



City of Seattle
Edward B. Murray, Mayor

Department of Transportation
Scott Kubly, Director

Date: June 28, 2017

To: The Honorable Mike O'Brien, Chair, Sustainability & Transportation Committee
The Honorable Rob Johnson
The Honorable Kshama Sawant

From: Scott Kubly, Director, Seattle Department of Transportation

Subject: Response to 2017 Statement of Legislative Intent 65-1-A-1; Streetcar and Bicycle Safety Report

In 2016, the Seattle Department of Transportation convened a workgroup to address bicycle safety concerns in the design of the Center City Streetcar Connector project and to explore and evaluate bicycle safety improvements that could be made to the existing South Lake Union and First Hill streetcar lines.

As a part of the 2017 budget process, the City Council adopted a Statement of Legislative Intent (SLI) requesting that Seattle Department of Transportation (SDOT) report on recommendations from the workgroup, addressing the following questions:

1. What recommendations resulted from the streetcar/bike design group regarding the existing streetcar lines?

SDOT is committed to owning and operating a streetcar system that is as safe as possible for all users of our transportation system, including people biking. Since last fall, the work with the streetcar/bike design group focused on the Center City Connector design. The initial focus has been on the Center City Connector because the project is in the design phase (currently moving in to final design) and there was still opportunity to change the design to make it more comfortable to bike at key points along the streetcar alignment.

When the group was first convened we discussed their interest in remaining engaged in a review process for the remaining lines. This summer, SDOT will reconvene the streetcar/bike design group and focus on the South Lake Union alignment. This fall we will convene the group to focus on First Hill. Recommendations on the two existing lines will be complete by the end of the year.

Review of the two existing lines will begin with a tour of the alignments and a discussion of focus areas along the routes. We will then work with the group, SDOT staff, and the consultant team to identify changes to signage, roadway markings, signals, and possible alignment alterations. Thereafter recommended changes will be made as quickly as possible considering design, outreach, and crew scheduling.

However, where possible we will not wait until the end of the year to make improvements. For example, we will look to include bike safety improvements such as signage, signals, and roadway markings in conjunction with planned streetcar speed and reliability improvements on the First Hill line this summer.

The streetcar speed and reliability improvements will be done in two phases. An early phase this summer will include adjustments to signals primarily along Jackson St. The second phase, later this year will include possible changes to parking and right-of-way prioritization along Jackson and Broadway, and will require additional design and public engagement. Bike safety improvements will be implemented with the speed and reliability improvements where possible.

2. What is the implementation plan and anticipated resource allocation for making safety improvements along the existing streetcar lines? As part of the SLI response, SDOT should address the potential for project implementation in 2017.

Please see question 1 response.

3. What are current best practices for streetcar/bicycle safety, and how will the Center City Connector design meet and/or exceed these best practices?

The Center City Connector team is committed to working with community members to develop designs that make it comfortable for people to bike. The response below includes an outline of the bike review group process, best practices and how they're applied to the Center City Connector, and an overview of each design "focus area."

Bike review group process

SDOT staff met with representatives from various bike and transit organizations to discuss the bike design within the Center City Connector alignment. Representatives include:

- Jeff Aken, Cascade Bicycle Club
- Kelsey Mesher, Cascade Bicycle Club
- Gordon Padelford, Seattle Neighborhood Greenways
- Claudia Lewis, Seattle Bike Advisory Board
- Jonathan Howard, Seattle Transit Advisory Board
- Hester Serebrin, Transportation Choices Coalition

The group met 4 times over 6 months (October 2016-March 2017) and each meeting had specific objectives (See appendix A for full meeting notes):

- **Meeting 1:** Share update on 60% design, including operational requirements; Identify potential “focus areas” related to bike infrastructure
- **Meeting 2:** Review solution/concept options for the following focus areas:
 - 1st and Jackson
 - 1st and Stewart
 - Stewart/Westlake/6th Ave
- **Meeting 3:** Discuss Center City Bike Network and One Center City strategies and gather input on how bike network plans affect the Streetcar-bike focus areas
- **Meeting 4:** Share refined alternatives for the 3 focus areas; Discuss Statement of Legislative Intent to submit to Council

At these 4 meetings, the bike review group provided specific input to the design team on each focus area and across the alignment.

Best practices and how they’re applied to the Center City Connector

Streetcar rail and bike interaction best practices are based on the National Association of City Transportation Officials (NACTO) Transit Street Design Guide and engineering experience. The best practice approaches are described below along with the applications to the Center City Connector design:

1. **Best practice:** *Determine alternative routes where possible to minimize the number of people bicycling near streetcar rails.* This is best accomplished through the signing of alternative routes such as parallel streets and physical enhancements such as protected bike lanes.

