

1 FILED
2 2022 JUL 20 09:00 AM
3 KING COUNTY
4 SUPERIOR COURT CLERK
5 E-FILED
6 CASE #: 22-2-11272-7 SEA

7 SUPERIOR COURT OF THE STATE WASHINGTON
8 FOR KING COUNTY

9 JANET ALANE SOLUM BALL, an
10 individual, and spouse BOBBY BALL,
11 and their community comprised thereof;
12 ERIC BORIS, an individual,

13 Plaintiffs,

14 v.

15 THE CITY OF SEATTLE, a Washington
16 municipal corporation,

Defendant

NO.

**COMPLAINT FOR PERSONAL
INJURIES, DAMAGES, AND
INJUNCTIVE RELIEF**

17 Plaintiffs Janet Ball, Bobby Ball, and Eric Boris allege the following, by and
18 through their attorney of record, Fleming Law, PLLC and Plaintiffs' co-counsel, for
19 causes of action against Defendant City of Seattle:

20 //

21 //

22 //

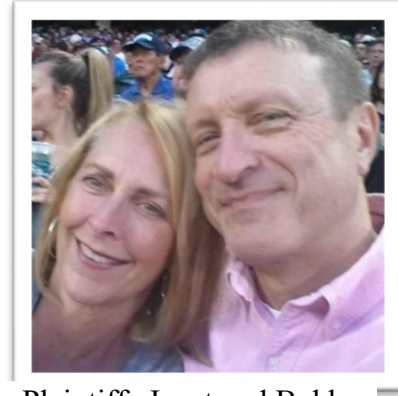
23 //

24 COMPLAINT FOR PERSONAL INJURIES, DAMAGES, AND INJUNCTIVE
RELIEF - 1

FLEMING LAW, PLLC
936 N 34th St. #300A
Seattle, WA 98103
T: 206.453.2558. | F: 206.453.6322

1
2 **I. PARTIES**

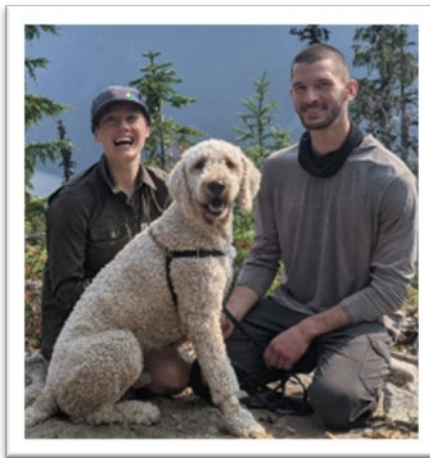
3 1.1 **Plaintiff Janet Alane Solum Ball** (“Jan
4 Ball”) was a resident of Issaquah, King County,
5 Washington at all material times.



6
7
8 Plaintiffs Janet and Bobby
9 Ball

6 1.2 **Plaintiff Bobby Ball**, spouse of Jan Ball,
7 was a resident of Issaquah, King County, Washington at
8 all material times.

9 1.3 **Plaintiff Eric Boris** is a resident of Seattle, King County, Washington at all
10 material times.
11



12
13
14
15
16
17
18 Plaintiff Eric Boris (right)

19 1.4 **Defendant City of Seattle** (“the City”), a governmental entity, was and
20 remains responsible for the reasonably safe design, construction, and maintenance of the
21 First Hill Streetcar tracks and the streets with streetcar tracks.
22

23 //

1 4.3 S. Jackson Street is open to all motorists and cyclists who travel lawfully,
2 including bicyclists who travel westbound toward 5th Avenue South.

3 4.4 For years, the City of Seattle has encouraged people to choose bicycling as
4 a safe and environmentally friendly means of travel on its streets. The City's rationale:
5 When people ride their bicycles instead of motor vehicles, they help the environment as
6 a "key part of our thriving communities":
7

8 I. BIKE PROGRAM

9
10 **Seattle is using our streets to provide safe, affordable travel choices and create
11 great places that encourage people to get out and enjoy streets on foot or by
12 bike. In doing so, we reduce greenhouse gas emissions, improve the health of
13 our residents and make it comfortable for people of all abilities from our 5-
14 year old kids to our 80-year old grandparents to move around. We want
bicycling to be a mainstream, comfortable and safe choice for people of all
cultures, ages, abilities, and backgrounds. Seattle can be a place where bicycles
are well integrated into the transportation system and are a key part of our
thriving communities.¹**

15 4.5 As far back as February 5, 2010, project consultants warned Defendant
16 City about "commonly cited challenges [that] cyclists experience when traveling on
17 roadways with streetcar tracks."² This Memorandum also indicated additional factors
18 to consider, including:
19

- Presence of transit routes on the roadway;
- Motor vehicle/bicycle interaction;
- Steep/challenging topography; and
- Proximity to destinations³

22
23 ¹ <https://www.seattle.gov/transportation/projects-and-programs/programs/bike-program> (last visited July 7, 2022).

24 ² See Exhibit A

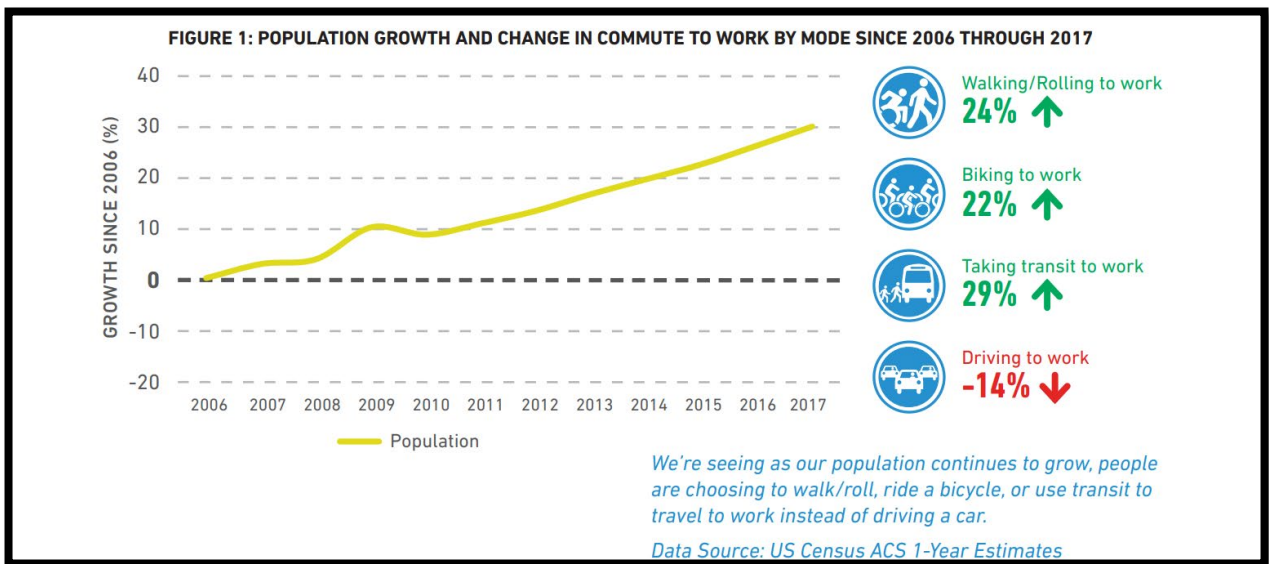
³ *Ibid.*

1 4.6 The same Feb. 5, 2010 Memorandum to the City mention specific sections
2 of the First Hill Streetcar line that pose the greatest risk of harm to bicyclists, including
3 the subject road of S. Jackson Street.

