



Technical Advisory Committee

Meeting 1

6/20/2017

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| <p>Introductions</p> <p>Kathy Leotta, Sound Transit Maan Sidhu, WSDOT Mike Galizio, WSDOT Kris Overleese, City of Kenmore Public Works Dongho Chang, City of Seattle James Gwilliam, Merlone Geier (Owner of Town Center) Kendra Dedinsky, City of Shoreline Pete Rose, City of Lake Forest Park Neil Jensen, City of Lake Forest Park Kendra Breiland, Fehr & Peers Carmen Kwan, Fehr & Peers Marcia Wagoner, 3 Square Blocks Anna Snyder Kelly, 3 Square Blocks</p> | <p>All</p> |
| <p>Opening Remarks</p> <p>City's top priorities:</p> <ul style="list-style-type: none"> • Get people to light rail without a single occupancy vehicle. • Get people to the potential park & ride lot on SR 522. • Provide pedestrian access along SR 522. • Get ahead of and plan for the transportation funding that is coming to Lake Forest Park. | <p>Pete Rose</p> |
| <p>Project Overview (see attached PowerPoint)</p> <ul style="list-style-type: none"> • Goals: Complete & multi-modal connections, Supported by the community, Realistic and implementable. • Engineering considerations for SR 104 and SR 522 include ROW constraints, sight distance issues, skewed intersections, maintenance, etc. • Identify non-motorized access to transit projects on local streets. • Need solutions for traffic congestion. Traffic 10% increase on local roads from toll avoidance. • Outcomes: Separate corridor plans with preferred cross sections, SR 522 / SR 523 intersection concept, and study intersection layouts along SR 104. Also identification of key non-motorized access to transit opportunities. | <p>Kendra Breiland Carmen Kwan</p> |



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| <ul style="list-style-type: none"> Stakeholder interviews over the next 6 weeks to identify various interests and corridor challenges/opportunities. | |
| <p>Role of Technical Advisory Committee (TAC) Provide guidance and technical review of concepts and options developed by the consultant team.</p> <p>TAC Member Interests:</p> <p><u>Kendra Dedinsky, Shoreline</u></p> <ul style="list-style-type: none"> Move people to access transit, especially future light rail stations. Address cut through traffic concerns. 523/522 - ROW constrained. Pedestrian facilities important. