213,596	69,911	9,588	34,725	4,000	650	6,539	872,516
50-Construction	1,758,553	495,112	870,291	903,552	764,152	324,786	187,170	265,335	5,568,951
55-Construction Services	182,752	65,210	88,112	89,797	77,824	53,883	37,194	32,025	626,796
70-Vehicles	108,172	58,667	24,613	99,059	123,412	146,746	161,015	98,393	820,077
80-System Testing+Startup	11,244	0	56	1,216	5,067	5,274	1,373	0	24,230
90-Contingency	0	0	0	0	0	0	0	72,200	72,200
Total	\$3,593,119	\$976,890	\$1,191,127	\$1,194,753	\$1,116,383	\$600,913	\$445,848	\$562,948	\$9,681,980

400034

Enhancements to Tacoma Link Expansion

Managed by: FIT

Scope: Engineering and streetscape design for transit access improvements and station area enhancements around the Tacoma Link Expansion 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 \$2,000,000 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 Expansion project

Changes in project budget 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	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		

TIP Cashflow (in thousands)

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
Pierce	300	1,500	200	0	0	0	0	0	2,000
Total	300	1,500	200	0	0	0	0	0	2,000

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
35-Third Party	300	1,500	200	0	0	0	0	0	2,000
Total	300	1,500	200	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 in project budget 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:	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		

TIP Cashflow (in thousands)

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
South King	38,236	6,139	4,415	0	0	0	0	0	48,790
Total	38,236	6,139	4,415	0	0	0	0	0	48,790

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	5,600	1,770	2,015	0	0	0	0	0	9,385
20-Prelim Engineering/Env Review	30,120	1,052	2,157	0	0	0	0	0	33,329
35-Third Party	1,502	947	0	0	0	0	0	0	2,449
40-Row Acquisition+Permits	1,013	2,371	243	0	0	0	0	0	3,627
Total	38,236	6,139	4,415	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. Budget concerns include potential for escalation in right-of-way costs.

4X630

Downtown Redmond Link Extension

Managed by: PEPD

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. The project only includes environmental reviews and preliminary engineering for this light rail segment.

Changes in project budget 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:	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		

TIP Cashflow (in thousands)

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
East King	1,967	14,225	12,425	0	0	0	0	0	28,617
Total	1,967	14,225	12,425	0	0	0	0	0	28,617

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	167	2,425	2,714	0	0	0	0	0	5,306
20-Prelim Engineering/Env Review	1,750	10,200	7,811	0	0	0	0	0	19,761
35-Third Party	50	1,100	1,350	0	0	0	0	0	2,500
40-Row Acquisition+Permits	0	500	550	0	0	0	0	0	1,050
Total	1,967	14,225	12,425	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 beginning preliminary engineering work. Uncertainties exist in design, environmental, third party, and jurisdictional requirements that could present budget and schedule risks.

400008

Tacoma Link Expansion

Managed by: DECM

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 in project budget since 2016: Project budget increase by \$550 thousand to support the procurement of preconstruction services by a construction management consultant.

Board Approved Capital Budget (in thousands of YOE dollars)		ST2 Total Project Cost Estimate (in thousands of 2016 dollars)	
Phase Gate Passed:	4-Enter Final Design	2008 Cost Estimate:	\$106,678
Baseline:	\$0	2016 Cost Estimate:	\$144,436
2016 TIP:	\$33,002	2017 Cost Estimate:	\$144,436
2017 TIP:	\$33,552		

TIP Cashflow (in thousands)

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
Pierce	11,004	9,986	5,638	1,975	1,875	2,049	1,026	0	33,552
Total	11,004	9,986	5,638	1,975	1,875	2,049	1,026	0	33,552

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	3,276	1,606	1,348	1,250	1,175	1,249	698	0	10,600
20-Prelim Engineering/Env Review	5,850	0	0	0	0	0	21	0	5,872
30-Final Design+Specifications	1,475	4,475	3,148	575	550	550	57	0	10,830
35-Third Party	125	100	75	50	50	50	50	0	500
40-Row Acquisition+Permits	178	2,565	457	0	0	0	0	0	3,200
55-Construction Services	0	440	110	0	0	0	0	0	550
70-Vehicles	100	800	500	100	100	200	200	0	2,000
Total	11,004	9,986	5,638	1,975	1,875	2,049	1,026	0	33,552

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

Project Risk Assessment
The Board's preferred alternative may exceed the ST2 cost estimate. Project requires continued coordination with community stakeholders and contribution from public/private partners.

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 in project budget 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:	4-Enter Final Design	2008 Cost Estimate:	\$1,769,504
Baseline:	\$0	2016 Cost Estimate:	\$1,507,972
2016 TIP:	\$487,861	2017 Cost Estimate:	\$1,507,972
2017 TIP:	\$487,861		

TIP Cashflow (in thousands)

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
Snohomish	64,155	63,443	53,796	24,833	19,964	15,353	12,700	12,128	266,372
North King	53,345	52,753	44,731	20,648	16,600	12,766	10,560	10,085	221,489
Total	117,501	116,196	98,527	45,481	36,564	28,119	23,260	22,213	487,861

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	12,502	7,225	11,231	11,272	11,315	11,295	11,987	11,477	88,305
20-Prelim Engineering/Env Review	39,299	0	0	0	0	0	0	2,701	42,000
30-Final Design+Specifications	27,210	37,750	23,893	4,100	5,000	5,000	5,000	3,500	111,453
35-Third Party	2,341	4,396	2,547	1,343	1,343	1,343	1,343	2,746	17,400
40-Row Acquisition+Permits	31,249	57,025	35,505	0	0	0	0	0	123,779
55-Construction Services	4,900	9,800	25,351	28,767	18,906	10,481	4,930	1,789	104,925
Total	117,501	116,196	98,527	45,481	36,564	28,119	23,260	22,213	487,861

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

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

Project Risk Assessment
Budget Risk: Working with Final Designer, GC/CM contractor, and Construction Management Consultant to develop updated construction cost estimates.
Schedule Risk: Coordination efforts with multiple third parties, stakeholders, and jurisdictions, and complying with the requirements of the Federal Transit Administration's (FTA) New Starts 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 in project budget since 2016: Project was baselined in 2016 per Resolution No. R2016-18 and increased by \$315.6 million.

Board Approved Capital Budget (in thousands of YOE dollars)		ST2 Total Project Cost Estimate (in thousands of 2016 dollars)	
Phase Gate Passed:	6-Proceed to Construction	2008 Cost Estimate:	\$320,432
Baseline:	\$0	2016 Cost Estimate:	\$269,918
2016 TIP:	\$449,220	2017 Cost Estimate:	\$413,922
2017 TIP:	\$449,220		

TIP Cashflow (in thousands)

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
Snohomish	11,906	20,968	16,610	19,482	19,821	5,300	250	0	94,336
North King	9,468	16,674	13,209	15,493	15,762	4,214	199	0	75,020
South King	10,885	19,171	15,186	17,812	18,122	4,845	229	0	86,250
East King	24,435	43,034	34,090	39,985	40,680	10,877	514	0	193,614
Total	56,693	99,847	79,095	92,773	94,385	25,236	1,191	0	449,220

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	1,974	2,465	3,686	3,722	3,704	860	1,163	0	17,573
20-Prelim Engineering/Env Review	9,536	0	0	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	43,166	80,464	10,899	0	0	0	0	0	134,529
50-Construction	2,000	13,157	59,861	84,255	84,885	20,595	0	0	264,753
55-Construction Services	17	3,049	3,781	3,905	4,972	3,584	29	0	19,337
Total	56,693	99,847	79,095	92,773	94,385	25,236	1,191	0	449,220

Budget Risk Assessment		Schedule Risk Assessment	
Estimate Type:	Construction	Schedule Risk Level:	High
Budget Risk Level:	High	2016 Budget Schedule:	2022
		2017 Budget Schedule:	2022

Project Risk Assessment
Design challenges and coordination efforts with third parties, stakeholders, and jurisdictions have the potential to impact both the budget and the schedule for completing design activities. This could result in potential schedule delays affecting the opening of the facility in 2020 and add costs to the project.

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 expansion projects; and centralize procurement of the LRVs for Northgate Link Extension, Lynnwood Link Extension and East Link Extension into one project.

Changes in project budget 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:	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		

TIP Cashflow (in thousands)

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
Snohomish	1,295	7,144	3,164	11,897	14,830	17,873	19,561	12,196	87,961
North King	3,237	17,860	7,910	29,741	37,075	44,684	48,903	30,490	219,902
South King	1,403	7,739	3,428	12,888	16,066	19,363	21,191	13,213	95,291
East King	4,856	26,790	11,866	44,612	55,613	67,025	73,355	45,736	329,853
Total	10,791	59,534	26,368	99,138	123,584	148,945	163,010	101,635	733,006

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	351	451	405	529	560	571	545	1,336	4,748
55-Construction Services	1,853	1,217	1,850	2,075	1,712	1,828	1,650	1,906	14,090
70-Vehicles	8,587	57,867	24,113	96,535	121,312	146,546	160,815	98,393	714,168
Total	10,791	59,534	26,368	99,138	123,584	148,945	163,010	101,635	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
The project is in the initial stages of development and identified risks include establishing a set of specifications that assure the new LRV(s) are system compatible and are interchangeable with the existing fleet.

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 project budget 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:	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		

TIP Cashflow (in thousands)

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
North King	778,810	258,860	320,679	224,551	100,171	43,759	14,457	158,468	1,899,756
Total	778,810	258,860	320,679	224,551	100,171	43,759	14,457	158,468	1,899,756

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	45,980	14,343	17,628	14,561	11,401	9,830	7,759	26,378	147,879
20-Prelim Engineering/Env Review	15,077	0	0	0	0	0	0	0	15,077
30-Final Design+Specifications	102,979	3,778	5,544	4,996	3,000	2,444	586	5,841	129,167
35-Third Party	6,777	1,752	1,276	737	350	213	250	446	11,800
40-Row Acquisition+Permits	102,421	2,496	681	200	0	0	0	6,502	112,300
50-Construction	459,270	218,371	280,898	192,337	72,613	17,266	1,251	88,088	1,330,093
55-Construction Services	46,307	18,120	14,653	10,504	7,739	8,734	3,239	9,014	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	778,810	258,860	320,679	224,551	100,171	43,759	14,457	158,468	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
Risks associated with underground conditions, limited site access, deep stations and groundborne noise and vibration have the potential to impact costs and schedule. This remains a potential for delaying critical path work.