Application to project:

- Stewart St alternate route: Protected bike lanes on Pine/Pike and Bell/Blanchard (in planning)
 - 1st Ave alternate route: Protected bike lane on 2nd Ave (in construction)
 - S Jackson St alternate route: Bike treatments such as wayfinding and pavement markings on S King St to the south and S Main St to the north (in planning).
2. **Best practice:** *Physically separate people bicycling from the travel lane with the streetcar rail.* This is accomplished by installing a protected bike lane or directing people bicycling to travel in a general-purpose lane adjacent to the lane with the streetcar.

Application to project:

- Stewart St: General purpose travel lanes separate people biking in the right lane from the streetcar lane
- 1st Ave: Streetcar is in its own dedicated lane. People biking both northbound and southbound will share general purpose lane with vehicles with clear delineation between the general-purpose lane and the streetcar lane. With design treatments, we expect vehicles will be moving at a slower speed than today on 1st Ave.
- S Jackson St: Streetcar is in its own dedicated lane. In westbound direction, people biking share general purpose lane with vehicles with clear delineation between the general-purpose lane and the streetcar lane. In eastbound direction, people biking will have designated space at-grade with the sidewalk.

3. **Best practice:** *Where people bicycling are crossing the tracks, they must cross at an angle between 60 and 90 degrees.* This allows the person bicycling to ride upright and adjust body position as necessary to maintain balance. This is accomplished through pavement markings directing people bicycling to cross at a right or near-right angle to the tracks. Supplemental signs are included where necessary.

Application to project:

- Left turns onto 1st Ave: 1st Ave cross streets with left turns will include bike boxes to allow space for people biking to queue and cross the tracks at a right angle
- 1st and Jackson: Pavement markings will direct people biking to cross at or near a right angle
- 1st and Stewart: People biking northbound will be directed up a ramp onto the sidewalk so they can cross the tracks with pedestrians at a near right angle
- Stewart/Westlake/6th Ave: People biking will have an exclusive bike signal phase and pavement markings to direct them to cross at or near a right angle

4. **Best practice:** *Signing track locations in a consistent manner.* To alert people bicycling along or across the tracks, signing should be consistent to alert when tracks may cross the travel path or when they are parallel to the path.

Application to project:

Throughout the Center City Connector route, signs will be posted for all cross streets indicating the presence of tracks in the roadway. At locations where the tracks are turning or where people biking may first encounter the tracks, such as the intersections at 1st and Stewart and 1st and Jackson, warning signs will instruct people biking to use extreme caution.

Design overview of each “focus area”

The Center City Connector design team developed designs with input from bike review group for the following focus areas where bicyclists need to cross the streetcar tracks:

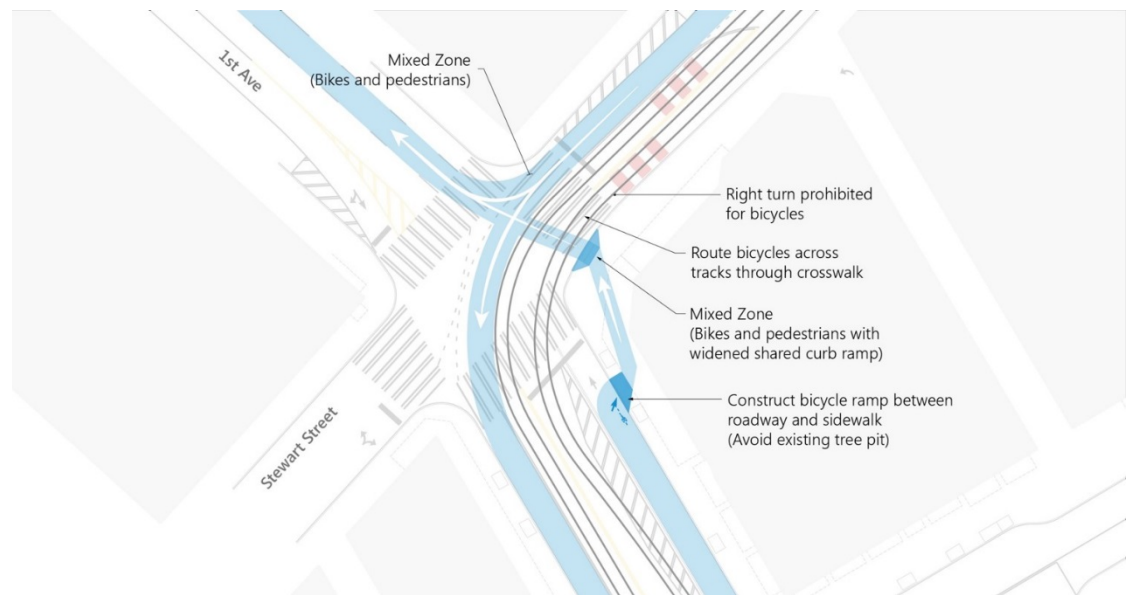
- 1st and Stewart
- Stewart/Westlake/6th Ave
- 1st and Jackson

1st and Stewart

Overview: Bicyclists riding northbound on 1st Ave will be routed onto the sidewalk at 1st and Stewart so they can cross the tracks at Stewart St at or near a right angle.

