

June 26, 2017

MEMORANDUM

To: Sustainability & Transportation Committee
From: Calvin Chow, Analyst
Subject: Center City Streetcar Update and Grant Acceptance Ordinance

On June 29, the Sustainability & Transportation Committee will hear an update on the Center City Streetcar project and consider legislation – Council Bill (CB) 119008 – to accept Federal Transit Administration (FTA) and Puget Sound Regional Council (PSRC) capital grants for the construction of the project. With Council acceptance of these grants, the Seattle Department of Transportation (SDOT) will begin utility relocation for the project and proceed with vehicle procurement.

Previously, Central Staff (CS) raised concerns regarding the financial plan for the Center City Streetcar (see CS memorandum, dated March 21, 2017). CS has since examined the project's underlying financial assumptions in more detail (including the ridership model, fare revenue estimates, and operating agreements), and CS continues to believe there is financial risk in the Center City Streetcar financial plan. However, much of this risk already exists with operating the South Lake Union Streetcar and First Hill Streetcar lines, and is not directly attributable to the Center City Streetcar.

In particular, the Center City Streetcar financial plan relies on continued future contributions from Sound Transit and King County Metro for operating the existing streetcar lines. In addition, future streetcar ridership and fare revenue may be impacted by congestion in the streetcar corridor or by changes to the underlying transit network (i.e., competing transit options serving the streetcar corridor and transit markets).

There is potential financial upside in building the Center City Streetcar by operating a more efficient consolidated system. In the FTA grant application, SDOT projects that the Center City Streetcar would increase streetcar ridership by roughly 200%, while only adding 50% to the operating cost.¹ Assuming ridership and cost projections hold true, the Center City Streetcar will generate additional net revenue if fare box recovery for the streetcar system exceeds 25%.

BACKGROUND

The South Lake Union (SLU) Streetcar began operations on December 12, 2007. The SLU Streetcar alignment is 1.3 miles long and operates with 4 vehicles. SLU Streetcar annual ridership peaked in 2013 at 760,933 riders, but declined to 518,248 riders in 2016 due to

¹ Center City Connector Small Starts Grant Application, Figure 1-10 and Figure 3-1.

reduced reliability (i.e., congestion) and increased transit options² serving South Lake Union. Construction impacts from the RapidRide C expansion along Westlake also reduced streetcar service in early 2016. SDOT anticipates that ridership will grow in future years. As a measure of productivity, the SLU Streetcar averaged 40 riders per revenue hour in 2016.³

The First Hill (FH) Streetcar began operations on January 23, 2016. The FH Streetcar alignment is 2.5 miles long and operates with 6 vehicles. Ridership in 2016 was 840,049; the FH Streetcar averaged 32 riders per revenue hour.⁴ SDOT’s Broadway Extension project (a half-mile extension of the FH Streetcar line) is not fully-funded and is currently on-hold.

The Center City Streetcar project proposes to connect the existing SLU Streetcar and FH Streetcar lines with a new 1.2 mile segment of rail along 1st Ave and Stewart St (see Figure 1).

The consolidated system would operate an additional 7 vehicles, and would function as two interconnected lines (see Figure 2, below), with overlapping and more frequent service from Thomas St (in South Lake Union) to 7th Ave & Jackson St (in the International District).

Figure 1: Streetcar Alignments



² Additional Route 40 and RapidRide C service funded through the Seattle Transportation Benefit District.

³ SLU ridership and productivity reported in SDOT’s draft Bi-Annual Streetcar Project Report, dated May 2017.

⁴ FH ridership and productivity reported in SDOT’s draft Bi-Annual Streetcar Project Report, dated May 2017.

Figure 2: Consolidated Streetcar Operating Plan



RIDERSHIP MODEL

SDOT used the FTA STOPS model⁵ to estimate ridership for the Center City Streetcar. The model allowed SDOT to evaluate travel patterns and demand at the census tract level, providing for some geographic detail in analyzing the Center City. SDOT ran the model for 2014 (the year of the analysis), 2019 (the first full year of anticipated service), and 2035 (a 20-year forecast).

For 2019, the model predicts that the Center City Streetcar would increase annual ridership on the consolidated system to 6.8 million riders, and would average 70 riders per revenue hour.⁶ This is a projected 4.1 million increase in ridership over the “No-Build” alternative. The “No-Build” alternative includes stand-alone SLU Streetcar and FH Streetcar operations; both the “Build” and “No-Build” alternatives assume operation of the Broadway Extension.