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 in project budget 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:	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		

TIP Cashflow (in thousands)

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
North King	1,519,568	7,795	2,639	21,389	204,616	0	0	0	1,756,007
Total	1,519,568	7,795	2,639	21,389	204,616	0	0	0	1,756,007

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	80,922	1,457	1,523	4,707	24,945	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	87,406	1,099	0	0	1,802	0	0	0	90,308
35-Third Party	11,880	160	52	1,235	5,319	0	0	0	18,646
40-Row Acquisition+Permits	126,440	0	0	0	25,892	0	0	0	152,332
50-Construction	992,480	4,450	1,064	12,079	138,710	0	0	0	1,148,783
55-Construction Services	87,294	628	0	944	5,948	0	0	0	94,814
70-Vehicles	99,485	0	0	2,424	2,000	0	0	0	103,909
80-System Testing+Startup	9,400	0	0	0	0	0	0	0	9,400
Total	1,519,568	7,795	2,639	21,389	204,616	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

With the opening of University Link for revenue service in March 2016, project budget and schedule risks are very low.

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 and is expected to began revenue service operation in the 3rd Quarter of 2016.

The indexing of the project estimate to 2016 constant dollars results in a higher estimate than the actual cost as the project is at substantial completion and has expended its budget in prior years.

Changes in project budget 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:	6-Proceed to Construction	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		

TIP Cashflow (in thousands)

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
South King	322,010	9,428	23,569	28,234	0	0	0	0	383,241
Total	322,010	9,428	23,569	28,234	0	0	0	0	383,241

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	15,889	1,170	83	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	8,848	100	576	0	0	0	0	0	9,523
35-Third Party	4,045	77	2,963	0	0	0	0	0	7,085
40-Row Acquisition+Permits	38,045	100	5,404	0	0	0	0	0	43,549
50-Construction	232,266	7,381	13,141	28,234	0	0	0	0	281,022
55-Construction Services	15,376	600	1,345	0	0	0	0	0	17,322
80-System Testing+Startup	1,844	0	56	0	0	0	0	0	1,900
Total	322,010	9,428	23,569	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
After the project opens for revenue service in September 2016, the budget and schedule risk will be low.

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 in project budget 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:	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		

TIP Cashflow (in thousands)

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
North King	3,621	2,360	3,705	4,087	3,331	2,117	1,457	1,384	22,063
East King	599,890	391,013	613,858	677,118	551,850	350,680	241,438	229,240	3,655,087
Total	603,511	393,373	617,564	681,205	555,181	352,797	242,896	230,624	3,677,150

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	54,937	14,571	17,308	18,725	19,060	18,275	18,110	25,215	186,200
20-Prelim Engineering/Env Review	54,521	250	126	250	250	250	250	3	55,900
30-Final Design+Specifications	194,921	20,717	20,297	14,405	12,990	8,024	6,000	5,646	283,000
35-Third Party	8,595	6,652	7,312	8,187	7,557	6,068	4,621	3,160	52,150
40-Row Acquisition+Permits	190,994	68,074	16,173	9,388	8,834	4,000	650	37	298,150
50-Construction	72,538	251,753	515,326	586,647	467,944	286,925	185,919	177,247	2,544,300
55-Construction Services	27,004	31,356	41,022	43,603	38,546	29,256	27,346	19,316	257,450
Total	603,511	393,373	617,564	681,205	555,181	352,797	242,896	230,624	3,677,150

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

The project presents technical and third party approval challenges, and requires close coordination with stakeholders and other governmental jurisdictions. Timely decision-making, maintaining the schedule on the issuance of the NTPs on the various construction segments are key in commencing the overall construction activities in 2017. Project costs continues to be heavily influenced by the competitiveness in the construction and labor market. While ROW phase is adequately budgeted, the inflationary real estate market has been a consistent risk to ST acquisition schedule due to longer as well as tougher negotiation timeline.

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 in project budget 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:	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		

TIP 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 in project budget 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:	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		

TIP Cashflow (in thousands)

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
North King	132,728	8	8	8	8	8	8	8	132,780
Total	132,728	8	8	8	8	8	8	8	132,780

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	237	8	8	8	8	8	8	8	289
35-Third Party	132,491	0	0	0	0	0	0	0	132,491
Total	132,728	8	8	8	8	8	8	8	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 in revenue service and overall budget and schedule risk is low.

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
Preliminary Engineering									
300004 Sounder Maintenance Base	3,011	3,367	463	0	0	0	0	0	6,841
300017 Puyallup Station Improvements	3,661	4,379	375	0	0	0	0	0	8,414
300018 Sumner Station Improvements	5,387	701	384	0	0	0	0	0	6,472
300019 Lakewood Station Improvements	375	29	0	0	0	0	0	0	404
300035 Kent Station Access Improvements	271	506	54	0	0	0	0	0	831
300040 Auburn Station Access Improvement	271	506	54	0	0	0	0	0	831
Subtotal	12,976	9,487	1,329	0	0	0	0	0	23,793
Final Design & ROW									
3X510 Sounder South Expanded Service	194,583	4,800	120	2,464	0	0	0	0	201,968
Subtotal	194,583	4,800	120	2,464	0	0	0	0	201,968
Baseline									
300021 Tacoma Trestle Track & Signal	85,935	38,133	36,997	0	0	0	0	0	161,065
300026 Sounder Yard Expansion	11,940	4,755	3,855	0	0	0	0	0	20,550
300027 Point Defiance Bypass	62,587	6,972	14,111	0	0	0	0	0	83,670
3X130 M St-Lakewood Track & Signal	80,435	0	219	0	0	0	0	0	80,654
3X135 D St-M St Track & Signal	152,831	71	5,360	0	0	0	0	0	158,262
3X206 Mukilteo Station, S Platform	16,777	320	1,216	0	0	0	0	0	18,313
3X236 Tukwila Station	37,446	366	0	8,157	0	0	0	0	45,969
Subtotal	447,950	50,617	61,758	8,157	0	0	0	0	568,482
Operating									
7X755 Sounder ST2 Fleet Expansion	45,701	3,829	0	0	0	0	0	0	49,530
Subtotal	45,701	3,829	0	0	0	0	0	0	49,530
Total	\$701,211	\$68,733	\$63,207	\$10,622	\$0	\$0	\$0	\$0	\$843,773

2017 TIP Cashflow by Subarea
(in thousands)

System Expansion
SOUNDER

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
1 - Snohomish	17,228	825	1,286	0	0	0	0	0	19,339
3 - South King	44,268	3,879	2,135	8,157	0	0	0	0	58,440
5 - Pierce	639,715	64,029	59,786	2,464	0	0	0	0	765,994
Total	\$701,211	\$68,733	\$63,207	\$10,622	\$0	\$0	\$0	\$0	\$843,773

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	26,936	4,637	1,957	1,141	0	0	0	0	34,672
20-Prelim Engineering/Env Review	15,893	4,842	1,794	0	0	0	0	0	22,529
30-Final Design+Specifications	39,988	2,062	2,365	552	0	0	0	0	44,966
35-Third Party	1,500	1,256	340	130	0	0	0	0	3,226
40-Row Acquisition+Permits	267,290	4,201	2,081	1,860	0	0	0	0	275,432
50-Construction	268,127	43,204	47,511	6,402	0	0	0	0	365,244
55-Construction Services	16,785	4,703	7,157	536	0	0	0	0	29,182
70-Vehicles	63,605	3,829	0	0	0	0	0	0	67,434
80-System Testing+Startup	1,046	0	0	0	0	0	0	0	1,046
Total	\$701,211	\$68,733	\$63,207	\$10,622	\$0	\$0	\$0	\$0	\$843,773

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 in project budget 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:	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:	\$6,841		

TIP Cashflow (in thousands)

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
Snohomish	452	505	69	0	0	0	0	0	1,026
Pierce	2,560	2,862	393	0	0	0	0	0	5,815
Total	3,011	3,367	463	0	0	0	0	0	6,841

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	604	186	70	0	0	0	0	0	860
20-Prelim Engineering/Env Review	1,777	3,066	273	0	0	0	0	0	5,116
40-Row Acquisition+Permits	630	115	120	0	0	0	0	0	865
Total	3,011	3,367	463	0	0	0	0	0	6,841

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:	2016

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

300017

Puyallup Station Improvements

Managed by: PEPD

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 in project budget 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:	3-Identify Preferred Alternative	2008 Cost Estimate:	\$73,587
Baseline:	\$0	2016 Cost Estimate:	\$62,254
2016 TIP:	\$8,414	2017 Cost Estimate:	\$62,254
2017 TIP:	\$8,414		

TIP Cashflow (in thousands)

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
Pierce	3,661	4,379	375	0	0	0	0	0	8,414
Total	3,661	4,379	375	0	0	0	0	0	8,414

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	580	141	36	0	0	0	0	0	757
20-Prelim Engineering/Env Review	1,823	518	339	0	0	0	0	0	2,680
40-Row Acquisition+Permits	1,257	3,720	0	0	0	0	0	0	4,977
Total	3,661	4,379	375	0	0	0	0	0	8,414

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:	2017

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

300018

Sumner Station Improvements

Managed by: PEPD

Scope: The Sumner Station Access Improvement Project is evaluating potential 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 in project budget 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:	3-Identify Preferred Alternative	2008 Cost Estimate:	\$52,034
Baseline:	\$0	2016 Cost Estimate:	\$47,449
2016 TIP:	\$6,472	2017 Cost Estimate:	\$47,449
2017 TIP:	\$6,472		

TIP Cashflow (in thousands)

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
Pierce	5,387	701	384	0	0	0	0	0	6,472
Total	5,387	701	384	0	0	0	0	0	6,472

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	589	144	29	0	0	0	0	0	762
20-Prelim Engineering/Env Review	1,828	518	339	0	0	0	0	0	2,685
40-Row Acquisition+Permits	2,873	39	0	0	0	0	0	0	2,912
50-Construction	97	0	16	0	0	0	0	0	113
Total	5,387	701	384	0	0	0	0	0	6,472

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:	2017

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

300019

Lakewood Station Improvements

Managed by: PEPD

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 in project budget 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:	Pending	2008 Cost Estimate:	\$46,948
Baseline:	\$0	2016 Cost Estimate:	\$39,953
2016 TIP:	\$404	2017 Cost Estimate:	\$39,953
2017 TIP:	\$404		

TIP Cashflow (in thousands)

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
Pierce	375	29	0	0	0	0	0	0	404
Total	375	29	0	0	0	0	0	0	404

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	37	3	0	0	0	0	0	0	40
35-Third Party	338	25	0	0	0	0	0	0	363
Total	375	29	0	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

Currently this project is a capped contribution in support of a local grant match minimizing the project risk.