Notes:

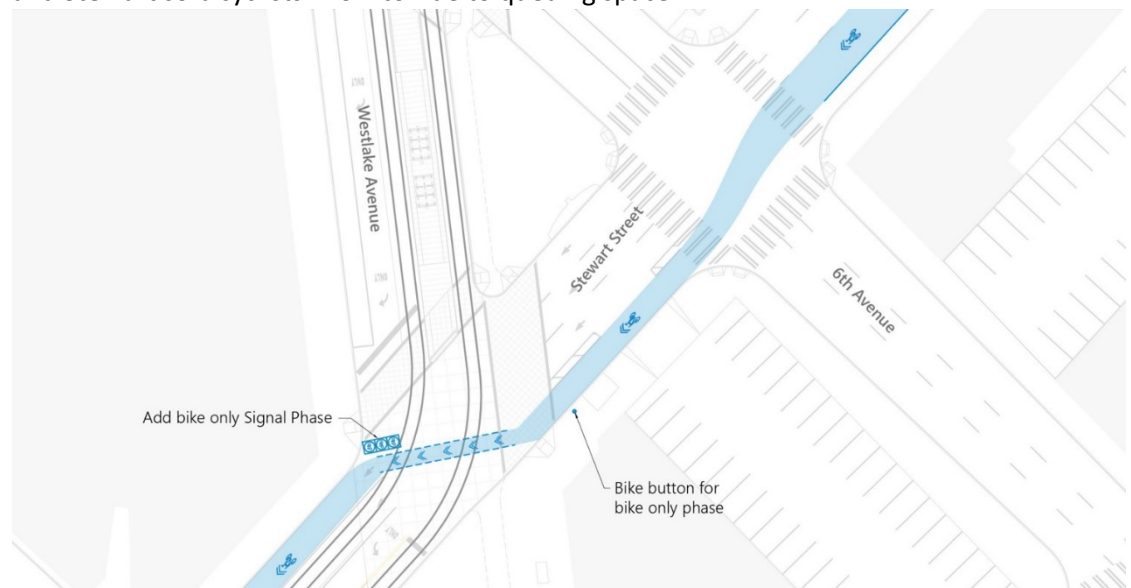
- Right turns are prohibited for bicycles from 1st Ave onto Stewart St because Stewart St is one-way westbound
- Left turns will be restricted from 1st onto Stewart so people biking would need to use the crosswalk
- The bike review group supports this design with suggestions for clear signage to alert bicyclists they need to ride on the sidewalk and cross with pedestrians, as well as merge back into traffic on 1st Ave



Stewart/Westlake/6th Ave

Overview: Bicyclists riding westbound on Stewart St will be routed to a bike queuing space at Stewart St and Westlake Ave. They'll have a designated bike signal phase so they can cross the tracks at Stewart St and Westlake Ave at or near a right angle.

Notes: The bike review group supports this design with suggestions for clear queuing space for bicyclists to wait for the signal as well as pavement marking guidance at 6th and Stewart so bicyclists know to ride to queuing space