4 4.7 From 2010 and through 2014, Defendant City initiated, oversaw, and
5 approved the planning, design, and construction of the Seattle First Hill Streetcar line.

6 4.8 From 2010 to the present time, Defendant City has failed to address
7 reasonable concerns of the known and foreseeable risk of harm to bicyclists that the
8 First Hill Streetcar tracks posed on S. Jackson Street near 5th Ave S, 6th Ave S and near
9 the King Street Station.

10 4.9 From 2006 through 2017, SDOT reported that Seattle experienced a 22%
11 increase of bike commuters per US Census Data Estimates. Below is an infographic
12 increase of bike commuters per US Census Data Estimates. Below is an infographic



13
14
15
16
17
18
19
20
21 included in SDOT's [February 4, 2020 CITY OF SEATTLE BICYCLE AND PEDESTRIAN](#)
22 [SAFETY ANALYSIS PHASE 2](#) (last visited July 14, 2022).

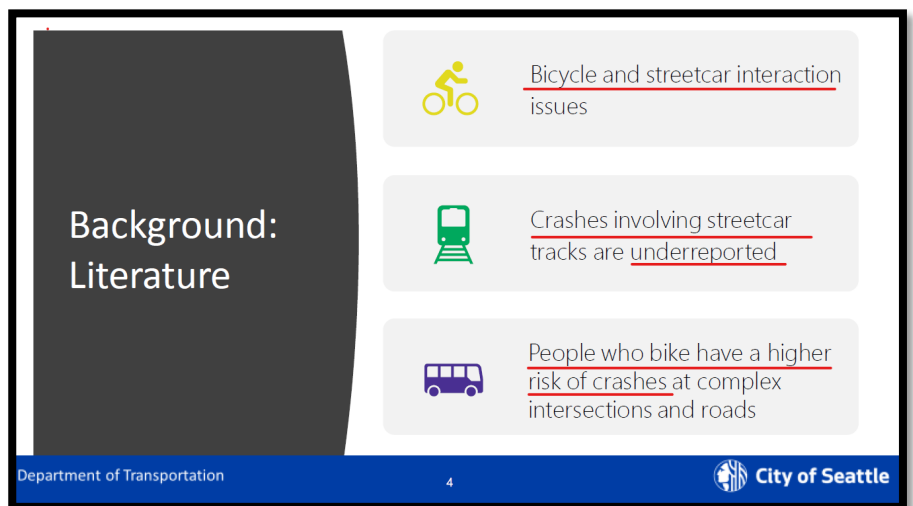
23 //

1 4.10 Fast forward from the period when the First Hill Streetcar was approved
2 in 2010 to the summer of 2019. Over those roughly nine years, its own staff, concerned
3 citizens, road safety advocates, bike commuters, and other stakeholders alerted
4 Defendant City about the hazardous conditions that the First Hill Streetcar tracks
5 created for bicyclists⁴. These communications were expressed in person, by emails, by
6 phone calls, and virtually every practical method to urge the City to address the
7 dangerous conditions.

8 4.11 In December 2021, the Washington State Department of Transportation
9 published its Active Transportation Plan, explaining the following:
10

11 As WSDOT points out, during the “2019 Seattle Squeeze,” the City had stepped
12 up its efforts to encourage everyone to shift to riding their bikes, taking transit or
13 telecommuting.

14 4.12 Additionally, the Seattle Bicycle Advisory Board (SBAB) developed and
15 proposed a plan to address
16 the growing number of bike
17 crashes due to the streetcar
18 tracks. SBAB pointed out
19 that **bike crashes involving**
20 **streetcar tracks are**
21 **underreported:**



22 “Streetcar Spot Enhancements: How SDOT is Improving Bicycle Safety,”
23 Seattle Bicycle Advisory Board, Dec. 2019

24 ⁴ See e.g., “Will First Hill Streetcar tracks be a hazard to cyclists?”, Seattle-PI, by Scott Gutierrez, June 2, 2010.

1 4.13 Yet, despite the City’s actual and constructive knowledge and the growing
2 history of bike crashes and collisions at and by the First Hill Streetcar tracks on and near
3 S. Jackson Street, the City has failed to provide any effective solutions to this risk of
4 harm.

5 4.14 A result of the City’s negligence and based on its released and admittedly
6 **incomplete data due to known underreporting**, at least 15 crashes have occurred on S.
7 Jackson Street, including Jan Ball’s and Eric Boris’ bike crashes of 2019.

8 4.15 Before Jan Ball’s and Eric Boris’ crashes in 2019 on S. Jackson Street, the
9 City of Seattle already knew about the many bike crashes due to the First Hill Streetcar
10 tracks.
11

12 4.16 To this day, the inside lane, the lane closer to the streetcar stops on S.
13 Jackson, are reserved for streetcar traffic, and contains the hazardous streetcar tracks.
14 The other lane, closer to the curb, is the main lane for bus traffic.

15 4.17 Rather than provide a clear and safe path for bicyclists on S. Jackson Street
16 as its own consultants and transportation experts recommended, the City chose not to
17 separate streetcars, the tracks, and buses from bicyclists. Below, on the following page,
18 are pictured a few options that the City’s First Hill Streetcar Project consultants offered
19 as possible solutions to minimized conflict between transit and travelers on bicycles.

20 //

21 //

22 //



Consultants to the City of Seattle for the First Hill Streetcar Project raised concerns about the potential for catastrophic injury or fatality. Above are shown a few options consultants offered to the City to provide reasonably safe travel for bicyclists.

4.18 On S. Jackson Street between 6th Ave S and 5th Ave S, the City has failed to provide bicyclists who travel westbound with guidance or protection from the hazardous streetcar tracks. Despite early warnings from its own consultants and stakeholders and despite the long history of crashes on S. Jackson because of the streetcar tracks, the SDOT has still failed to make this stretch safer for those who

1 choose to travel by bike.

2 4.19 Further, the City has long known about the history of injury related bike
3 crashes arising from the South Lake Union Streetcar.

4 4.20 Effective July 19, 2019, the Federal Transit Administration (FTA) Agency
5 Safety Plan final rule (49 CFR Part 673) imposed a new set of requirements on
6 Defendant City. The FTA Safety Plan rule required SDOT to develop a **Public**
7 **Transportation Agency Safety Plan (PTASP)** based on a Safety Management System
8 (SMS). Management System (SMS) principals and methods by July 20, 2020. Failure to
9 comply could result in SDOT's loss of eligibility for federal funding. *See* SDOT 2019
10 Streetcar Operations Report at 18.

11 4.21 The new federal rule expanded the City's role in terms of safety, requiring
12 SDOT to work closely with King County Metro and WSDOT to draft its PTASP.