300035

Kent Station Access Improvements

Managed by: PEPD

Evaluate 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 in project budget 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:	1-Enter Project Development	2008 Cost Estimate:	\$33,115
Baseline:	\$0	2016 Cost Estimate:	\$33,145
2016 TIP:	\$831	2017 Cost Estimate:	\$33,115
2017 TIP:	\$831		

TIP Cashflow (in thousands)

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
South King	271	506	54	0	0	0	0	0	831
Total	271	506	54	0	0	0	0	0	831

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	75	107	25	0	0	0	0	0	207
20-Prelim Engineering/Env Review	180	365	29	0	0	0	0	0	574
40-Row Acquisition+Permits	16	34	0	0	0	0	0	0	50
Total	271	506	54	0	0	0	0	0	831

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
Achieving local jurisdiction consensus on scope and budget remains a key to project development.

300040

Auburn Station Access Improvement

Managed by: PEPD

Evaluate 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 in project budget 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:	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		

TIP Cashflow (in thousands)

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
South King	271	506	54	0	0	0	0	0	831
Total	271	506	54	0	0	0	0	0	831

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	75	107	25	0	0	0	0	0	207
20-Prelim Engineering/Env Review	180	365	29	0	0	0	0	0	574
40-Row Acquisition+Permits	16	34	0	0	0	0	0	0	50
Total	271	506	54	0	0	0	0	0	831

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

Achieving local jurisdiction consensus on scope and budget remains the focus during project development.
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3X510

Souder 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 in project budget 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:	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		

TIP Cashflow (in thousands)

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
Pierce	194,583	4,800	120	2,464	0	0	0	0	201,968
Total	194,583	4,800	120	2,464	0	0	0	0	201,968

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	1,203	300	50	146	0	0	0	0	1,700
20-Prelim Engineering/Env Review	479	0	0	0	0	0	0	0	479
30-Final Design+Specifications	254	370	20	256	0	0	0	0	900
35-Third Party	30	40	0	130	0	0	0	0	200
40-Row Acquisition+Permits	185,211	40	0	1,235	0	0	0	0	186,485
50-Construction	7,407	4,000	50	597	0	0	0	0	12,054
55-Construction Services	0	50	0	100	0	0	0	0	150
Total	194,583	4,800	120	2,464	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
N/A

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 in project budget 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:	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		

TIP Cashflow (in thousands)

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
Pierce	85,935	38,133	36,997	0	0	0	0	0	161,065
Total	85,935	38,133	36,997	0	0	0	0	0	161,065

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	4,892	2,524	679	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	12,438	1,640	1,121	0	0	0	0	0	15,198
35-Third Party	491	1,190	101	0	0	0	0	0	1,781
40-Row Acquisition+Permits	9,761	33	267	0	0	0	0	0	10,061
50-Construction	52,048	30,196	32,043	0	0	0	0	0	114,288
55-Construction Services	2,244	2,550	2,787	0	0	0	0	0	7,581
Total	85,935	38,133	36,997	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

The schedule has been accelerated in order to meet a Fall 2017 completion date which allows for maximum use of expiring grant revenues. Several challenges to the construction of the project are recognized and may result in potential lost of grant revenues supporting the project.

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 in project budget 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:	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		

TIP Cashflow (in thousands)

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
South King	6,280	2,501	2,027	0	0	0	0	0	10,809
Pierce	5,660	2,254	1,827	0	0	0	0	0	9,741
Total	11,940	4,755	3,855	0	0	0	0	0	20,550

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	836	204	160	0	0	0	0	0	1,200
20-Prelim Engineering/Env Review	1,233	10	786	0	0	0	0	0	2,029
40-Row Acquisition+Permits	250	10	140	0	0	0	0	0	400
50-Construction	8,912	4,058	2,551	0	0	0	0	0	15,521
55-Construction Services	709	473	218	0	0	0	0	0	1,400
Total	11,940	4,755	3,855	0	0	0	0	0	20,550

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

Project Risk Assessment

Any risk to completing this project is very low but diligence to complete in time for the addition of nine cab cars to be delivered in 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 in project budget 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:	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		

TIP Cashflow (in thousands)

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
Pierce	62,587	6,972	14,111	0	0	0	0	0	83,670
Total	62,587	6,972	14,111	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	2,349	810	0	0	0	0	0	0	3,159
30-Final Design+Specifications	148	42	10	0	0	0	0	0	200
40-Row Acquisition+Permits	210	170	20	0	0	0	0	0	400
50-Construction	54,558	4,350	10,715	0	0	0	0	0	69,623
55-Construction Services	5,280	1,600	3,366	0	0	0	0	0	10,246
Total	62,587	6,972	14,111	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

Due to grant requirements and potential expiration of grant fund eligibility, the project is on a very tight schedule to maximize reimbursement opportunities. Although mitigated through WSDOT financial commitment, there remains a risk that Sound Transit may be liable for a portion of the work not completed by grant submission deadlines.

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 will be completed in 2016.

Changes in project budget 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:	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		

TIP Cashflow (in thousands)

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
Pierce	80,435	0	219	0	0	0	0	0	80,654
Total	80,435	0	219	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	12,773	0	42	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	80,435	0	219	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 2017.

Funds cash flowed in 2018 are considered surplus.

Changes in project budget 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:	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		

TIP Cashflow (in thousands)

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
Pierce	152,831	71	5,360	0	0	0	0	0	158,262
Total	152,831	71	5,360	0	0	0	0	0	158,262

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	8,882	70	654	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	606	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	66,994	0	1,570	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	152,831	71	5,360	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
Continued coordination with local jurisdictions may result in additional requirements.

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 in project budget 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:	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		

TIP Cashflow (in thousands)

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
Snohomish	16,777	320	1,216	0	0	0	0	0	18,313
Total	16,777	320	1,216	0	0	0	0	0	18,313

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	1,404	20	116	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	35	0	0	0	0	0	0	0	35
40-Row Acquisition+Permits	1,778	0	0	0	0	0	0	0	1,778
50-Construction	9,556	300	507	0	0	0	0	0	10,363
55-Construction Services	1,764	0	186	0	0	0	0	0	1,950
Total	16,777	320	1,216	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
Schedule delays have pushed the project completion into 2016 as the certificate of occupancy issuance was delayed.

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 in project budget 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:	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		

TIP Cashflow (in thousands)

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
South King	37,446	366	0	8,157	0	0	0	0	45,969
Total	37,446	366	0	8,157	0	0	0	0	45,969

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	1,757	21	0	995	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	4,619	10	0	296	0	0	0	0	4,924
40-Row Acquisition+Permits	10,378	5	0	626	0	0	0	0	11,009
50-Construction	17,976	300	0	5,805	0	0	0	0	24,081
55-Construction Services	1,615	30	0	436	0	0	0	0	2,081
Total	37,446	366	0	8,157	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
N/A.

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 in lifetime budget 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	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		

TIP Cashflow (in thousands)

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
Pierce	45,701	3,829	0	0	0	0	0	0	49,530
Total	45,701	3,829	0	0	0	0	0	0	49,530

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	2	0	0	0	0	0	0	0	2
70-Vehicles	45,699	3,829	0	0	0	0	0	0	49,528
Total	45,701	3,829	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
Preliminary Engineering									
500005 ST Express Bus Base	1,296	587	3,925	0	0	0	0	0	5,808
Subtotal	1,296	587	3,925	0	0	0	0	0	5,808
Final Design & ROW									
500030 Bothell Transit Related Improvements	4	5,036	0	0	0	0	0	0	5,040
Subtotal	4	5,036	0	0	0	0	0	0	5,040
Baseline									
500020 ST Express Mid-Day Bus Storage	2,315	0	813	0	0	0	0	0	3,128
5X142 Kirkland Transit Center/3rd	10,828	0	132	0	0	0	0	0	10,959
5X387 I-90 Two-Way Transit & HOV Operations, Stage 3	164,034	23,721	8,565	0	29,328	0	0	0	225,648
Subtotal	177,178	23,721	9,510	0	29,328	0	0	0	239,736
Operating									
700720 ST Express Fleet Expansion	4,897	13,649	21,211	0	0	0	0	0	39,757
Subtotal	4,897	13,649	21,211	0	0	0	0	0	39,757
Total	\$183,375	\$42,992	\$34,646	\$0	\$29,328	\$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	844	1,811	3,354	0	0	0	0	0	6,009
3 - South King	684	1,556	2,767	0	0	0	0	0	5,007
4 - East King	179,015	38,911	25,879	0	29,328	0	0	0	273,133
5 - Pierce	2,832	714	2,646	0	0	0	0	0	6,192
Total	\$183,375	\$42,992	\$34,646	\$0	\$29,328	\$0	\$0	\$0	\$290,341

2017 TIP Cashflow by Phase
(in thousands)

Phase # and Description	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	3,239	389	727	0	1,483	0	0	0	5,838
20-Prelim Engineering/Env Review	3,830	505	3,360	0	0	0	0	0	7,695
30-Final Design+Specifications	19,883	40	36	0	4,191	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	151,096	23,400	8,983	0	23,654	0	0	0	207,133
55-Construction Services	238	0	32	0	0	0	0	0	270
70-Vehicles	4,897	13,649	21,211	0	0	0	0	0	39,757
90-Contingency	0	0	100	0	0	0	0	0	100
Total	\$183,375	\$42,992	\$34,646	\$0	\$29,328	\$0	\$0	\$0	\$290,341

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 in project budget 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:	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		

TIP Cashflow (in thousands)

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
Snohomish	232	105	703	0	0	0	0	0	1,040
South King	150	68	455	0	0	0	0	0	674
East King	603	273	1,825	0	0	0	0	0	2,701
Pierce	311	141	942	0	0	0	0	0	1,394
Total	1,296	587	3,925	0	0	0	0	0	5,808

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	395	72	377	0	0	0	0	0	844
20-Prelim Engineering/Env Review	898	505	3,360	0	0	0	0	0	4,763
40-Row Acquisition+Permits	3	10	188	0	0	0	0	0	201
Total	1,296	587	3,925	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:	2016

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 in project budget 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	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		

TIP 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

The execution of the grant matching contribution is reliant on the city of Bothell receiving the grant award. As such the actual payment may be carried over year to year until such time the grant is received.