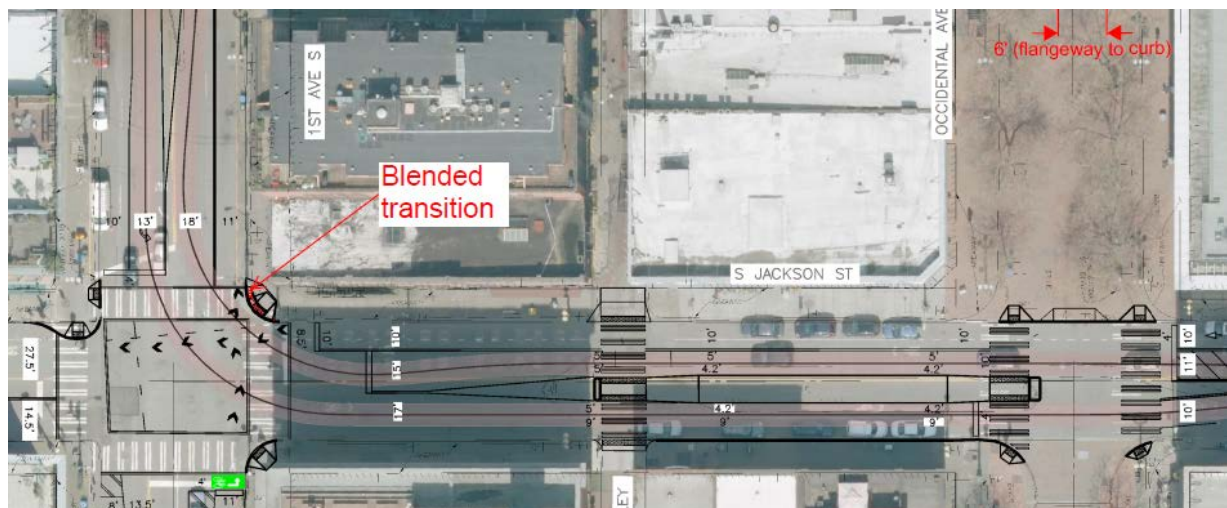


1st and Jackson

Overview: In westbound direction, people biking share general purpose lane with vehicles with clear delineation between the general-purpose lane and the streetcar lane. In eastbound direction, people biking will have a bike lane at-grade with the roadway.

Notes:

- This focus area has the most space restrictions of the 3 focus areas. The design team will continue communicating with the bike review group to finalize the design.
- We will extend the curb ramp on the northeast corner of 1st and Jackson to make the right turn from Jackson onto 1st for bikes more comfortable.
- We will add a bike box to the southeast corner of 1st and Jackson to all people biking space to queue and cross the tracks as close to a 90 degree angle as possible.



SDOT staff from the Center City Bike Network and One Center City team were included in this process to ensure the Center City Connector aligns with their goals for a downtown bike network. The following projects will pair well with the Center City Connector to provide all ages and abilities biking options parallel to the future streetcar alignment (see Appendix B for map):

- The future 2nd Ave protected bike lane will run parallel to the 1st Ave section of the alignment
- The potential Pike/Pine protected bike lane will run parallel to the Stewart section of the alignment
- The Center City Bike Network includes planning a connection between the 2nd Ave protected bike lane and King St, which will include a crossing at Jackson St

5. How will freight movements be accommodated with other transportation modes along the route?

The alignment is in an urban center that receives deliveries and freight through-traffic so it's important to consider freight movement in the design. To ensure the alignment won't inhibit freight movement, the design team runs auto-turn simulations as the design develops.

To preserve loading, our goal is a 1:1 replacement of commercial load zones where there is no streetcar station or left turn lane. We are coordinating with adjacent businesses and residences to determine how to best manage the load zones along the alignment and on adjacent streets.

Appendix A – Bike review group meeting notes

Meeting #1

Center City Connector Streetcar

Bike-Streetcar Design Review Meeting Notes

Updated: 11/22/16

Meeting date: October 21, 2016

Location: Seattle Municipal Tower Room 3940

Meeting objective:

- Opportunity for better direct communication, idea sharing
- Share update on 60% design, including operational requirements
- Identify overlap between streetcar and bike infrastructure
- Listen to and understand concerns of advocates
- Discuss design ideas and options
- Share how information will be used and considered

Attendees:

- Jonathan Howard, Seattle Transit Advisory Board
- Kelsey Mesher, Cascade Bicycle Club
- Gordon Padelford, Seattle Neighborhood Greenways
- Hester Serebrin, Transportation Choices Coalition

Staff

- Bill Bovey, Construction Manager
- Andrew Glass Hastings, Transit and Mobility Director
- Emily Reardon, Communications Lead
- Genesee Adkins, Chief of Staff
- Mike Hendrix, Parsons
- Natalie Quick, Natalie Quick Consulting

Summary

Key takeaways*

**Note: team went through the CCC roll map from north to south; majority of comments were on the Stewart St. segment*

- Discussion/concern for how bikes get to stops on Stewart Street (north and south)
- Feedback that CCC roll maps should show interactions with other vehicles (i.e. Buses using general purpose lands – is that an issue?)
- Need clarification re: safe crossings at PBLs; What do “safe crossings” look like – i.e. Portland Pivot
- Concern for possible bike/ped conflicts at 2nd / 3rd Ave. and Stewart St.
- Need clear /consistent communication at all intersections for all modes

- Request for PBL on Stewart; discussed consistency with Bike Master Plan and need for east/west bicycle connectivity; could connect/extend PBL on Stewart to 4th / 5th (using plaza ROW?)
- As streetcar turns left on 1st, should have signal priority
- Questions about possible Pronto station at 1st / Pike
- Suggestion to calm 1st Ave. and reduce speed to 20 MPH
- Great deal of time brainstorming/talking through the “hot spot” crossing from the south side of Stewart to the north side of Stewart at 6th Ave.; SDOT needs to follow up here with what is possible; discussed possibly using some of the existing plaza to slow/redirect bikes
- Could curb ramps (Columbia St., others) be at 90 degrees for ADA; Should there be 90 degree turns onto Jackson St.; seems to be a pinch point here
- At Main St. there was an old bike route to the C/ID? Old tracks here?