13
14
15 The new federal guidance expands SDOT's
16 role in safety and security management for the
17 Seattle Streetcar. Under the new 49 CFR Part 673
18 requirements, SDOT must develop its own PTASP,
which will replace the SSPP. SDOT streetcar

19 4.22 By July 2020, SDOT was required to create and fill the position of a
20 Streetcar Chief Safety Officer (CSO) within SDOT to oversee the PTASP
21 implementation. Shown on the following page is an excerpt from the City of Seattle's
22 2020 Seattle Streetcar Report.

SDOT Streetcar Operations staff prepared to implement new federal safety requirements

2019 saw new changes to federal requirements governing rail safety oversight. These changes require SDOT to assume new responsibilities in managing and planning streetcar safety; most notably, developing a Public Transportation Agency Safety Plan (PTASP). The new PTASP will work in conjunction with a similar plan from King County Metro and will be based on a Safety Management System (SMS) philosophy in accordance with the new federal requirements. Under the new requirements, SDOT was required to certify that it has adopted a PTASP by July 20, 2020. SDOT met this requirement in July 2020.

4.23 SDOT and its CSO have yet to make regular or accessible updates to the public about these federally mandated reports of safety incidents, including injury incidents, collisions, and associated mitigation measures.

4.24 The City's publicly available data on bicycle incidents relating to the City's streetcar tracks are patently incomplete by its own admission. *See, e.g., "Streetcar Spot Improvements How SDOT is Improving Bicycle Safety,"* Feb. 2020. There, SBAB identify a few safety improvements to address bicycle crashes near streetcar tracks. Yet, no explicit solutions regarding the crashes on S. Jackson Street are included.

4.25 A root problem is that Defendant's crash data omits comprehensive information about injury related crashes that the City obtains and collects from sources such as completed Claims for Damages forms. These forms are required incident details if an individual seeks compensation for any damages and if one wishes to file a lawsuit.

4.26 Plaintiff counsel for Jan Ball and Eric Boris alone submitted several claims for damages to the City. Yet, none of those injury related incidents appear in the City's

1 universe of publicly reported collisions.

2 **B. Jan Ball's Bike Crash of September 25, 2019.**

3 4.27 On September 25, 2019, at approximately 11:30 AM, Plaintiff Jan Ball was
4 riding her bicycle with a group of friends westbound on S. Jackson Street, west of
5 Maynard Avenue S. Westbound S. Jackson Street slopes downhill as it approaches
6 Puget Sound. For westbound travelers, the inside lanes are designed for streetcars,
7 motorists, bicyclists, and buses, while the curbside lane is for all travelers except
8 streetcars.

9 4.28 West of 8th Avenue South, S. Jackson Street includes an inside lane
10 streetcar track, with streetcar tracks that run on inside lanes for both east and
11 westbound traffic.
12

13 4.29 On Sept. 25, 2019, the fourth of the single-file bicyclists in her group, Jan
14 rode in the curbside lane of S. Jackson St. As she approached the 5th Ave S intersection
15 on S. Jackson Street, she observed the traffic: Buses were occupying the curbside lane
16 along with other vehicles.

17 //

18 //

19 //

20 //

21 //

22 //



Image shown BEFORE crossing 5th Ave S for westbound traffic. NOTE: Buses routinely line up on S. Jackson, east of 5th Ave S to drop off or load passengers.

4.30 Without signage or warning for westbound travelers on S. Jackson, immediately west of the intersection with 5th Ave S., a new, narrow third lane emerges on S. Jackson Street. The new lane includes a painted sharrow and bike icon, as shown in the photo below.

4.31 As Jan approached the complicated and busy intersection at 5th Avenue S., she began to move into the inner, left-hand lane on S. Jackson Street. (Note: Only after crossing 5th Avenue South on S. Jackson St, westbound travelers will find the new middle lane with a bike icon and sharrows. See the image on p. 14 of this Complaint.)

1 4.32 But, before reaching 5th Ave. South, the First Hill Streetcar tracks trapped
2 Jan’s front bicycle tire with its flangeway gap (pictured below). The flangeway gap
3 measured at about 1.7 inches. When her bike tire stopped in the the flangeway gap of the
4 track, Jan flew off her bike and crashed onto the road.



12 Pictured above: Streetcar tracks width and depth shown above exceeds 1.5”, easily trapping bicycle tires.

13 4.33 Injured and unable to walk, onlookers carried Jan to the sidewalk where
14 she waited for an ambulance.

15 4.34 In the months and years that followed, Jan Ball and spouse Bobby Ball
16 learned the full and great extent of their loss and damages.

17 4.35 Only days before this lawsuit was filed, Jan was rushed again to the emergency
18 department, where doctors advised Jan s spouse, Bobby Ball, that she suffered an
19 acute subdural hematoma. Her prognosis is unclear at present.

20 4.36 Jan’s most recent fall was from the 2019 bike crash.

21 //

22 //

1 **C. Eric Boris' Bike Crash of July 22, 2019.**

2 4.37 Despite the dangerous conditions about which SDOT has known since first
3 installing the streetcar tracks on S. Jackson Street, the City has failed to calm traffic. In
4 particular, it has failed to alleviate the bus congestion that often results in multiple
5 buses stopping in front of King St. Station between 5th Ave. S. and 4th Ave. S.



20 4.38 Thus, during peak hours, as was the case for Eric Boris, a line of buses on
21 the westbound side of S. Jackson extended east of 5th Ave. S. The congestion from buses
22 approaching the King Street Station stop creates a complicated traffic pattern. When
23 unpredictable buses stop before an actual transit stop, and weaves back and forth into
24 traffic, bicyclists must contend with another layer of complexity.

1 4.39 For Eric Boris, a bus had stopped for some passengers east of 5th Ave. S.

2 4.40 With no warning, the bus pulled into traffic, back into the bicycle/shared
3 lane. This prevented Eric from proceeding straight in that lane. Because the light was
4 green and the path was on a decline, Eric's safest choice was to pass to the left of the
5 bus.

6 4.41 With little room to navigate, Eric attempted to allow ample room for the
7 bus. However, the streetcar tracks to his left trapped his front bicycle tire, which caused
8 Eric to fall off of his bike. His crash to the ground resulted in immediate injuries.
9 Witnesses helped him rest on the sidewalk and picked up his bike out of the road.

10 **V. TORTIOUS CONDUCT/PROXIMATE CAUSE**

11 5.1 At all material times, Defendant City had a duty to exercise ordinary care
12 in the design, construction, inspection, maintenance, and repair of its streets, including
13 the design of the First Hill Streetcar line, to keep them in a reasonably safe condition for
14 ordinary travel.

15 5.2 Defendant City breached its duty to design, construct, and maintain
16 reasonably safe roadways for travelers, including those who rode bikes, on westbound
17 S. Jackson west of 7th Avenue South.

18 5.3 Defendant City had actual and/or constructive knowledge of the
19 catastrophic risk of harm to bicyclists where streetcar tracks were located near or on
20 roads where bicyclists traveled.
21
22
23

1 5.4 Before the First Hill Streetcar Project even broke ground, consultants and
2 engineers advised that this hazard was “undesirable,” as it created a “possible
3 catastrophic event” resulting in the most severe injuries or a fatality.