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 in project budget 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:	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		

TIP Cashflow (in thousands)

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
Pierce	2,315	0	813	0	0	0	0	0	3,128
Total	2,315	0	813	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	1,201	0	610	0	0	0	0	0	1,811
55-Construction Services	238	0	32	0	0	0	0	0	270
Total	2,315	0	813	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
N/A

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 in project budget 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:	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		

TIP Cashflow (in thousands)

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
East King	10,828	0	132	0	0	0	0	0	10,959
Total	10,828	0	132	0	0	0	0	0	10,959

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	948	0	5	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	10,828	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
N/A

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 in project budget 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:	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		

TIP Cashflow (in thousands)

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
East King	164,034	23,721	8,565	0	29,328	0	0	0	225,648
Total	164,034	23,721	8,565	0	29,328	0	0	0	225,648

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	1,666	281	219	0	1,483	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	17,890	40	0	0	4,191	0	0	0	22,121
50-Construction	142,930	23,400	8,347	0	23,654	0	0	0	198,330
Total	164,034	23,721	8,565	0	29,328	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
Fire Life Safety in a tunnel retrofit does create risk in cost and in schedule. Commissioning of the fire life safety equipment and system will require a multi-phase detailed plan through commissioning. Other construction risks are known and suitable contingencies and project schedule float included in the baseline budget.

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

Board Approved Capital Budget (in thousands of YOE dollars)		ST2 Total Project Cost Estimate (in thousands of 2016 dollars)	
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		

TIP Cashflow (in thousands)

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
Snohomish	612	1,706	2,651	0	0	0	0	0	4,970
South King	534	1,488	2,312	0	0	0	0	0	4,333
East King	3,545	9,882	15,357	0	0	0	0	0	28,784
Pierce	206	573	891	0	0	0	0	0	1,670
Total	4,897	13,649	21,211	0	0	0	0	0	39,757

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
70-Vehicles	4,897	13,649	21,211	0	0	0	0	0	39,757
Total	4,897	13,649	21,211	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 TIP Cashflow by Budget Approval

(in thousands)

System Expansion
OTHER

Project Number and Name	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
Preliminary Engineering									
809100 ST3 Planning	21,291	6,850	24,507	0	0	0	0	0	52,648
809103 Central & East HCT Study	2,152	0	0	0	0	0	0	0	2,152
Subtotal	23,442	6,850	24,507	0	0	0	0	0	54,800
Baseline									
6X668 SStart	16,804	1,390	6,662	6,188	4,235	3,451	2,076	8,462	49,267
Subtotal	16,804	1,390	6,662	6,188	4,235	3,451	2,076	8,462	49,267
Operating									
600668 SStart Operations & Maintenance	905	239	184	171	180	183	189	2,877	4,927
Subtotal	905	239	184	171	180	183	189	2,877	4,927
Program									
3X212 Fare Collection	8,741	148	388	351	735	397	360	3,619	14,739
5X410 Research & Technology	10,173	2,297	2,696	2,801	2,034	0	0	0	20,000
600016 Fare Administration	943	600	5,638	673	500	1,086	4,352	2,310	16,103
600039 Fare Policy Program	0	400	400	300	300	108	0	0	1,508
Subtotal	19,857	3,445	9,123	4,124	3,569	1,591	4,713	5,929	52,351
Total	\$61,008	\$11,924	\$40,476	\$10,483	\$7,983	\$5,225	\$6,978	\$17,267	\$161,344

2017 TIP Cashflow by Subarea
(in thousands)

System Expansion
OTHER

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
1 - Snohomish	3,676	192	757	701	596	444	302	1,915	8,583
2 - North King	5,220	381	1,602	1,488	1,033	850	530	2,653	13,757
3 - South King	6,503	361	1,434	1,328	1,100	830	558	3,449	15,563
4 - East King	8,528	667	2,797	2,598	1,817	1,490	932	4,716	23,545
5 - Pierce	4,675	175	644	594	604	416	303	2,224	9,635
6 - Systemwide	32,407	10,147	33,241	3,774	2,834	1,194	4,352	2,310	90,259
Total	\$61,008	\$11,924	\$40,476	\$10,483	\$7,983	\$5,225	\$6,978	\$17,267	\$161,344

2017 TIP Cashflow by Phase
(in thousands)

Phase # and Description	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
01-Operation+Maintenance	259	95	98	101	104	107	110	614	1,488
02-Operation+Maintenance-Agency	645	144	86	70	76	76	79	2,263	3,439
10-Agency Administration	5,878	2,578	2,093	747	845	346	316	1,991	14,794
20-Prelim Engineering/Env Review	22,851	5,850	23,666	379	300	208	75	94	53,424
26-Research+Technology	7,352	2,117	7,684	3,004	2,122	986	4,277	2,216	29,757
40-Row Acquisition+Permits	52	100	148	0	0	0	0	0	300
50-Construction	8,039	0	388	351	668	397	360	3,202	13,405
61-Art	15,932	1,040	6,312	5,832	3,869	3,105	1,760	6,887	44,737
Total	\$61,008	\$11,924	\$40,476	\$10,483	\$7,983	\$5,225	\$6,978	\$17,267	\$161,344

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 in project budget 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:	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		

TIP Cashflow (in thousands)

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
Systemwide	21,291	6,850	24,507	0	0	0	0	0	52,648
Total	21,291	6,850	24,507	0	0	0	0	0	52,648

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	2,972	1,500	1,366	0	0	0	0	0	5,838
20-Prelim Engineering/Env Review	18,267	5,250	22,993	0	0	0	0	0	46,510
40-Row Acquisition+Permits	52	100	148	0	0	0	0	0	300
Total	21,291	6,850	24,507	0	0	0	0	0	52,648

Budget Risk Assessment		Schedule Risk Assessment	
Estimate Type:	Planning	Schedule Risk Level:	Low
Budget 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 in project budget since 2016: None.

Board Approved Capital Budget (in thousands of YOE dollars)	
Phase Gate Passed:	1-Enter Project Development
Baseline:	\$0
2016 TIP:	\$2,152
2017 TIP:	\$2,152

ST2 Total Project Cost Estimate (in thousands of 2016 dollars)	
2008 Cost Estimate:	N/A
2016 Cost Estimate:	\$2,141
2017 Cost Estimate:	\$2,141

TIP Cashflow (in thousands)

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

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	142	0	0	0	0	0	0	0	142
20-Prelim Engineering/Env Review	2,010	0	0	0	0	0	0	0	2,010
Total	2,152	0	0	0	0	0	0	0	2,152

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

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

Project Risk Assessment
N/A

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 in project budget 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	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		

TIP Cashflow (in thousands)

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
Snohomish	1,647	136	653	606	415	338	203	829	4,828
North King	3,932	325	1,559	1,448	991	808	486	1,980	11,529
South King	3,176	263	1,259	1,170	800	652	392	1,599	9,312
East King	6,839	566	2,711	2,519	1,724	1,405	845	3,444	20,052
Pierce	1,210	100	480	446	305	248	149	609	3,547
Total	16,804	1,390	6,662	6,188	4,235	3,451	2,076	8,462	49,267

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	872	350	350	356	366	346	316	1,574	4,530
61-Art	15,932	1,040	6,312	5,832	3,869	3,105	1,760	6,887	44,737
Total	16,804	1,390	6,662	6,188	4,235	3,451	2,076	8,462	49,267

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 in project budget 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	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		

TIP Cashflow (in thousands)

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
Snohomish	89	23	18	17	18	18	19	282	483
North King	212	56	43	40	42	43	44	673	1,153
South King	171	45	35	32	34	35	36	544	931
East King	368	97	75	70	73	74	77	1,171	2,005
Pierce	65	17	13	12	13	13	14	207	355
Total	905	239	184	171	180	183	189	2,877	4,927

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
01-Operation+Maintenance	259	95	98	101	104	107	110	614	1,488
02-Operation+Maintenance-Agency	645	144	86	70	76	76	79	2,263	3,439
Total	905	239	184	171	180	183	189	2,877	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

3X212 **Fare Collection** **Managed by: FIT**

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 in project budget 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	2008 Cost Estimate:	N/A
Baseline:	\$0	2016 Cost Estimate:	N/A
2016 TIP:	\$14,870	2017 Cost Estimate:	N/A
2017 TIP:	\$14,870		

TIP Cashflow (in thousands)

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
Snohomish	1,941	33	86	78	163	88	80	803	3,272
South King	3,156	53	140	127	265	143	130	1,306	5,321
East King	245	4	11	10	21	11	10	101	413
Pierce	3,400	58	151	136	286	154	140	1,408	5,734
Total	8,741	148	388	351	735	397	360	3,619	14,739

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	552	148	0	0	67	0	0	417	1,184
20-Prelim Engineering/Env Review	150	0	0	0	0	0	0	0	150
50-Construction	8,039	0	388	351	668	397	360	3,202	13,405
Total	8,741	148	388	351	735	397	360	3,619	14,739

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 in project budget 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:	\$20,000	2017 Cost Estimate:	N/A
2017 TIP:	\$20,000		

TIP Cashflow (in thousands)

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
Systemwide	10,173	2,297	2,696	2,801	2,034	0	0	0	20,000
Total	10,173	2,297	2,696	2,801	2,034	0	0	0	20,000

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	1,339	580	378	391	412	0	0	0	3,100
20-Prelim Engineering/Env Review	1,595	0	0	5	0	0	0	0	1,600
26-Research+Technology	7,238	1,717	2,319	2,405	1,622	0	0	0	15,300
Total	10,173	2,297	2,696	2,801	2,034	0	0	0	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 in project budget since 2016: \$1.5 million transferred to the new Fare Policy Program project.