Next steps

- Next discussion opportunity (identified as December 2016); Attendees asked for very clear feedback at the December meeting (or soon after) around what can be done (in what was discussed today), what might be able to be done and what cannot be done.
- Ongoing dialogue opportunities between SDOT and bike advocates
- Opportunities for partnership in 2017

Meeting #2

Center City Connector Streetcar

Bike-Streetcar Design Review Meeting Notes

Updated: 1/27/17

Meeting date: January 20, 1-2:30 PM

Location: Seattle Municipal Tower Room 3940

Meeting objective: Review concept options for the following areas: 1st and Jackson, 1st and Stewart, and Stewart/Westlake/6th Ave

Attendees

- Jeff Aken, Cascade Bicycle Club
- Claudia Lewis, Seattle Bike Advisory Board
- Gordon Padelford, Seattle Neighborhood Greenways
- Hester Serebrin, Transportation Choices Coalition

Staff

- CJ Holt, SDOT Project Manager
- Natalie Quick, Natalie Quick Consulting
- Sara Colling, SDOT outreach
- Sam Woods, SDOT Center City Bike Network
- Dongho Chang, SDOT Traffic Operations
- Susan Bartlett, Parsons
- Mike Hendrix, Perteet

Summary

After a brief project update, the group reviewed design alternatives for 3 different intersections (1st and Jackson, Stewart/Westlake/6th, and 1st and Stewart). These design alternatives were based on initial feedback from the group during the first meeting in October 2016.

1st and Jackson

- Alternative 1 (reroute) – Reroute bicyclists around 1st and Jackson via S King St, 2nd Ave S, S Washington St, and/or S Main St
 - Riding on a different street than Jackson seems out of the way but would be open to it if it were a far better route
 - Potentially add Alt 1 to either of the other options in combination so people on bikes have the option of riding on Jackson or taking alternate routes
- Alternative 3 (sidewalk) – Expand curb ramps to allow bikes to ride on shared sidewalk with pedestrians
 - Alt 3 is problematic because the sidewalk is already congested with pedestrians
 - Attendees and SDOT staff agreed to remove Alt 3
- Alternative 5 (protected bike lane between 1st Ave S and Occidental Ave S) – split station platform to both sides of Jackson with 1 protected bike lane on each side of street
 - Claudia, who rides with her son each day from Beacon Hill to the waterfront, prefers Alt 5
 - Concern with the northeast corner of 1st and Jackson where the streetcar cuts close to the curb and many vehicles are turning
 - SDOT noted they will take this into consideration. The curb ramp will be rebuilt and bicyclist would have their own signal phase which would help.
 - Based on this input, design team will dig deeper into Alt 5 to determine whether it's feasible in terms of design and cost

Stewart/Westlake/6th Ave

- All alternatives:
 - The [Roosevelt Bus Rapid Transit](#) project is planning to build a protected bike lane on Stewart St ending at 7th Ave (to connect to the 7th Ave protected bike lane
 - SDOT will provide an update at the next meeting on when the Roosevelt project will be built
 - A protected bike lane on Stewart St between 2nd and 6th avenues is not currently on the table because Stewart is a major transit corridor and there isn't enough space for bike lanes; Pike/Pine and Bell/Blanchard are the planned focus for an east/west route through downtown
 - All routes include 2-way protected bike lane on Stewart St between Westlake Ave and 7th Ave which is a significant scope addition so would need Federal grant approval
- Alternative 1 (bike scramble phase) – guides bicyclists to cross Westlake Ave to stay straight on Stewart St with bike only signal phase
- Alternative 3 (reroute to McGraw Square) – guides bicyclists off Stewart St to McGraw Square
 - To get to 2nd Ave protected bike lane, people would need to use ped signal and ride in general purpose lane
 - Route would need substantial wayfinding to other routes

- McGraw Square doesn't seem like a big destination; seems odd to make McGraw Square the end point
 - Could only widen the curb ramp rather than guide people to bike into McGraw Square
 - SDOT will check whether McGraw Square is being considered for a [mobility hub](#)
- Alternative 4 (bike scramble phase and optional reroute) – combination of Alts 1 and 3
 - Concern about leaving out track crossing to stay on Stewart St within Alt 3 so makes sense to combine Alts 1 and 3
- Overall comments:
 - Selecting these options will depend on rest of the bike network which will be covered in next meeting
 - There's a driveway on Stewart St between 6th and Westlake Ave that would need treatments; suggestion to move driveway to 6th; property should be redeveloped at some point