4 5.5 To avoid the hazard of bicycle and streetcar/track incidents, consultants
5 and experts to the City recommended solutions such as designated bicycle lanes
6 separated from general and streetcar traffic (“Two-Way Bicycle Track”).

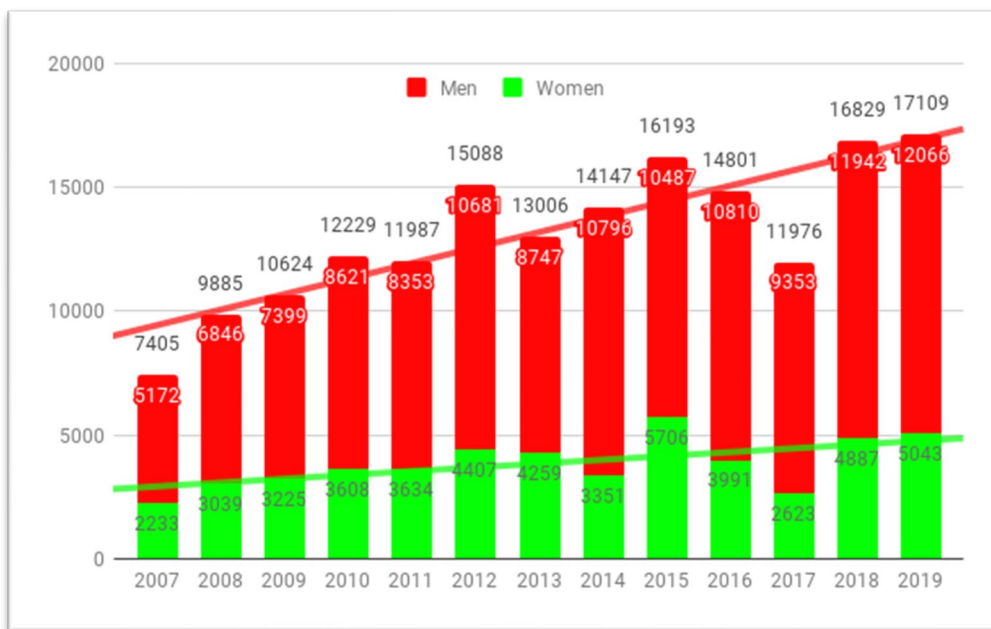
7 5.6 For reasons not fully disclosed to the public, the City ultimately rejected
8 the proposed Two-Way Bicycle Track design on S. Jackson Street west of 7th Ave S.
9 Instead, the City painted sharrows and icons on the pavement as guides for bicyclists
10 riding on the subject portion of S. Jackson, but provided no measures to mitigate the
11 hazard posed to cyclists by the streetcar tracks in the inside lane, in case of congestion
12 in the righthand, curb lane.

13 5.7 Not only did the City fail to provide a separated or protected bike lane on
14 this stretch of S. Jackson, it also opted against other inexpensive mitigation measures.
15 Such measures included the use of rubber flangeway filler in the grooves of the
16 streetcar tracks to prevent bicycle wheels, walker wheels, wheelchair wheels, and canes
17 from falling or slipping into the track. Other measures the City chose not to take
18 included painted cross-hatching or other pavement markings and/or strategically
19 placed signage to warn cyclists of the hazardous condition that streetcar tracks created.
20

21 5.8 Since the inaugural run of the First Hill Streetcar in 2014, the City knew of
22 dozens of reports about bike crashes, involving serious injuries and even death,
23

1 resulting when the streetcar tracks trapped travelers' bike tires. The City has long
2 known about this serious hazard: Whenever a streetcar track flangeway traps a bike
3 tire, the bike is immediately immobilized before the bicyclist can control it.

4 5.9 Despite an over 22% increase in people bicycling in Seattle, in part because
5 of its years' long campaign, the City continued to ignore the known catastrophic
6 hazards that it knowingly created with the installation of the First Hill streetcar tracks.



7
8
9
10
11
12
13
14
15
16
17 Seattle has encouraged people to ride their bikes for years.
18 Source: U.S. Census Bureau American Community Survey

19 5.10 Despite the City of Seattle's federal requirements per 49 CFR Part 673, to
20 provide regular reports in compliance with the guidelines SDOT Streetcar Chief Safety
21 Officer Curtis Ailes outlined, the City has failed to provide critical information that
22 would have warned travelers about the dangerous conditions on S. Jackson St.

1 5.11 As a result of the City of Seattle’s breach of its duty to design, construct,
2 and maintain reasonably safe roads, Plaintiffs Jan Ball and Eric Boris encountered this
3 hazard known to the City for more than nine (9) years before Plaintiffs’ subject
4 incidents.

5 5.12 As a direct and proximate result of Defendant City’s tortious conduct in
6 subjecting the public to an inherently dangerous route for travel **without adequate**
7 **disclosure of material information and for its failure to design, construct, and**
8 **maintain reasonably safe roads**, Plaintiff Jan Ball sustained life-threatening, severe, and
9 permanent injuries. Her injuries and damages resulted directly from the unmitigated
10 dangers that the First Hill Streetcar tracks created for bicyclists.
11

12 5.13 Similarly, for the aforementioned tortious conduct of Defendant City, and
13 as a direct and proximate result, Plaintiff Eric Boris sustained loss, and damages that
14 included serious and permanent injuries. His injuries and damages resulted directly
15 from the unmitigated dangers that the First Hill Streetcar tracks created for bicyclists.

16 5.14 As a direct and proximate result of Defendant City’s tortious conduct in
17 subjecting the public to an inherently dangerous condition on a busy city street,
18 Plaintiffs Jan Ball and Eric Ball have sustained either life-threatening or severe and
19 permanent injuries and disabilities.

20 5.15 Defendant City is liable for the injuries and losses that Plaintiffs sustained
21 arising entirely from its above-described negligence.
22

23 5.16 Defendant City is also liable for the loss of consortium claim of Jan Ball’s
24 husband, Bobby Ball due to the above-described negligence.

VIII. PRAYER FOR RELIEF

1 WHEREFORE Plaintiffs pray for the following relief:

2 8.1 A judgment against Defendant for economic and non-economic damages in
3 amounts to be proven at the time of trial, as well as costs, reasonable and statutory attorney fees,
4 pre- and post-judgment interest;

5 8.2 Injunctive relief that requires the City of Seattle to take specific actions to mitigate
6 the known hazards of the streetcar tracks of First Hill Streetcar on S. Jackson St. within two blocks
7 east and west of King Street Station; and

8 8.3 Such other relief as is just and equitable.