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:	\$17,611	2017 Cost Estimate:	N/A
2017 TIP:	\$16,103		

TIP Cashflow (in thousands)

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
Systemwide	943	600	5,638	673	500	1,086	4,352	2,310	16,103
Total	943	600	5,638	673	500	1,086	4,352	2,310	16,103

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	0	0	0	0	0	0	0	0	0
20-Prelim Engineering/Env Review	830	200	273	74	0	100	75	94	1,646
26-Research+Technology	114	400	5,365	599	500	986	4,277	2,216	14,457
Total	943	600	5,638	673	500	1,086	4,352	2,310	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

600039	Fare Policy Program	Managed by: FIT
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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 in project budget since 2016: \$1.5 million transferred to new Fare Policy Program from Fare Administration.

Board Approved Capital Budget (in thousands of YOE dollars)	ST2 Total Project Cost Estimate (in thousands of 2016 dollars)
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

TIP 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).
- Complete and certify Positive Train Control (PTC) to increase operational safety of commuter rail in accordance with National Transportation Safety Board requirements.
- Complete 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.

BUDGET CHANGES

(in thousands)

Enhancement

Project	Reason	Budget Type	Explanation	Change
LINK				
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 (OMF) shop bay lighting and HVAC controls to increase energy efficiency and reduce operating costs.	\$1,098
SOUNDER				
Customer Emergency Stations	New Project	Operating	Customer emergency stations are required at the Kent and Auburn parking garages.	\$800
Locomotive Inboard Cameras	New Project	Operating	New FRA rule that requires inboard facing cameras to monitor the actions of the engineers in handling a train.	\$300
SCR 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
REGIONAL EXPRESS				
Bellevue TC Security System	New Project	Operating	Security systems are required at the Bellevue Transit Center.	\$150

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
Preliminary Engineering									
5X261 Bus Maintenance Facility	9,374	0	12,659	0	0	0	0	0	22,033
700723 Downtown Seattle Transit Tunnel Mitigation	500	1,834	0	0	0	0	0	0	2,334
700730 Operations & Maintenance Facility LRV Lift	661	4,237	0	0	0	0	0	0	4,898
700736 Union Station Garden Level Remodel	302	1,082	0	0	0	0	0	0	1,383
700784 Regional Parking Pilot Project	475	0	0	0	0	0	0	0	475
700793 Signage Improvements	197	735	0	0	0	0	0	0	931
700798 Link Remote Switch Heaters	16	184	0	0	0	0	0	0	200
Subtotal	11,524	8,071	12,659	0	0	0	0	0	32,255
Baseline									
300011 Positive Train Control	37,579	8,002	0	7,474	0	0	0	0	53,054
4X210 LRV On Board Energy Storage	1,580	0	63	0	0	0	0	0	1,643
4X340 Noise Abatement	8,999	130	3,871	0	0	0	0	0	13,000
600029 Tacoma Link Fare Collection	64	0	0	0	0	0	382	67	514
700774 Central Link HVAC - Instrument House and UPS Room	1,146	86	0	0	0	0	0	0	1,232
7X753 Bike Locker Program	1,315	39	0	0	0	0	0	0	1,355
Subtotal	50,684	8,257	3,934	7,474	0	0	382	67	70,797
Operating									
700706 OMF Energy Efficiency	0	1,042	38	18	0	0	0	0	1,098
700707 Bellevue TC Security System	0	150	0	0	0	0	0	0	150
700708 Customer Emergency Stations	0	300	500	0	0	0	0	0	800
700710 Locomotive Inboard Cameras	0	300	0	0	0	0	0	0	300
700711 SCR Passenger Emergency Intercom	0	750	750	0	0	0	0	0	1,500
700712 LRV Wheel Flat Software	0	250	0	0	0	0	0	0	250
700713 LRV Wash Bay Modifications	0	300	0	0	0	0	0	0	300
700724 Puyallup Station LED Lighting	178	0	0	0	0	0	0	0	178
700725 Summer Station LED Lighting	134	0	0	0	0	0	0	0	134
700726 Kent Station Platform Lighting	236	0	0	0	0	0	0	0	236
700727 Kent Station Parking Lot Paving	65	635	0	0	0	0	0	0	700
700733 OMF LRV Wash Heater System	300	0	0	0	0	0	0	0	300

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
700775 Central Link Card Readers	128	295	0	0	0	0	0	0	423
700777 Central Link Overhead Catenary System Tie Switch	155	2,845	0	0	0	0	0	0	3,000
Subtotal	1,196	6,867	1,288	18	0	0	0	0	9,369
Program									
700781 Non-revenue Support Vehicles	1,276	316	256	223	58	0	0	0	2,130
804100 Transit-Oriented Development Property Disposition	3,613	2,758	2,130	1,480	1,050	584	0	0	11,615
Subtotal	4,890	3,074	2,386	1,703	1,108	584	0	0	13,745
Total	\$68,294	\$26,270	\$20,267	\$9,194	\$1,108	\$584	\$382	\$67	\$126,166

2017 TIP Cashflow by Subarea
(in thousands)

Enhancement
ALL MODES

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
1 - Snohomish	4,189	725	2,110	531	0	0	0	0	7,554
2 - North King	15,165	12,283	5,032	1,640	1,089	584	0	0	35,792
3 - South King	7,412	4,539	3,588	409	20	0	0	0	15,967
4 - East King	4,463	151	6,000	0	0	0	0	0	10,615
5 - Pierce	36,287	7,490	3,538	6,614	0	0	382	67	54,379
6 - Systemwide	777	1,082	0	0	0	0	0	0	1,858
Total	\$68,294	\$26,270	\$20,267	\$9,194	\$1,108	\$584	\$382	\$67	\$126,166

2017 TIP Cashflow by Phase
(in thousands)

Phase # and Description	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	4,417	1,231	687	1,031	200	135	0	0	7,700
20-Prelim Engineering/Env Review	477	75	0	0	0	0	0	0	552
30-Final Design+Specifications	774	832	70	70	0	0	0	0	1,745
35-Third Party	3,010	3,224	0	367	0	0	0	0	6,601
40-Row Acquisition+Permits	3,006	1,740	1,554	1,100	800	449	0	0	8,649
50-Construction	50,764	17,015	16,598	1,529	50	0	382	0	86,338
55-Construction Services	2,912	408	1,102	3,151	0	0	0	0	7,573
70-Vehicles	2,849	316	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	25	0	1,725	0	0	0	67	1,817
Total	\$68,294	\$26,270	\$20,267	\$9,194	\$1,108	\$584	\$382	\$67	\$126,166

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 in project budget 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:	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		

TIP Cashflow (in thousands)

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
Snohomish	1,481	0	2,000	0	0	0	0	0	3,481
South King	1,041	0	1,405	0	0	0	0	0	2,446
East King	4,443	0	6,000	0	0	0	0	0	10,444
Pierce	2,409	0	3,253	0	0	0	0	0	5,662
Total	9,374	0	12,659	0	0	0	0	0	22,033

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	9,282	0	12,659	0	0	0	0	0	21,941
Total	9,374	0	12,659	0	0	0	0	0	22,033

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 in project budget 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	2008 Cost Estimate:	N/A
Baseline:	\$0	2016 Cost Estimate:	N/A
2016 TIP:	\$2,334	2017 Cost Estimate:	N/A
2017 TIP:	\$2,334		

TIP Cashflow (in thousands)

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
North King	500	1,834	0	0	0	0	0	0	2,334
Total	500	1,834	0	0	0	0	0	0	2,334

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
35-Third Party	500	1,834	0	0	0	0	0	0	2,334
Total	500	1,834	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: DECM**

Scope: Design, procure and install a second lift in the Link Operations and Maintenance Facility (OMF). 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 in project budget 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:	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		

TIP Cashflow (in thousands)

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
North King	564	3,615	0	0	0	0	0	0	4,179
South King	97	622	0	0	0	0	0	0	719
Total	661	4,237	0	0	0	0	0	0	4,898

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	237	162	0	0	0	0	0	0	399
20-Prelim Engineering/Env Review	200	0	0	0	0	0	0	0	200
30-Final Design+Specifications	200	0	0	0	0	0	0	0	200
50-Construction	24	3,812	0	0	0	0	0	0	3,836
55-Construction Services	0	263	0	0	0	0	0	0	263
Total	661	4,237	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.

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.

Change in project budget 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	2008 Cost Estimate:	N/A
Baseline:	\$0	2016 Cost Estimate:	N/A
2016 TIP:	\$1,383	2017 Cost Estimate:	N/A
2017 TIP:	\$1,383		

TIP Cashflow (in thousands)

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
Systemwide	302	1,082	0	0	0	0	0	0	1,383
Total	302	1,082	0	0	0	0	0	0	1,383

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	278	1,082	0	0	0	0	0	0	1,360
Total	302	1,082	0	0	0	0	0	0	1,383

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.

700784	Regional Parking Pilot Project	Managed by: Operations
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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 in project budget 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: \$475	2017 Cost Estimate: N/A
2017 TIP: \$475	

TIP Cashflow (in thousands)

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

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

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

Project Risk Assessment
N/A

700793	Signage Improvements	Managed by: Operations
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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.

TVM Signage Reface work was completed in 2016.

Changes in project budget 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: \$931	2016 Cost Estimate: N/A
2017 TIP: \$931	2017 Cost Estimate: N/A

TIP Cashflow (in thousands)

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
Snohomish	1	2	0	0	0	0	0	0	3
North King	94	351	0	0	0	0	0	0	445
South King	101	377	0	0	0	0	0	0	478
East King	0	1	0	0	0	0	0	0	1
Pierce	1	4	0	0	0	0	0	0	5
Total	197	735	0	0	0	0	0	0	931

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	54	22	0	0	0	0	0	0	76
30-Final Design+Specifications	94	0	0	0	0	0	0	0	94
50-Construction	16	712	0	0	0	0	0	0	728
55-Construction Services	33	0	0	0	0	0	0	0	33
Total	197	735	0	0	0	0	0	0	931

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

Project Risk Assessment
N/A

700798

Link Remote Switch Heaters

Managed by: Operations

Scope: Install remote switch heaters at Rainier Beach Station and Stadium Station interlockings to enhance the capabilities of providing all-weather service.