1st and Stewart

- Alternative 1 (bike sidewalk ramp)
 - The block on Stewart St between 1st and 2nd avenues will not have space for separate bike facilities; bikes will be discouraged from riding in the general-purpose lane because it's shared with the streetcar
 - People biking will be routed onto the sidewalk to get to destinations on Stewart St between 1st and 2nd and to continue straight on 1st Ave using the crosswalk

Next steps

- Next meeting is February 9, 3:30-5 PM
 - We'll zoom out and discuss Center City Bike Network and One Center City strategies
 - SDOT will provide an update at the next meeting on when the Roosevelt project will be built
 - SDOT will check whether McGraw Square is being considered for a mobility hub
 - Note: After the meeting, SDOT checked with the mobility hub project manager and learned McGraw Square may be used for some mobility hub functions as the streetcar terminus within the Westlake hub area.
- Following the February 9 meeting, SDOT will share refined focus area alternatives based on this group's input from today

Meeting #3

Center City Connector Streetcar

Bike-Streetcar Design Review Meeting Notes

Updated: 2/14/17

Meeting date: February 9, 2017, 3:30-4 PM

Location: Seattle Municipal Tower Room 3940

Meeting objective: Discuss Center City Bike Network and One Center City strategies and gather input on how bike network plans affect the Streetcar-bike focus areas

Attendees

- Jeff Aken, Cascade Bicycle Club
- Kelsey Mesher, Cascade Bicycle Club
- Gordon Padelford, Seattle Neighborhood Greenways
- Hester Serebrin, Transportation Choices Coalition

Staff

- Louisa Galassini, SDOT project management
- Emily Reardon, SDOT outreach
- Sara Colling, SDOT outreach
- Sam Woods, SDOT Center City Bike Network
- Eric Tweit, SDOT One Center City

Summary

One Center City

After brief introductions, the group reviewed the options developed by the One Center City team as potential near-term mobility strategies. [One Center City](#) is a collaboration between SDOT, King County Metro, Sound Transit, and the Downtown Seattle Association to plan for moving people to and through downtown and creating an inviting public realm as the city continues to grow. The near-term mobility strategies are planning for when buses are moved out of the transit tunnel for construction of the Convention Center addition and/or construction of East Link light rail (potentially as early as 2018).

- **North/South streets:**
 - **Option A: Do nothing** (No near-term strategies are implemented)
 - **Option B: Operational enhancements** on 2nd, 3rd, and 4th avenues (Includes a protected bike lane couplet on 4th and 5th avenues)
 - **Option C: 4th Ave and 5th Ave transit couplet** (Removes existing bicycle lane on 4th and does not include any new protected bike lanes on 4th or 5th)
 - **Option D: 5th Ave transit spine** (Includes a 2-way protected bike lane on 4th Ave)
- **Pike/Pine** (these options can be paired with any of the North/South options above)
 - **Option A:** Do nothing
 - **Option B:** Protected bike lane couplet on Pike and Pine between 2nd Ave and 8th Ave and protected bike lanes on each side of Pike St between 8th Ave and Broadway
 - **Option C:** Protected bike lane couplet on Pike and Pine between 2nd Ave and Broadway (Pike and Pine would be converted to one-way operation for all traffic between 8th Ave and Broadway)

Comments from group:

- Cascade Bicycle Club has already shared with the One Center City team that Option C is not preferred
 - Gordon agreed Option C needs more options for bikes and added that Option B is not offering enough for transit
- Eric shared that the decision on these strategies will be made by the Executive Steering Committee composed of leaders from each agency. An advisory committee as well as public input will inform their decision.

Center City Bike Network

The group reviewed the overlay map showing the Streetcar route overlaid with the Center City Bike Network and One Center City planning (see Appendix A). Sam shared that S Main St and 5th Ave could be a potential bike connection between the 2nd Ave protected bike and the International District.

Comments from group:

- The group thought S Main St and 5th Ave could be a viable option but reiterated that the desire line is to continue biking south on 2nd Ave to take a left on Jackson St
 - Sam showed a preliminary option her design team is studying that would improve the crossing at 2nd and Jackson. The group was supportive of that option.

Streetcar-bike focus areas

The group then discussed how the bike network planning affects the Streetcar-bike focus areas.