9 DATED: July 18, 2022.

10 Counsel for Plaintiffs

11 

12 Catherine Fleming, WSBA 40664
13 FLEMING LAW, PLLC
936 N. 34th St. #300A
Seattle, WA 98103

14 Corrie Yackulic, WSBA 16063
15 CORRIE YACKULIC LAW FIRM
16 110 Prefontaine Place South, #304
Seattle, WA 98104

17 Maridith Ramsey, WSBA 46266
18 RAMSEY INJURY LAW
1827 N. 178th Street
19 Shoreline, WA 98133

EXHIBIT A

Memorandum



To: Mark Dorn

CC:

From: Mike Tresidder and Kim Voros

Date: February 5, 2010

Re: First Hill Streetcar - Preliminary Alternatives Analysis

INTRODUCTION

The First Hill Streetcar will provide additional fixed-rail transit capacity for the residents and visitors to Capitol Hill, First Hill, the International District and Pioneer Square. A key value of Seattle's Department of Transportation is to create transportation system that provides real alternatives to driving. To help maintain the overall quality Seattle's transportation network, each candidate roadway segment being considered to be part of the proposed alignment for the First Hill Streetcar will be screened to determine how it performs from a motor vehicle, transit, bicycle and pedestrian perspective.

This memorandum provides an overview of the alignment options, a preliminary evaluation of the effect streetcar tracks may have on current cycling conditions and identifies those alignment options that will optimize streetcar/bicycle compatibility. Figure 1 shows roadways under consideration as potential segments of the First Hill Streetcar system.

The three most commonly cited challenges cyclists experience when traveling on roadways with streetcar tracks are:

- Right-running tracks in the bicycle travelway;
- Flange gap and angle of crossing at intersections; and
- Streetcar platforms (curb extensions) located in bicycle travelway

Along with these factors, additional factors taken into consideration in this analysis include:

- Presence of transit routes on the roadway;
- Motor vehicle/bicycle interaction;
- Steep/challenging topography; and
- Proximity to destinations

The first set of factors are directly related to the impacts of streetcar tracks on the bicycling environment while the second set of factors relate to the existing quality of the cycling environment on any given roadway. Understanding how the existing cycling environment is affected by streetcar tracks will help the Project Team understand how much comfort or discomfort a cyclist might feel when using these roadways.

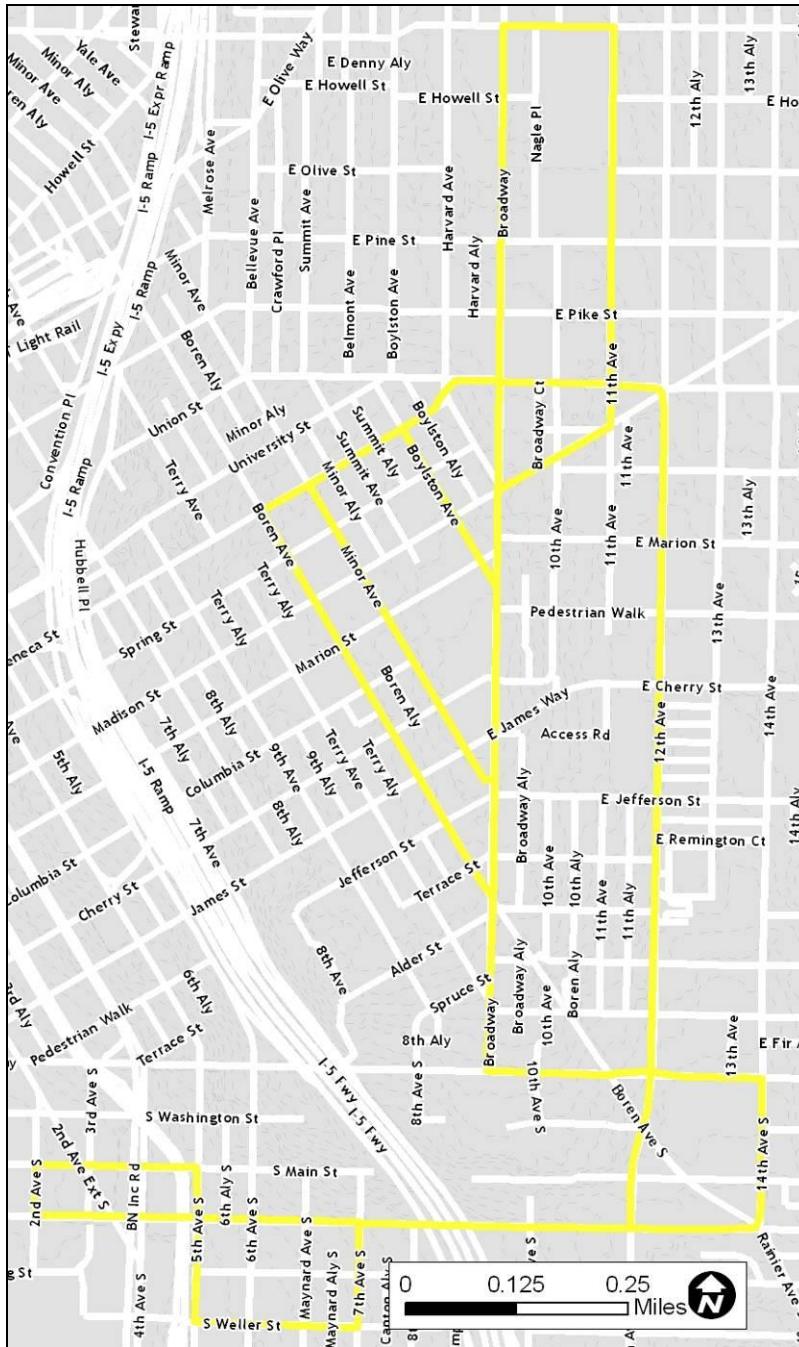


Figure 1. Potential Streetcar Alignments

The following roads were analyzed as part of this analysis:

- E Denny Way
- Broadway
- 11th Avenue
- 12th Avenue
- E Union Street
- Seneca Street
- Boylston Avenue
- Minor Avenue
- Boren Avenue
- E Madison Street
- E Yesler Way
- 14th Avenue S
- S Jackson Street
- 7th Avenue S
- Weller Street S
- 5th Avenue S
- S Main Street
- S 2nd Avenue

Table 1 defines the criteria utilized in this analysis while Table 2 shows the results of the analysis for each roadway. In cases where a roadway has multiple section options (e.g., one-way vs. two-way tracks) the roadway was analyzed separately under each set of conditions. Roadways were considered independently of their inclusion in any specific alignment alternative. For example, Broadway was analyzed as a discreet entity though it is utilized in several alignment alternatives. The results of this analysis are discussed in more detail in the narrative portion of this memorandum.

Table 1. Analysis Criteria and Definitions

	Ranking	Explanation
Presence of transit routes on the roadway	●	One or no transit routes use the roadway.
	◐	Two or three transit routes use the roadway.
	○	Four or more transit routes use the roadway.
Presence of on-street parking	●	There is no parking along the entire roadway.
	◐	Parking exists only along part of the corridor or one side of the roadway.
	○	Parking exists along the entire alignment.
Motor vehicle/ bicycle interaction	●	Bike lanes are available in both travel directions.
	◐	Bike lanes are available in one travel direction ¹ .
	○	Motor vehicles and cyclists must use the same lane in both travel directions.
Left turn conflicts	●	A cyclist never has to cross more than one set of tracks when turning left, all turns are at right angles.
	◐	A cyclist has to cross more than two sets of tracks at least once in the corridor; at least one turn has potential irregular intersection geometry.
	○	More than one intersection requires crossing two sets of tracks; multiple intersections have irregular geometry, or other potential challenges are present.