⁵ <https://www.transit.dot.gov/funding/grant-programs/capital-investments/stops>

⁶ Modelled productivity calculations per communication with SDOT and CH2M consulting. SDOT used an annualization factor of 315 to convert average weekday ridership to annual ridership.

To put these model results in the context, the 2019 “No-Build” alternative predicts that a stand-alone SLU Streetcar would average 49 riders per revenue hour, and a stand-alone FH Streetcar (including the un-built Broadway Extension) would average 51 riders per revenue hour. These modelled 2019 results are significantly higher than “2016 Observed” productivity and ridership, as shown in Table 1 below.

Table 1: Modelled (No-Build) and Observed Productivity and Ridership

	2014 Modelled	2019 Modelled	2035 Modelled	2016 Observed
SLU Streetcar Productivity	36	49	68	40
FH Streetcar Productivity	41*	51*	65*	32
Combined SLU & FH Ridership	2,100,000*	2,700,000*	3,500,000*	1,358,297

* Ridership model assumed Broadway Extension in service for the “No-Build” alternative.

Figure 3 shows the modelled total boardings on the consolidated Center City Streetcar system. Total boardings are shown in red, with the green showing the portion of trips that would make use of the new Center City Streetcar segment.

The model predicts that most of the new ridership will occur in South Lake Union, the Center City, and the International District. The Center City Streetcar would not significantly increase ridership on First Hill or Capitol Hill.

SDOT also expects an additional 1 million riders due to tourists and visitors (not included in the FTA STOPS ridership model), for a total of 7.8 million riders in 2019. SDOT did not include potential ridership from sporting events (CenturyLink Field, Safeco Field) in this estimate.

Figure 3: 2014 Modelled Total Boardings and Project Trips



FARE REVENUE

As reported in the FTA grant application, SDOT used a budgeted estimate of \$8.77 million for fare revenue in 2019.⁷ Based on the 2019 ridership estimate of 7.8 million riders for a consolidated system, this equates to \$1.12 per rider. Average fare revenue is significantly less than the full fare due to transfers and ORCA pass use, which split revenues among the different transit agencies according to use. Fare evasion may also reduce fare revenue.

Historically, SDOT has received about \$1.11 per rider on the SLU Streetcar,⁸ although this reflects the current SLU Streetcar fare of \$2.25 per rider rather than the anticipated \$2.75 fare (on par with King County Metro's peak fare) for the consolidated system. The Center City Streetcar is expected to increase fares to match the King County Metro's peak fare. While the fare per rider comparison appears reasonable, actual revenue will be dependent on the ridership achieved.

OPERATING AGREEMENTS

The existing SLU Streetcar and FH Streetcar lines are supported by contributions from external agencies. SDOT's financial plan for the Center City Streetcar consolidated system assumes these agencies will continue to support streetcar operations in the future.

For the SLU Streetcar, King County Metro provides a defined annual contribution that escalates to \$1,550,000 in 2019, when the current operating agreement expires. SDOT anticipates that a future agreement will maintain this level of King County Metro support. In addition, City Council approved an interfund loan (Ordinance 122424 and 123102) to support SLU Streetcar operations. As of June 19, 2017, the SLU Streetcar operating fund owes \$3,469,227 outstanding; the interfund loan is currently authorized through 2018.

For the FH Streetcar, Sound Transit provides a \$5,000,000 annual contribution through 2023. SDOT anticipates that a future agreement will maintain this level of Sound Transit support; however, the voter-approved ST3 ballot measure did not include any funding for this purpose. As of June 19, 2017, the FH Streetcar operating fund had a positive balance of \$3,067,718.

OPERATING RISK AND UPSIDE

All financial plans face the risk that future ridership and revenues may not meet projections. The City's experience with ridership on the SLU Streetcar highlights this risk. As discussed above, ridership on the SLU Streetcar peaked in 2013 at 760,933 riders, which exceeded the original projection of 620,723 riders. Ridership has since declined to 518,248 riders in 2016, trailing the original projection of 781,932 riders. SDOT's original projection of SLU Streetcar ridership went to 2019, and projected 985,010 riders; based on current ridership trends, SDOT now estimates 2019 ridership at 679,919.⁹ SLU Ridership trends are shown in Table 2 below.