Changes in project budget 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	2008 Cost Estimate:	N/A
Baseline:	\$0	2016 Cost Estimate:	N/A
2016 TIP:	\$200	2017 Cost Estimate:	N/A
2017 TIP:	\$200		

TIP Cashflow (in thousands)

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
North King	16	184	0	0	0	0	0	0	200
Total	16	184	0	0	0	0	0	0	200

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	14	19	0	0	0	0	0	0	33
20-Prelim Engineering/Env Review	2	0	0	0	0	0	0	0	2
50-Construction	0	165	0	0	0	0	0	0	165
Total	16	184	0	0	0	0	0	0	200

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

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 in project budget 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:	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		

TIP Cashflow (in thousands)

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
Snohomish	2,668	568	0	531	0	0	0	0	3,767
South King	1,653	352	0	329	0	0	0	0	2,334
Pierce	33,257	7,081	0	6,614	0	0	0	0	46,953
Total	37,579	8,002	0	7,474	0	0	0	0	53,054

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	1,357	150	0	731	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	32,609	4,937	0	1,449	0	0	0	0	38,995
55-Construction Services	791	120	0	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	37,579	8,002	0	7,474	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.

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 in project budget 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:	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		

TIP 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
N/A

4X340	Noise Abatement	Managed by: DECM
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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 in project budget 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: 6-Proceed to Construction	
Baseline: \$13,000	2008 Cost Estimate: N/A
2016 TIP: \$13,000	2016 Cost Estimate: N/A
2017 TIP: \$13,000	2017 Cost Estimate: N/A

TIP Cashflow (in thousands)

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
North King	6,145	89	2,643	0	0	0	0	0	8,876
South King	2,855	41	1,228	0	0	0	0	0	4,124
Total	8,999	130	3,871	0	0	0	0	0	13,000

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	1,024	5	171	0	0	0	0	0	1,200
30-Final Design+Specifications	5	0	55	0	0	0	0	0	60
40-Row Acquisition+Permits	21	25	54	0	0	0	0	0	100
50-Construction	5,861	100	2,489	0	0	0	0	0	8,450
55-Construction Services	2,088	0	1,102	0	0	0	0	0	3,190
Total	8,999	130	3,871	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 in project budget 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	2008 Cost Estimate:	N/A
Baseline:	\$0	2016 Cost Estimate:	N/A
2016 TIP:	\$514	2017 Cost Estimate:	N/A
2017 TIP:	\$514		

TIP 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: DECM**

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 in project budget 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	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		

TIP Cashflow (in thousands)

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
North King	766	58	0	0	0	0	0	0	824
South King	379	28	0	0	0	0	0	0	408
Total	1,146	86	0	0	0	0	0	0	1,232

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	434	16	0	0	0	0	0	0	450
30-Final Design+Specifications	129	0	0	0	0	0	0	0	129
40-Row Acquisition+Permits	32	0	0	0	0	0	0	0	32
50-Construction	551	70	0	0	0	0	0	0	621
Total	1,146	86	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: DECM

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 in project budget since 2015: 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	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		

TIP Cashflow (in thousands)

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
Snohomish	39	1	0	0	0	0	0	0	41
North King	648	19	0	0	0	0	0	0	668
South King	364	11	0	0	0	0	0	0	375
East King	20	1	0	0	0	0	0	0	20
Pierce	243	7	0	0	0	0	0	0	251
Total	1,315	39	0	0	0	0	0	0	1,355

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	343	39	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	861	0	0	0	0	0	0	0	861
Total	1,315	39	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:	2016

Project Risk Assessment
N/A

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

Changes in project budget since 2016: \$1.1 million for new project.

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: \$0	2017 Cost Estimate: N/A
2017 TIP: \$1,098	

TIP 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: Initial Estimate	Schedule Risk Level: Medium
Budget Risk Level: Low	2016 Budget Schedule:
	2017 Budget Schedule: 2019

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

700707

Bellevue TC Security System

Managed by: Operations

Scope: Procure and install security systems in the Bellevue Transit Center.

Changes in project budget since 2016: \$150 thousand for new project.

Board Approved Capital Budget (in thousands of YOE 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:	\$0	2017 Cost Estimate:	N/A
2017 TIP:	\$150		

TIP 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.

700708 **Customer Emergency Stations** **Managed by: Operations**

Scope: Installation of customer emergency stations at the Kent and Auburn parking garages.

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

Board Approved Capital Budget (in thousands of YOE dollars)		ST2 Total Project Cost Estimate (in thousands of 2016 dollars)	
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

TIP 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**

New FRA rule that 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 in project budget since 2016: \$300 thousand new project.

Board Approved Capital Budget (in thousands of YOE 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:	\$0	2017 Cost Estimate:	N/A
2017 TIP:	\$300		

TIP 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 SCR Passenger Emergency Intercom Managed by: Operations

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 in project budget since 2016: \$1.5 million new project.

Board Approved Capital Budget (in thousands of YOE 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:	\$0	2017 Cost Estimate:	N/A
2017 TIP:	\$1,500		

TIP 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

700712	LRV Wheel Flat Software	Managed by: Operations
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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 in project budget since 2016: \$250 thousand for new project.

Board Approved Capital Budget (in thousands of YOE dollars)	ST2 Total Project Cost Estimate (in thousands of 2016 dollars)
Phase Gate Passed: None	2008 Cost Estimate: N/A
Baseline: \$0	2016 Cost Estimate: N/A
2016 TIP: \$0	2017 Cost Estimate: N/A
2017 TIP: \$250	

TIP 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: Initial Estimate	Schedule Risk Level: Low
Budget Risk Level: Low	2016 Budget Schedule:
	2017 Budget Schedule: 2017

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

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

Changes in project budget since 2016: \$300 thousand for new project.

Board Approved Capital Budget (in thousands of YOE 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: \$0	2017 Cost Estimate: N/A
2017 TIP: \$300	

TIP 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.

700724	Puyallup Station LED Lighting	Managed by: Operations
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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 in project budget 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: \$178	2016 Cost Estimate: N/A
2017 TIP: \$178	2017 Cost Estimate: N/A

TIP Cashflow (in thousands)

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

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

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
Risk is minimal for a straight procurement

700725	Sumner Station LED Lighting	Managed by: Operations
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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 in project budget 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	
Baseline: \$0	2008 Cost Estimate: N/A
2016 TIP: \$134	2016 Cost Estimate: N/A
2017 TIP: \$134	2017 Cost Estimate: N/A

TIP Cashflow (in thousands)

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

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

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
Risk is minimal for a straight procurement.

700726	Kent Station Platform Lighting	Managed by: Operations
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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 in project budget 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: \$236	2017 Cost Estimate: N/A
2017 TIP: \$236	

TIP Cashflow (in thousands)

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

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

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
Risk is minimal for a straight procurement.

700727

Kent Station Parking Lot Paving

Managed by: Operations

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 in project budget 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	2008 Cost Estimate:	N/A
Baseline:	\$0	2016 Cost Estimate:	N/A
2016 TIP:	\$700	2017 Cost Estimate:	N/A
2017 TIP:	\$700		

TIP Cashflow (in thousands)

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
South King	65	635	0	0	0	0	0	0	700
Total	65	635	0	0	0	0	0	0	700

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	0	0	0	0	0	0	0	0	0
20-Prelim Engineering/Env Review	65	75	0	0	0	0	0	0	140
50-Construction	0	560	0	0	0	0	0	0	560
Total	65	635	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.

700733	OMF LRV Wash Heater System	Managed by: Operations
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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 project budget 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: 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

TIP Cashflow (in thousands)

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
North King	201	0	0	0	0	0	0	0	201
South King	99	0	0	0	0	0	0	0	99
Total	300	0	0	0	0	0	0	0	300

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	135	0	0	0	0	0	0	0	135
50-Construction	165	0	0	0	0	0	0	0	165
Total	300	0	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: 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.

700775

Central Link Card Readers

Managed by: DECM

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 in project budget 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	2008 Cost Estimate:	N/A
Baseline:	\$0	2016 Cost Estimate:	N/A
2016 TIP:	\$423	2017 Cost Estimate:	N/A
2017 TIP:	\$423		

TIP Cashflow (in thousands)

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
North King	85	197	0	0	0	0	0	0	283
South King	42	98	0	0	0	0	0	0	140
Total	128	295	0	0	0	0	0	0	423

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	54	21	0	0	0	0	0	0	75
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	25	0	0	0	0	0	0	25
Total	128	295	0	0	0	0	0	0	423

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
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 in project budget 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	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		

TIP Cashflow (in thousands)

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
North King	104	1,903	0	0	0	0	0	0	2,007
South King	51	942	0	0	0	0	0	0	993
Total	155	2,845	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	155	2,845	0	0	0	0	0	0	3,000
Total	155	2,845	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.

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

Changes in lifetime budget since 2015: 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	2008 Cost Estimate: N/A
Baseline: \$0	2016 Cost Estimate: N/A
2016 TIP: \$2,130	2017 Cost Estimate: N/A
2017 TIP: \$2,130	

TIP Cashflow (in thousands)

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
North King	849	210	170	148	39	0	0	0	1,416
South King	428	106	86	75	20	0	0	0	713
Total	1,276	316	256	223	58	0	0	0	2,130

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
70-Vehicles	1,276	316	256	223	58	0	0	0	2,130
Total	1,276	316	256	223	58	0	0	0	2,130

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

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 in project budget 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:	\$11,615	2017 Cost Estimate:	N/A
2017 TIP:	\$11,615		

TIP Cashflow (in thousands)

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
North King	3,613	2,758	2,130	1,480	1,050	584	0	0	11,615
Total	3,613	2,758	2,130	1,480	1,050	584	0	0	11,615

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	731	530	430	300	200	135	0	0	2,326
40-Row Acquisition+Permits	2,880	1,715	1,500	1,100	800	449	0	0	8,444
50-Construction	2	513	200	80	50	0	0	0	845
Total	3,613	2,758	2,130	1,480	1,050	584	0	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.