¹ Assuming a two-way street.

Steep/ challenging topography	●	The roadway is nearly flat and presents little topographic challenge.
	◐	The roadway has a moderate grade but most cyclists would use this route rather than seeking an alternative.
	○	The roadway is too steep for regular use by most cyclists.
Proximity to destinations	●	There are numerous cyclist destinations and attractors (e.g., commercial locations, businesses and schools) along this roadway.
	◐	There are some cycling destinations along this roadway; a moderate number of cyclists would access destinations along this route.
	○	There are few cycling destinations along this roadway; development is primarily auto oriented commercial, or residential. Cyclists are more likely to pass through rather than stop here.
Angle of track crossing at intersections	●	Intersection geometry is regular and tracks are center running, minimizing turning conflicts
	◐	The intersection geometry throughout the corridor is generally regular, but some turns are potentially challenging.
	○	The intersection geometry in this corridor is irregular, creating potentially significant conflicts. Other significant hazards may be present.
Platform/ cyclist conflicts	●	There is no station present, the station is in the roadway center, or the tracks are left running on a one-way street and platform is curbtight.
	◐	A station location has not been determined.
	○	Station is curbtight and sits in the bicycle travelway.
Bicycle/ streetcar interaction	●	The streetcar and cyclists travel in separate lanes
	◐	Cyclist and streetcar travel occurs in separate lanes but bike facilities are next to on-street parking. This configuration creates a potential hazard for a cyclist maneuvering into the vehicle travel lane to avoid an open car door. If this maneuver happens suddenly, the unwary cyclist may be at an increased risk of misjudging the placement of the streetcar track groove and catch their wheel.
	○	Cyclists must share a lane with streetcar tracks, on-street parking may be present.
Posted speed limit	●	The posted speed limit is less than 25 miles per hour.
	◐	The posted speed limit is 30 miles per hour.
	○	The posted speed limit is 35 miles per hour or greater.

A system of “●”, “◐”, and “○” was used to rate each alignment. A “●” indicates favorable conditions, a “◐” indicates moderate or neutral impact, and a “○” indicates the least favorable conditions. In cases of “○” or “◐” additional engineering and design may be necessary to confirm cyclist’s needs are met. A brief written discussion of the benefits and constraints of each roadway follows. Roadway analyses that are highlighted in gray denote an alignment that performs better for bicycles when more than one option is available (e.g., single track vs. double track).

Table 2. Summary of Alternatives Analysis Evaluation

Roadway	Posted speed limit	Roadway grade	Proximity to destinations	Presence of transit routes on the roadway	Presence of on-street parking	Motor vehicle/ bicycle interaction	Left turn conflicts	Angle of track crossing at intersections	Cyclist/ platform conflicts	Bicycle/ streetcar interaction
Denny Way (Single track)	○	●	●	●	◐	○	●	●	●	◐
Denny Way (with track terminus)	○	●	●	●	◐	○	◐	◐	○	◐
Broadway (Single track)	○	◐	●	◐	○	◐	◐	◐	●	◐
Broadway (Double track preferred section)	○	◐	●	◐	◐	○	◐	◐	◐	◐
Broadway (Double track alternative section)	○	◐	●	◐	◐	●	○	◐	●	●
11th Avenue	●	●	◐	●	◐	◐	●	●	◐	○
Madison Street	○	◐	●	◐	●	○	◐	◐	●	●

Roadway	Posted speed limit	Roadway grade	Proximity to destinations	Presence of transit routes on the roadway	Presence of on-street parking	Motor vehicle/ bicycle interaction	Left turn conflicts	Angle of track crossing at intersections	Cyclist/ platform conflicts	Bicycle/ streetcar interaction
12th Avenue (Yesler Way to Union Street)	○	◐	◐	●	○	◐	◐	●	○	◐
Union Street	●	●	○	●	○	○	◐	○	●	~
Seneca Street	●	◐	◐	●	◐	●	●	●	●	⬢
Boylston Avenue	○	◐	◐	●	●	●	◐	◐	○	~
Minor Avenue	●	◐	◐	●	○	○	○	○	○	~
Boren Avenue	○	○	◐	○	●	○	○	◐	○	~
Yesler Way	○	◐	○	●	◐	●	◐	◐	●	⬢
12th Avenue (Jackson Street to Yesler Way)	○	◐	◐	●	●	◐	○	○	○	◐
14th Avenue	●	◐	○	◐	○	●	●	●	●	◐
Jackson Street	●	◐	○	●	◐	○	◐	◐	●	◐
7th Avenue	●	◐	◐	●	◐	◐	◐	◐	●	●
Weller Street	●	◐	◐	●	○	●	●	●	●	○
5th Avenue	○	◐	●	○	●	○	●	◐	○	●

Roadway	Posted speed limit	Roadway grade	Proximity to destinations	Presence of transit routes on the roadway	Presence of on-street parking	Motor vehicle/ bicycle interaction	Left turn conflicts	Angle of track crossing at intersections	Cyclist/ platform conflicts	Bicycle/ streetcar interaction
Main Street	●	◐	◐	○	●	○	◐	◐	●	◐
2nd Avenue	●	●	●	●	●	○	●	●	●	◐

Roadway Alternatives Analysis

This section provides additional commentary on the affect that streetcar tracks will have on the cycling environment. This narrative calls out noteworthy constraints but does not necessary address constraints common to all corridors (e.g., there is a potential for a cyclist to catch there wheel in the track groove at every intersection where a left-turn is possible). Even if a specific constraint is not called out there could still be additional conflicts that should be addressed during further phases of design and analysis. Future phases of the alternative refinement will address constraints on the selected corridors in greater detail.

Denny Way

Pros: Denny Way between Broadway and 11th Avenue is not an arterial street and servers primarily to provide local access and as a point of access to Cal Anderson Park.

Mixed impact/Neutral: If any of the loop options are implemented, Denny Way will have one-way streetcar service; the double track streetcar on Broadway would create an additional tail-track terminus on Denny Way. Either option would require Denny Way to be converted to a one-way operation and create a separate auto lane and potential bike lane.

Cons: Either option will modify this portion of Denny Way from a two-way to one-way street. This may somewhat affect the access to/from the light rail station.

Summary: Either track alignment option will require cyclists to change their travel route through this area, Installation of streetcar tracks in this area should be accompanied by improved wayfinding signage and pavement markings as necessary to help cyclists move through this area.

Broadway Double Track

Pros: As Broadway is as a primary commercial corridor, maintaining optimal access and safety for users of all modes is a key consideration. The double track alignment maximizes user access rather than roadway capacity. The needs of through traffic should not be disregarded, but could potentially be accommodated on a parallel roadway. An alternate three-lane section proposed by URS would install bike lanes and remove parking on one side of the corridor, creating excellent travel conditions for bicyclists.

Mixed impact/Neutral: There is a trade-off between the benefit provided by center running tracks and potential left turn conflicts mitigated by this proposed section. When faced with irregular intersection geometry, the center running configuration (4-lane section) ensures that the cyclist will cross at an angle close to perpendicular. In the alternative (3-lane) section, the cyclist has a fairly narrow travel channel and faces a greater risk of catching the bicycle tire in the track groove.