1st and Jackson

- Alternative 1 (reroute) – Reroute bicyclists around 1st and Jackson via S King St, 2nd Ave S, S Washington St, and/or S Main St
 - Comments from group
 - Alt 1 makes sense as an integration into the Center City Bike Network planning. It's preferred to combine it with Alt 5 so people have the option of riding on Jackson or taking alternate routes.
- Alternative 3 (sidewalk) – Expand curb ramps to allow bikes to ride on shared sidewalk with pedestrians
 - Comments from group
 - The group reiterated that Alt 3 would be problematic because of the limited sidewalk space
- Alternative 5 (protected bike lane between 1st Ave S and Occidental Ave S) – split station platform to both sides of Jackson with 1 protected bike lane on each side of street
 - SDOT staff shared that Alt 5 includes the streetcar sharing a right turn lane with vehicles which could slow the movement of the streetcar system and impact reliability. They also shared this alternative still needs to be vetted internally to make sure it's feasible in terms of operations and cost.
 - Comments from group
 - Concern with the northeast corner of 1st and Jackson where the streetcar cuts close to the curb and many vehicles are turning
 - Jeff noted people biking would be attracted to the protected bike lane and then dropped into vehicle traffic
 - Gordon suggested locating the streetcar station around the corner on 1st, but Louisa shared that change would require removing many London Plane trees



- The group thought Alt 5 was maybe not absolutely critical, but important to strongly consider
- Next steps:
 - Design team will review combination of Alt 1 and 5 and will dig deeper into Alt 5 to determine whether it's feasible in terms of operations and cost

Stewart/Westlake/6th Ave

SDOT staff shared that after more internal vetting since presenting the 3 alternatives at the previous meeting, SDOT proposes to add sharrows and pavement marking guidance to Stewart St that directs bicyclists safely across the tracks. This would include a push button for bicyclists on Westlake and Stewart.



- Comments from group:
 - This proposed option seems better than the previous options because people will be directed to 7th Ave and Pike/Pine as part of the Center City Bike Network
 - Gordon suggested a near side bike signal head so it's more visible for bicyclists
 - Gordon noted that the pavement marking guidance will need to be very precise to guide bicyclists safely and it will need to lead people biking all the way across the tracks so back tires don't get caught in the tracks
 - Kelsey suggested a clearly delineated bike queuing space for bicyclists to wait for the light, particularly so vehicles exiting the driveway on Stewart St between 6th and Westlake Ave don't turn into the bike queuing space (see photo). It could be delineated with paint or pylons.
- Next steps:
 - Design team will move forward with sharrow option and consider the following:
 - Near side bike signal
 - Precise pavement guidance to prevent back tires from getting caught in the tracks
 - Clearly delineated bike queuing space for bicyclists to wait for the light, potentially with in-street bollards located near the driveway at Stewart/Westlake

1st and Stewart

The group reviewed the alternative to route bicyclists going north on 1st to ride onto the sidewalk ramp so they have a clear, perpendicular crossing of the tracks on 1st and Stewart.



- Comments from group:
 - Gordon noted many bicyclists will likely not use the sidewalk ramp; he suggested an all-way signal phase at this intersection so bicyclists have time and space to cross the tracks at a 90-degree angle
 - Kelsey suggested grass, turf, or another treatment to make it clear that bicyclists should avoid the streetcar tracks
 - Gordon asked that team share plans for what 1st Ave will look like for people biking
- Next steps:
 - SDOT staff will review whether grass or turf was considered as a design treatment
 - At the next meeting, staff will share the plan for signaling this intersection and design team will consider an all-way stop for this intersection. A clear diagram of vehicular movement at this intersection would be helpful.
 - SDOT will also share cross sections/renderings for what 1st Ave will look like for people biking

Next steps

- Sara will work with the group to schedule the final group meeting in early March
- At the final meeting, the design team will share refined alternatives based on the group's input from today and at the previous meeting
- Attendees are reviewing a draft handout about the Streetcar and bikes and will share input

Meeting #4

Center City Connector Streetcar

Bike-Streetcar Design Review Meeting Notes

Updated: 3/15/17

Meeting date: March 6, 2017, 9:30-11 AM

Location: Seattle Municipal Tower Room 3702

Meeting objectives:

- Share refined alternatives for the 3 focus areas
- Discuss Statement of Legislative Intent to submit to Council

Attendees

- Jeff Aken, Cascade Bicycle Club
- Kelsey Mesher, Cascade Bicycle Club

- Claudia Lewis, Seattle Bike Advisory Board

Staff

- CJ Holt, SDOT project management
- Louisa Galassini, SDOT project management
- Sara Colling, SDOT outreach
- Susan Bartlett, Parsons
- Mike Hendrix, Perteet

Summary

Statement of Legislative Intent

After brief introductions, the group discussed the Statement of Legislative Intent that SDOT will submit to City Council by March 31, 2017.