BUDGET CHANGES

(in thousands)

Rehabilitation And Replacement

Project	Reason	Budget Type	Explanation	Change
LINK				
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.	\$2,154
Link Radio Upgrade	New Project	Operating	Upgrade Distributed Antenna System in support of Link tunnel operations.	\$1,000
SOUNDER				
Sounder Vehicle Overhaul Program	Cost Increase	Program	To add HEP Controllers Overhaul (\$550k) and Passenger Car Door Rehabilitation (\$250k).	\$800
Station Midlife Refurbishment Program	Cost Increase	Program	Additional budget required to rehabilitate the TIBS bus loop.	\$245
OTHER				
Small Works Program	Cost Increase	Program	Extend the program another year and added budget based on work identified for 2017.	\$3,366

2017 TIP 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
Preliminary Engineering									
700718 Tacoma Link Light Rail Vehicle Overhaul	104	418	209	0	0	0	0	0	731
870100 IT Link Light Rail	607	1,597	1,548	183	0	0	0	0	3,935
Subtotal	712	2,015	1,757	183	0	0	0	0	4,666
Operating									
600033 Link CCTV System Upgrade	700	2,154	0	0	0	0	0	0	2,854
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	5,000	0	0	0	0	0	0	0	5,000
7X356 Tacoma Dome Station	0	414	0	0	0	0	0	0	414
Subtotal	5,700	4,552	0	0	0	0	0	0	10,252
Program									
700770 Sounder Vehicle Overhaul Program	15,816	6,652	2,634	0	0	0	0	0	25,101
700771 Station Midlife Refurbishment Program	1,155	540	0	0	0	0	0	0	1,695
7X701 ST Express Fleet Replacement	119,463	25	50,669	0	0	19,111	0	0	189,269
7X740 Small Works Program	4,021	2,588	1,107	1,006	992	979	614	0	11,308
870101 IT Transit Systems	295	355	305	550	343	840	486	2,731	5,905
Subtotal	140,750	10,160	54,715	1,556	1,335	20,931	1,100	2,731	233,278
Total	\$147,162	\$16,727	\$56,471	\$1,739	\$1,335	\$20,931	\$1,100	\$2,731	\$248,196

2017 TIP Cashflow by Subarea
(in thousands)

Rehabilitation and Replacement
ALL MODES

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
1 - Snohomish	23,715	1,252	9,423	131	129	3,491	80	0	38,220
2 - North King	4,866	4,665	1,313	286	149	147	92	0	11,518
3 - South King	23,771	5,695	7,065	198	149	2,077	92	0	39,048
4 - East King	55,717	503	23,518	191	188	8,977	117	0	89,212
5 - Pierce	38,798	4,256	14,848	382	377	5,398	233	0	64,293
6 - Systemwide	295	355	305	550	343	840	486	2,731	5,905
Total	\$147,162	\$16,727	\$56,471	\$1,739	\$1,335	\$20,931	\$1,100	\$2,731	\$248,196

2017 TIP Cashflow by Phase
(in thousands)

Phase # and Description	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
09-Admin Capital	607	0	0	0	0	0	0	0	607
10-Agency Administration	453	202	0	0	0	0	0	0	655
20-Prelim Engineering/Env Review	127	115	0	0	0	0	0	0	242
30-Final Design+Specifications	69	235	0	0	0	0	0	0	304
35-Third Party	156	0	0	0	0	0	0	0	156
50-Construction	9,839	9,081	2,959	1,739	1,335	1,819	1,100	2,731	30,603
70-Vehicles	135,912	7,094	53,512	0	0	19,111	0	0	215,630
Total	\$147,162	\$16,727	\$56,471	\$1,739	\$1,335	\$20,931	\$1,100	\$2,731	\$248,196

700718 Tacoma Link Light Rail Vehicle Overhaul Managed by: Operations

Scope: Maintain, preserve, and extend the life of Tacoma Link light rail vehicles. This program overhauls the traction motors and trucks for the Tacoma Link fleet comprised of three light rail vehicles.

Changes in project budget 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:	Pending	2008 Cost Estimate:	N/A
Baseline:	\$0	2016 Cost Estimate:	N/A
2016 TIP:	\$731	2017 Cost Estimate:	N/A
2017 TIP:	\$731		

TIP Cashflow (in thousands)

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
Pierce	104	418	209	0	0	0	0	0	731
Total	104	418	209	0	0	0	0	0	731

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
70-Vehicles	104	418	209	0	0	0	0	0	731
Total	104	418	209	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 (LLR) SCADA system to mitigate equipment failure of an operationally-critical system. This project will provide for lifecycle maintenance of SCADA systems including, but not limited to, servers, SANs, networking equipment, Video Messaging Systems/backend and other computer-based infrastructure. This will also entail enhancements and maintenance for IT SCADA security.

Changes in project budget 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:	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		

TIP Cashflow (in thousands)

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
North King	450	1,183	1,147	135	0	0	0	0	2,915
South King	157	414	401	47	0	0	0	0	1,020
Total	607	1,597	1,548	183	0	0	0	0	3,935

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
09-Admin Capital	607	0	0	0	0	0	0	0	607
50-Construction	0	1,597	1,548	183	0	0	0	0	3,328
Total	607	1,597	1,548	183	0	0	0	0	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.

600033	Link CCTV System Upgrade	Managed by: Operations
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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 (OMF). This upgrade will be compatible with the new equipment for University Link and South 200th Link extensions.

New addition to the project scope in 2017 will include replacing cameras throughout the Central Link system (not including U-Link or S-Link as they already possess updated equipment). The additional scope will upgrade analog cameras to digital formats improving resolution. The Central Link cameras are currently the oldest cameras in the CCTV system.

Changes in project budget since 2016: \$2.15 million additional scope to project.

Board Approved Capital Budget (in thousands of YOE 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: \$700	2017 Cost Estimate: N/A
2017 TIP: \$2,854	

TIP Cashflow (in thousands)

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
North King	468	1,441	0	0	0	0	0	0	1,909
South King	232	713	0	0	0	0	0	0	945
Total	700	2,154	0	0	0	0	0	0	2,854

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	700	2,084	0	0	0	0	0	0	2,784
Total	700	2,154	0	0	0	0	0	0	2,854

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.

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

Changes in project budget since 2016: \$1 million new project.

Board Approved Capital Budget (in thousands of YOE dollars)	ST2 Total Project Cost Estimate (in thousands of 2016 dollars)
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

TIP 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.

700705	Link Bridge Repairs	Managed by: Operations
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Scope: Repair bridge structures within the Tukwila Freeway Route (C755) and E-3 Busway (C700) 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 in project budget since 2016: \$550 thousand for new project.

Board Approved Capital Budget (in thousands of YOE dollars)	ST2 Total Project Cost Estimate (in thousands of 2016 dollars)
Phase Gate Passed: None	2008 Cost Estimate: N/A
Baseline: \$0	2016 Cost Estimate: N/A
2016 TIP: \$0	2017 Cost Estimate: N/A
2017 TIP: \$550	

TIP 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: Initial Estimate	Schedule Risk Level: Medium
Budget Risk Level: Medium	2016 Budget Schedule:
	2017 Budget Schedule: 2017

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 in project budget 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	2008 Cost Estimate:	N/A
Baseline:		2016 Cost Estimate:	N/A
2016 TIP:	\$435	2017 Cost Estimate:	N/A
2017 TIP:	\$435		

TIP 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. Work is projected to be completed in 2016.

Changes in project budget 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	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		

TIP Cashflow (in thousands)

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
North King	3,345	0	0	0	0	0	0	0	3,345
South King	1,655	0	0	0	0	0	0	0	1,655
Total	5,000	0	0	0	0	0	0	0	5,000

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
70-Vehicles	5,000	0	0	0	0	0	0	0	5,000
Total	5,000	0	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:	2016

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.

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

Changes in project budget 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: \$414	2017 Cost Estimate: N/A
2017 TIP: \$414	

TIP 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: Fixed Contribution	Schedule Risk Level: Low
Budget Risk Level: Low	2016 Budget Schedule: 2018
	2017 Budget Schedule: 2018

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.

Change in project budget since 2016: Additional work to include HEP (Head End Power) Controllers Overhaul \$550 thousand and Passenger Door Rehabilitation \$250 thousand.

Board Approved Capital Budget (in thousands of YOE 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:	\$24,301	2017 Cost Estimate:	N/A
2017 TIP:	\$25,101		

TIP Cashflow (in thousands)

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
Snohomish	2,167	911	361	0	0	0	0	0	3,439
South King	8,287	3,485	1,380	0	0	0	0	0	13,153
Pierce	5,361	2,255	893	0	0	0	0	0	8,509
Total	15,816	6,652	2,634	0	0	0	0	0	25,101

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
50-Construction	4,661	0	0	0	0	0	0	0	4,661
70-Vehicles	11,155	6,652	2,634	0	0	0	0	0	20,441
Total	15,816	6,652	2,634	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 in project budget since 2016: Increase project budget by \$245 thousand for TIBS (Tukwila International Blvd Station) bus loop rehabilitation project.

Board Approved Capital Budget (in thousands of YOE 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:	\$1,450	2017 Cost Estimate:	N/A
2017 TIP:	\$1,695		

TIP Cashflow (in thousands)

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
South King	771	360	0	0	0	0	0	0	1,131
Pierce	385	180	0	0	0	0	0	0	565
Total	1,155	540	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	1,148	540	0	0	0	0	0	0	1,688
Total	1,155	540	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 in lifetime 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:	\$189,269	2017 Cost Estimate:	N/A
2017 TIP:	\$189,269		

TIP Cashflow (in thousands)

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
Snohomish	21,026	4	8,918	0	0	3,364	0	0	33,311
South King	12,066	3	5,118	0	0	1,930	0	0	19,116
East King	54,953	12	23,308	0	0	8,791	0	0	87,064
Pierce	31,419	7	13,326	0	0	5,026	0	0	49,778
Total	119,463	25	50,669	0	0	19,111	0	0	189,269

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	119,416	25	50,669	0	0	19,111	0	0	189,222
Total	119,463	25	50,669	0	0	19,111	0	0	189,269

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

Board Approved Capital Budget (in thousands of YOE 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:	\$7,942	2017 Cost Estimate:	N/A
2017 TIP:	\$11,308		

TIP Cashflow (in thousands)

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
Snohomish	523	336	144	131	129	127	80	0	1,470
North King	603	388	166	151	149	147	92	0	1,696
South King	603	388	166	151	149	147	92	0	1,696
East King	764	492	210	191	188	186	117	0	2,148
Pierce	1,528	983	421	382	377	372	233	0	4,297
Total	4,021	2,588	1,107	1,006	992	979	614	0	11,308

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	446	30	0	0	0	0	0	0	475
20-Prelim Engineering/Env Review	127	15	0	0	0	0	0	0	142
30-Final Design+Specifications	69	15	0	0	0	0	0	0	84
35-Third Party	156	0	0	0	0	0	0	0	156
50-Construction	2,988	2,528	1,107	1,006	992	979	614	0	10,215
70-Vehicles	236	0	0	0	0	0	0	0	236
Total	4,021	2,588	1,107	1,006	992	979	614	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 (CCTV) access control and customer emergency stations. Sounder - Passenger information systems, automated passenger counters and variable message signage.