Cons: The biggest potential obstacles to bicycle travel with the “4-lane” lane section on Broadway are the combination of shared motor vehicle/bike lanes next to parking, irregular intersection geometry throughout the corridor and potential changes in roadway configuration at stations stops throughout the corridor. Additional study and development of design treatments at station locations is necessary if the preferred design is selected for implementation.

Summary: While the “4-lane” section reduces the potential of conflicts for cyclists turning left, the “3-lane” section performs better for cyclists overall as it allows for greater separation between bikes and motor vehicles, which increases the comfort of bicycle travel and simplifies the roadway configuration at platforms for all users. Additional study and development of design treatments at station locations will be studied during the next phase of design.

Broadway Single Track

Pros: The single track streetcar section identified by URS on Broadway reduces the conflicts for cyclists traveling southbound.

Cons: Cyclists traveling northbound will still experience the challenges of turning left at intersections with irregular geometry.

Summary: This option minimizes station conflicts and provides a marked bike lane but still requires cyclists to travel between parked cars and a travel lane with streetcar tracks and places them at an increased risk of catching their wheel in the track groove if they have to maneuver to avoid an open car door.

11th Avenue

Pros: The lack of transit routes on 11th Avenue reduces the potential bicycle/motor vehicle/streetcar conflicts.

Mixed impact/Neutral: Depending on the alignment alternatives selected, a streetcar on 11th Avenue will likely need to convert 11th Avenue to a one-way street either northbound or southbound. The most significant impact will be to cyclists traveling in the opposite direction who will need to divert to a parallel street or pathway. The cyclists traveling in the same direction as the streetcar will need to have a dedicated bike lane between the streetcar and parked cars. There will be an increased risk for the potential of a cyclist catching a tire in the track groove and falling if a cyclist must swerve to avoid an open car door. Even if parking is not present, cyclists traveling between the streetcar and the curb have a narrower travel channel and must also cross the streetcar tracks to change lanes or make a left turn.

Cons: The conflicts with bicycle and streetcar travel on 11th Avenue include shared northbound or southbound bicycle/streetcar/ motor vehicle travel lane. The cyclists traveling in the direction opposite the streetcar must divert to either Broadway or 12th Avenue.

Summary: If the 11th Avenue couplet alignment is selected, the City will need to finalize the design section for the street to accommodate bicycles (bike lane), streetcar/motor vehicle travel lane and the on-street parking.

Madison Street

Pros: There are two travel lanes in each direction and the northbound streetcar would utilize the left, eastbound lanes, which reduces the potential conflict created by the shared cyclists and motor vehicles sharing the outside travel lanes.

Cons: The key design challenge will be accommodating cyclist through the irregular intersection at 11th Avenue.

Summary: Madison Street does not present significant challenges for cyclists. The street performs adequately, even with the installation of streetcar tracks.

12th Avenue (Yesler Way to Union Street)

Pros: Twelfth Avenue acts as a key north/south bicycle route and provides connectivity to neighborhoods in south Seattle and neighborhoods further north, such as Eastlake and the University District.

Mixed impact/Neutral: The streetcar tracks would have moderate impacts on this street. Intersection geometry is regular, so the difficulty of left hand turns would be minimized.

Cons: There are no other comparable bicycle connections through this portion of the City.

The existing bike-lanes are already of a sub-standard width and therefore, decreasing the comfort and accessibility of this route could degrade the cycling experience for existing and potential riders in many parts of the city and disrupt the flow of riders along this corridor.

Summary: Installation of streetcar tracks on 12th Avenue could significantly degrade the current cycling environment on this roadway.

Union Street

Pros: As Union Street is designated as a shared street for bicycles and motor vehicles, care should be taken to avoid degradation of the cycling experience on this roadway. The proposed section would add provide tracks in the existing auto lane (potentially eastbound or westbound).

Cons: The key challenge for cyclists on Union Street would be created by the intersection geometry at Broadway and Union Street, which is already tight and will likely impact the angle of streetcar tracks through the intersection. One potential mitigation measure could include pavement markings to help guide cyclists safely through this intersection.

Summary: Union Street is part of the existing bikeway system, but the streetcar would only utilize the roadway for a short distance. If this roadway is used, safe bicycle accommodation on this road should be a high priority. The design of the street section will be finalized in the next phase of design to accommodate bike lanes, streetcar/auto lane and maintain on-street parking.

Seneca Street

Pros: Seneca's slow speed limit and moderate grade make it a good street for cyclists. Cyclists traveling downhill are not exposed to the potential "dooring" conflict created by on-street parking. The *Seattle Bicycle Master Plan* does propose Seneca Street as a corridor for further study but bike lanes proposed in this process would create a higher quality cycling environment than the installation of shared lane marking.

Mixed impact/Neutral: Some of the potential concerns of installing streetcar tracks on the narrower segment of Seneca Street would be mitigated by the formalization of striped bike lanes.

Summary: Seneca performs fairly well for cyclists, even with the installation of streetcar tracks.

Minor Avenue

Cons: The proposed section would create a single northbound travel lane with parking at some locations along the corridor. The proximity of the shared lane to parking would give cyclists the option to travel either between the streetcar rails or in the narrow space between rails and parked cars/sidewalk. This configuration creates potential hazards for "dooring" and falling in grooves created by the track along the entire corridor. It is likely that cyclists using this route would be slowed by this additional navigational hazard, which could in turn affect motor vehicle traffic and emergency vehicles accessing the hospitals. For these reasons, it is likely that installing tracks on Minor Ave may require the conversion of the street to one-way operations for all traffic.

Summary: Installation of streetcar tracks on Minor Avenue will create significant degradation of the cycling environment. As this roadway is relatively quiet and comfortable in relation to neighboring Boren Avenue its modification could significantly impact the accessibility of this area for cyclists.

Boren Avenue

Cons: The proposed section would install tracks on the “right” southbound travel due to the width of the existing street and its travel lanes. Any southbound cyclist would need to travel between the streetcar rails or in the narrow space between rails and sidewalk. It is likely that cyclists using this route would be slowed by this additional navigational hazard. As the posted speed on this roadway is 35 miles per hour, additional slowing of cyclists could have a noticeable impact on the entire roadway system.

Summary: Installation of streetcar tracks on Boren Avenue will significantly degrade the potential for use by southbound cyclists.

Boylston Avenue

Mixed impact/Neutral: The relatively narrow sidewalk width and high pedestrian volume in this area precludes accommodating cyclists on shared bicycle/pedestrian facilities. Cyclists would be accommodated on shared roadway facilities. The potential conflict created by shared lanes is mitigated in part by the slow travel speeds through this area.

Cons: Conflicts at station locations and the irregular intersection geometry at Harvard Avenue and Seneca Street would require additional design consideration to minimize conflicts created by the turns in the track.

Summary: Installation of streetcar tracks would create significant challenges for cyclists traveling in both directions due primarily to the shared streetcar/bicycle/motor vehicle travel lane. If this alignment is selected, the project should incorporate bike lanes or the city should develop alternative parallel on-street or off-street cycling facilities.