⁷ Center City Connector Small Starts Grant Application, Figure 3-1.

⁸ Based on 2013 and 2014 fare revenues, draft SDOT's draft Bi-Annual Streetcar Project Report, dated May 2017.

⁹ From SDOT's draft Bi-Annual Streetcar Project Report, dated May 2017.

The decline in ridership was due to reduced reliability of the streetcar (i.e., congestion), competing transit options (i.e., increased Route 40 and RapidRide C service), and construction impacts along the streetcar route. While SDOT projects that ridership will increase in 2017 and subsequent years, SDOT does not expect SLU Streetcar ridership to recover to peak levels within the next 5 years.

Table 2: SLU Streetcar Observed Ridership and Projections

	2012	2013	2014	2015	2016	2017
Observed Ridership	750,888	760,933	707,712	622,222	518,248*	n/a
Original Projection	574,744	620,723	670,381	724,011	781,932	844,487
	2017	2018	2019	2020	2021	2022
Current Projection	640,889	660,115	679,919	700,000	721,326	742,966
Original Projection	844,487	912,046	985,010	n/a	n/a	n/a

* Construction of the RapidRide C extension on Westlake Ave impacted SLU Streetcar operations from Jan-Mar 2016.

Similarly, construction, congestion, and service level changes to the underlying transit network have the potential to dramatically affect the Center City Streetcar’s ridership and financial performance. Because the City only bears financial responsibility for the streetcar portion of the transit system, it cannot absorb or moderate negative financial impacts to the streetcar over a larger service area or across different transit modes in the way larger transit agencies (e.g., King County Metro, Sound Transit) manage their services. Financially, the City’s streetcar system will be more vulnerable to potential ridership fluctuations, which could have positive impacts as well.

The Center City Streetcar project offers a financial upside in the more efficient use of existing SLU Streetcar and FH Streetcar assets. SDOT believes that building the Center City Streetcar segment would increase streetcar ridership by 200%, while only increasing operating costs by 50%.¹⁰ A more productive streetcar system will increase net revenue if the additional ridership generates more fare revenue than the incremental cost.

Assuming ridership and cost projections hold true, the Center City Streetcar will increase net revenue if fare box recovery of the streetcar system exceeds 25%. Fare box recovery is measured by the dividing total fare revenue by the operating cost. For comparison, Sound Transit light rail recorded 37% fare box recovery;¹¹ King County Bus Service recorded 31% fare box recover;¹² and the SLU Streetcar recorded 27% fare box recovery.¹³ Additional net revenue would help support streetcar operations if other anticipated revenue does not meet expectations.

¹⁰ Center City Connector Small Starts Grant Application, Figure 1-10 and Figure 3-1.

¹¹ 2016 fare box recovery, via email from Sound Transit Operations Business Manager Brian Scott (2/26/2017).

¹² 2015 fare box recovery, from King County Metro’s 2015 Strategic Plan Progress Report (June 2016).

¹³ Calculated 2014 fare box recovery from SDOT’s draft Bi-Annual Streetcar Project Report, dated May 2017. Reported fare revenue in 2015 and 2016 included estimates for ORCA passes.

GRANT ACCEPTANCE AND CAPITAL COSTS

The Sustainability and Transportation Committee will consider legislation (CB 119008) authorizing the acceptance of capital grants from the FTA and PSRC. The FTA grant is anticipated to be \$75 million over multiple years; Congress provided \$50 million for the FTA grant as part of the spending bill for the Federal 2017 Fiscal Year Budget. The PSRC grant provides \$7.3 million for vehicle procurement.

Acceptance of these grants would fully fund the Center City Streetcar project. The total capital cost is estimated at \$152 million. This funding includes roughly \$52 million of City transportation funds, \$14 million of City utility funds, and \$86 million in grants and external funding.

For comparison, the SLU Streetcar was constructed in 2007 at a total project cost of \$49 million. Funding included roughly \$6 million of City transportation funds, \$18 million in grants, and a \$25 million Local Improvement District assessed on adjoining South Lake Union property owners. The FH Streetcar was wholly funded by Sound Transit as part of the voter-approved ST2 Plan and constructed in 2015. The full capital cost of the FH Streetcar was \$135 million.

cc: Kirstan Arestad, Central Staff Director
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