Changes in project budget 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	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		

TIP Cashflow (in thousands)

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
Systemwide	295	355	305	550	343	840	486	2,731	5,905
Total	295	355	305	550	343	840	486	2,731	5,905

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
50-Construction	295	355	305	550	343	840	486	2,731	5,905
Total	295	355	305	550	343	840	486	2,731	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.

2017 TIP Cashflow by Budget Approval
(in thousands)

Administrative
ALL MODES

Project Number and Name	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
Program									
0X002 Agency Administration Operating	322,327	71,735	70,767	71,789	78,256	78,723	50,309	48,012	791,918
600025 Environmental Mitigation, Monitoring & Maintenance	538	165	138	110	0	0	0	472	1,423
802000 Administrative Capital	6,639	2,259	1,041	886	701	794	551	612	13,484
803800 Information Technology Program	14,937	2,274	2,371	2,456	2,403	2,140	2,148	3,507	32,235
804500 Surplus Property Disposition	525	183	0	0	0	0	0	0	708
Subtotal	344,965	76,616	74,317	75,242	81,360	81,657	53,008	52,604	839,768
Total	\$344,965	\$76,616	\$74,317	\$75,242	\$81,360	\$81,657	\$53,008	\$52,604	\$839,768

2017 TIP Cashflow by Subarea
(in thousands)

Administrative
ALL MODES

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
1 - Snohomish	94	29	24	19	0	0	0	83	249
2 - North King	525	183	0	0	0	0	0	0	708
3 - South King	333	102	86	68	0	0	0	293	882
4 - East King	31	10	8	6	0	0	0	28	83
5 - Pierce	79	24	20	16	0	0	0	69	209
6 - Systemwide	343,902	76,268	74,179	75,132	81,360	81,657	53,008	52,132	837,637
Total	\$344,965	\$76,616	\$74,317	\$75,242	\$81,360	\$81,657	\$53,008	\$52,604	\$839,768

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	192	150	0	0	34	0	0	124	500
09-Admin Capital	20,269	4,163	3,144	3,173	2,970	2,773	2,589	3,676	42,757
10-Agency Administration	323,226	71,915	70,934	71,849	78,256	78,774	50,309	48,012	793,276
20-Prelim Engineering/Env Review	753	165	238	220	100	110	110	792	2,488
40-Row Acquisition+Permits	525	183	0	0	0	0	0	0	708
90-Contingency	0	40	0	0	0	0	0	0	40
Total	\$344,965	\$76,616	\$74,317	\$75,242	\$81,360	\$81,657	\$53,008	\$52,604	\$839,768

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.

Changes in project budget 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	2008 Cost Estimate:	N/A
Baseline:	\$0	2016 Cost Estimate:	N/A
2016 TIP:	\$0	2017 Cost Estimate:	N/A
2017 TIP:	\$791,918		

TIP Cashflow (in thousands)

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
Systemwide	322,327	71,735	70,767	71,789	78,256	78,723	50,309	48,012	791,918
Total	322,327	71,735	70,767	71,789	78,256	78,723	50,309	48,012	791,918

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
10-Agency Administration	322,327	71,735	70,767	71,789	78,256	78,723	50,309	48,012	791,918
Total	322,327	71,735	70,767	71,789	78,256	78,723	50,309	48,012	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 in project budget 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	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		

TIP Cashflow (in thousands)

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
Snohomish	94	29	24	19	0	0	0	83	249
South King	333	102	86	68	0	0	0	293	882
East King	31	10	8	6	0	0	0	28	83
Pierce	79	24	20	16	0	0	0	69	209
Total	538	165	138	110	0	0	0	472	1,423

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
20-Prelim Engineering/Env Review	538	165	138	110	0	0	0	472	1,423
Total	538	165	138	110	0	0	0	472	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

This project is funded through budget transfers from projects requiring long term mitigation or monitoring. Uncertainty in the term of monitoring or the exact form of mitigation does present a slight risk but has not been an issue in the project up to this point.

802000	Administrative Capital	Managed by: FIT
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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 in project budget 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: \$13,484	2017 Cost Estimate: N/A
2017 TIP: \$13,484	

TIP Cashflow (in thousands)

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
Systemwide	6,639	2,259	1,041	886	701	794	551	612	13,484
Total	6,639	2,259	1,041	886	701	794	551	612	13,484

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
09-Admin Capital	6,639	2,219	1,041	886	701	794	551	612	13,444
90-Contingency	0	40	0	0	0	0	0	0	40
Total	6,639	2,259	1,041	886	701	794	551	612	13,484

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

Changes in project budget 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	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	14,937	2,274	2,371	2,456	2,403	2,140	2,148	3,507	32,235
Total	14,937	2,274	2,371	2,456	2,403	2,140	2,148	3,507	32,235

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
02-Operation+Maintenance-Agency	192	150	0	0	34	0	0	124	500
09-Admin Capital	13,630	1,944	2,103	2,286	2,269	1,979	2,038	3,064	29,313
10-Agency Administration	899	180	167	60	0	51	0	0	1,357
20-Prelim Engineering/Env Review	216	0	100	110	100	110	110	319	1,065
Total	14,937	2,274	2,371	2,456	2,403	2,140	2,148	3,507	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 approach selected.

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 in project budget 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	2008 Cost Estimate:	N/A
Baseline:	\$0	2016 Cost Estimate:	N/A
2016 TIP:	\$708	2017 Cost Estimate:	N/A
2017 TIP:	\$708		

TIP Cashflow (in thousands)

Subarea	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
North King	525	183	0	0	0	0	0	0	708
Total	525	183	0	0	0	0	0	0	708

Phase	Life to Date	2017	2018	2019	2020	2021	2022	Future	Total
40-Row Acquisition+Permits	525	183	0	0	0	0	0	0	708
Total	525	183	0	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

Project Budget Changes from 2016 to 2017

The 2017 TIP contains the expenditures for active phases of capital and operating projects as authorized by the Board through the agency's Phase Gate process. The table below reconciles the changes in project budgets for each project category from the Adopted 2016 TIP to the Proposed 2017 TIP.

SUMMARY OF PROJECT BUDGET CHANGES FROM 2016 TO 2017
(in thousands)

Project Type	2016 Project Total	2016 Closed Projects	2017 New Projects	Budget Transfers	Budget Inc/(Dec)	Transfer from Cost Estimates	2017 Project Budget
System Expansion							
Link Light Rail	\$11,457,606	(\$2,091,768)	\$0	\$0	\$0	\$316,142	\$9,681,980
Sounder	852,339	(6,455)	-	-	(3,774)	1,662	\$843,772
Commuter Rail							
Regional Express	321,813	(45,045)	-	-	13,572	-	\$290,341
Bus							
Other	163,728	(2,253)		-	-	-	\$161,476
System Expansion Subtotal	\$12,795,486	(\$2,145,520)	\$0	\$0	\$9,798	\$317,804	\$10,977,568
Enhancement	138,921	(16,453)	4,398	(700)	-		\$126,166
Rehabilitation and Replacement	242,278	(2,896)	1,550	700	6,565		\$248,197
Administrative	839,768	-	-	-	-	-	\$839,768
Total	\$14,016,454	(\$2,164,869)	\$5,948	\$0	\$16,363	\$317,804	\$12,191,700

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.

- Nine projects are new for 2017.
 - Link Light Rail Vehicle (LRV) Wash Bay modification 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.
- 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.

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 \$2.2 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 Midlife Maintenance 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 Maintenance 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.
- ST Express 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.
- 2016 Amendments changing existing projects.
 - 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.
 - 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:
 - 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.
 - 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.
 - 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.

Reserves

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

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	66	0	0	0	0	0	0	66
Systemwide Contingency	0	0	5	0	0	0	0	0	5
Capital Replacement	315	0	0	0	0	0	0	0	315
Total	\$330	\$69	\$14	\$9	\$9	\$9	\$4	\$4	\$447

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.

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 \$315.2 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.

ST2 COST ESTIMATES
(in thousands/constant 2016 dollars)

	2008 Estimate	Inc / (Dec)	2016 Estimate	Inc / (Dec)	2017 Estimate
Link Light Rail					
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
Subtotal Link Light Rail	\$ 9,996,443	(1,096,244)	\$ 8,918,621	144,005	\$ 9,062,626
Souder Commuter Rail					
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
Subtotal Souder Commuter Rail	\$ 1,087,198	(219,082)	\$ 868,116	67,927	\$ 936,042
Regional Express					
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
Subtotal Regional Express	\$ 363,350	(29,477)	\$ 333,873	12,971	\$ 346,844
Other					
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
Subtotal Other	\$ 64,969	17,243	\$ 82,212	-	\$ 82,212
Total ST2 Cost Estimate	\$ 11,511,960	\$ (1,327,560)	\$ 10,202,822	\$ 224,903	\$ 10,427,725

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 two voter-approved system expansion programs, Sound Transit 2 (ST2) approved in 2008 and the earlier Sound Move program approved in 1996. 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
Total Project Cost	\$225,648

ADOPTED PROJECT BUDGETS FOR ACTIVE SOUND MOVE PROJECTS

Year of Expenditure (YOE) Dollars (in thousands)

	2008	Inc/(Dec)	2016	Inc/(Dec)	2017
<u>Link Light Rail</u>					
University Link	\$ 1,614,007	\$ 142,000	\$ 1,756,007	\$ -	\$ 1,756,007
Total Link Light Rail	1,614,007	142,000	1,756,007	-	1,756,007
<u>Sounder Commuter Rail</u>					
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)	-	-	-	-	-
Total Sounder Commuter Rail	158,997	98,232	257,229	-	257,229
<u>Regional Express</u>					
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
Total Regional Express	15,022	221,585	236,607	-	236,607
STart Program	18,100	16,100	34,200	-	34,200
Total Active Sound Move Projects	\$ 1,806,126	\$ 477,917	\$ 2,284,043	\$ -	\$ 2,284,043

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 (SOGRF)

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 YOE)

40-year Rolling Forecast	2015-2054	2016-2055
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
Total	\$6,040	\$6,071

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
State of Good Repair Forecast	\$11	\$67	\$21	\$36	\$76	\$101	\$164