Yesler Way

Pros: Yesler Way would accommodate cyclists comfortably by providing wide travel lanes and center running streetcar platforms.

Mixed impact/Neutral: Parking along the eastbound side of the street creates a potential conflict for cyclists maneuvering into the travel lane to avoid an open car door. The width of the travel lanes does help to mitigate this impact.

Cons: There is a potential left turn conflict at Boren Avenue. Cyclists traveling downhill on Boren Avenue and turning onto Yesler Way will be forced to make a sharp left turn into the bike lane to avoid crossing into the existing tracks.

Summary: Yesler Way performs adequately for cyclists, though potential conflicts exist and should be addressed as the project moves forward.

14th Avenue

Pros: The 14th Avenue alignment would accommodate cyclists comfortably by providing them with separated bike lanes. The lack of stations in this segment also helps to minimize cyclist/streetcar conflicts.

Cons: One area of potential concern is the intersection of Rainer Avenue and Jackson Street. It may be beneficial to mark the cyclist’s preferred travel path through this intersection with dashed lines or green markings to minimize potential hazards.

Summary: Overall, if streetcar tracks are installed on 14th Avenue, it still performs adequately for cyclists.

12th Avenue (Jackson Street to Yesler Way)

Cons: The southbound track would need to be located in the right lane which creates a direct conflict with cyclists. The northbound track would be in the left lane which would not cause cyclists to have to share a travel lane with the streetcar but, tracks along this segment of roadway would add an additional layer of complexity to the already challenging travel conditions that include:

- Irregular intersection geometry at Boren Avenue
- Slip lane on 12th Avenue at Boren Avenue
- Double left turn lane on 12th Avenue Avenue
- Significant grade along intersection approaches that could impact travel speed and sight lines

As 12th Avenue is heavily utilized by cyclists and no other comparable routes are available in this area the potential impact on cyclists is increased.

Summary: Installation of streetcar tracks on 12th Avenue would significantly compromise a cyclists' ability to navigate this portion of the corridor, which could result in decreased cycling traffic and increased motor vehicle and cyclist conflicts.

Jackson Street

Pro: The reconfiguration of Jackson Street presents the City with an opportunity to implement bicycle facilities recommended in the *Seattle Bicycle Master Plan*.

Mixed impact/Neutral: The center running streetcar tracks on Jackson Street minimize bicycle / streetcar conflicts along the roadway. Cyclists attempting to turn left must still contend with streetcar tracks as they would anywhere else along the proposed alignment. Jackson Street is classified as a freight route and the *Seattle Bicycle Master Plan* recommends that all freight routes in hilly locations call for an uphill bike lane and downhill shared lane markings.

Summary: If the City decides to implement components of the Seattle Bicycle Master Plan concurrent with the First Hill Streetcar Project, additional study and development of design treatments will be studied during the next phase of design.

7th Avenue

Pros: Conversion of 7th Avenue to a one-way northbound street would allow cyclists to maximize their distance from the streetcar.

Cons: This one-way alignment would create track crossing conflicts for cyclists turning left onto Jackson Street and potentially with right-turning cyclist

Summary: 7th Avenue performs adequately with streetcar tracks, but some significant design challenges are present. If this alignment is chosen it may be necessary to remove a portion of the curb extension at Jackson Street to accommodate right-turning cyclists.

Weller Street

Pros: Though the proposed section on Weller Street would accommodate cyclists and the streetcar in a shared lane, the width does provide the cyclist with some room between parked cars and the tracks. The slow posted speed, 25 miles per hour, reduces the severity of potential conflict. There are no platforms along this roadway to create conflicts.

Cons: The shared lane does increase the chance that an unwary cyclist will try to take the lane and catch their tire in the track groove.

Summary: The roadway performs adequately if streetcar tracks are installed.

5th Avenue S

Mixed impact/Neutral: The International District's light rail stop is located along this roadway corridor. The streetcar stop proposed on 5th Avenue S would provide good transit connectivity but would increase the difficulty of bicycle travel along this street.

Cons: The challenges presented to cyclists in this alignment stem from right running tracks, shared bicycle/streetcar travel lanes and heavy transit use. Tracks transition from the left lane to the curbside lane, requiring cyclists to share the lane with the streetcar tracks. The curb-tight station between King Street and Weller Street would create additional complications for cyclists using this roadway.

Summary: Installation of streetcar tracks on 5th Avenue S could create a significant barrier for cyclists seeking to access King Street. This could constrain network connectivity if bike lanes are not provided on Jackson Street and King Street is designated as the preferred bicycle corridor.

Main Street

Mixed impact/Neutral: Despite heavy transit utilization, Main Street can accommodate cyclists adequately in a shared auto/ bicycle travel lane. The posted speed limit, 25 miles per hour, is likely comfortable for the type of cyclist that would use this roadway.

Summary: Streetcar operations on Main Street would mimic those of the Waterfront Trolley and not change any of the existing uses of the street that exist today.

2nd Avenue South

Pros: Cyclists traveling along Second Avenue South will be minimally impacted by the installation of northbound streetcar tracks; the roadway is flat and relatively wide, which helps to reduce the severity of potential conflicts.

Mixed impact/Neutral: Installation of streetcar tracks could affect motor vehicle traffic for attendees of events at the sports stadiums. Additional congestion on Second Avenue South during these times could create additional conflicts for cyclists.

Cons: The geometry of the turn from Jackson Street to Second Avenue South may be impacted by an already existing water main, which would ultimately create a greater turning radius and impact cyclists making turns at this intersection.

Summary: Installation of facilities on this roadway would likely have little impact on bicycle traffic in this area.

Key Findings

Based on the bicycle benefits and constraints analysis, Alta finds that

- The Two-Way Broadway and Pioneer Square loop alignments maximize cyclist comfort and maintain bicycle system quality.
- Streetcar tracks along 5th Avenue south of Jackson create challenges for cyclists accessing King Street.
- The Minor/Boren couplet has the highest potential to negatively impact cycling conditions. These impacts occur primarily through the installation of tracks on roadways that already present significant challenges to a cyclist (e.g., roadway speed, and number of potential vehicle conflicts).
- The Broadway/Boylston alignment could provide good connectivity while minimally impacting the cycling environment. There are some design challenges created by tight

intersection geometry and irregular left turns. Alternate cycling routes may be necessary through this area.

- Installing streetcar tracks on any portion of 12th Avenue will result in degradation of a key north/south cycling corridor.
- Jackson Street presents significant challenges for adequately accommodating all transportation modes. The City should consider designating King Street as the preferred bicycle travel corridor, optimize the street for bicycle travel and provide enhanced wayfinding signage to direct people to the facility.
- Many intersections on the proposed study corridor present potential hazards for cyclists turning left due in part the juxtaposition of offset roadway grids. As the track alignment is further refined, bicycle friendly design solutions specific to each intersection will be finalized.
- The several potential alignments in the northern (Broadway) portion of the corridor include loop options along 11th and 12th Avenues that would create either clockwise or counterclockwise streetcar service. Either option will need to carefully be designed to include bike lanes and minimize the loss of parking where possible.