Comments from group:

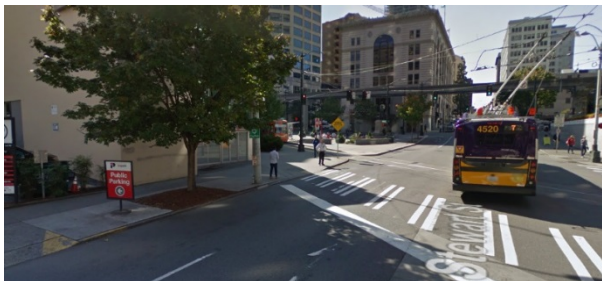
- The group will want to see the best practices content as well as the progress on the 1st and Jackson intersection.
- It's important this group continues to meet to discuss the existing streetcar lines
- Attendees asked who will coordinate future meetings and what is timeline
 - SDOT's Transit and Mobility division will take lead on future meetings and will follow up

Streetcar-bike focus areas

The group then discussed the refined designs for the Streetcar-bike focus areas.

Stewart/Westlake/6th Ave

Based on input from the previous meeting, the refined design includes a buffered and/or protected bike queuing space as well as a nearside bike signal head.



- Comments from group:
 - Supportive of bike only signal phase
 - Add green paint in front of the driveway on Stewart St between 6th and Westlake Ave so vehicles exiting the driveway know to watch for bikes
 - Add pavement markings at Stewart and 6th to direct bicyclists into bike queuing space so they know to separate themselves from general purpose traffic
 - Add wayfinding signage at Stewart and 7th intersection directing people to protected bike lanes on 7th Ave
- Next steps:
 - Design team will move forward with refined design and consider comments listed above

1st and Stewart

Based on input from the previous meeting, the design team considered a bike only or all-way phase at 1st and Stewart but found the intersection doesn't meet the volumes to merit slowing down streetcar operations.



- Comments from group:
 - Add clear signage so people biking know to merge onto sidewalk before Stewart
 - Add clear signage so people driving know bicyclists will be merging back into traffic on 1st Ave
 - Potentially restrict parking space on northeast corner of 1st and Stewart to help bikes merge back into general purpose lane on 1st Ave
 - Potentially add skip striping to direct cars to correct general purpose lane
 - Check on angle for bikes who ride straight through without using sidewalk
 - Consider brighter pavement marking to guide bikes across tracks
- Next steps:
 - Design team will move forward with refined design and consider comments listed above

1st and Jackson

Elements of the previous top “split station” alternative presented challenges after further study including:

- It's unclear whether bikes and cars would abide by the stop bar location because it's further back than typical and they would therefore block the streetcar from making right turns
- The vehicle queue may back up on Jackson which would block pedestrian access to the streetcar station.
- Vehicles sharing the streetcar lane would slow overall streetcar operations



In response to these challenges, the design team developed a new alternative that would narrow the streetcar station and travel lanes slightly to keep a dedicated streetcar lane and allow space for a 4-foot eastbound bike lane (see Appendix A for draft layout). Features of the new design include:

- Maintains center station rather than splitting the station into 2 side stations
- Westbound streetcars would keep dedicated lane
- People biking westbound would share general purpose lane (like today)

The design team noted they looked at an option to extend the center station in length but this wouldn't allow space for the streetcar to run right onto 1st. The design team also noted an option to add another station just east of Occidental, but it would include substantial additional cost and outreach so it's not SDOT's preferred option.

- Comments from group:

- 4 feet is narrow for an in-street minor separation bike lane; the bike lane needs to be wider and/or protected for Cascade Bicycle Club's support
 - Concern that vehicles would veer into bike lane if bike lane isn't protected
 - Bicyclists won't have space to pass with 4-foot lane
 - The track crossing at 1st and Jackson needs to be considered for bikes turning right or staying straight on first – potentially add a “bikes use full lane” sign so bikes have space for a perpendicular crossing
 - Adding another station at 1st and Occidental may be preferred because it allows more queuing space for pedestrians
- Next steps:
 - Design team will review new design and vet across City departments considering the comments above
 - SDOT will report back to bike group before this design is included in Statement of Legislative Intent

1st Ave

SDOT showed cross sections and renderings for what 1st Ave will look like (see rendering). Bikes will share the general purpose lane with vehicles and there will be clear delineation between the streetcar lane and general purpose lane. “Bike boxes” on 1st Ave side streets will be considered as well for bikes to queue and cross the tracks at a 90-degree angle.



- Comments from group:
 - Consider slowing general purpose lane speed to 20 mph

Next steps

- SDOT will send meeting notes to group
- Design team will refine the design for each intersection with the input from this meeting
- SDOT will follow up with bike group on 1st and Jackson design before submitting Statement of Legislative Intent
- SDOT will submit Statement of Legislative Intent to City Council by March 31

Appendix B: Map showing streetcar alignment overlaid with existing and planned bike improvements

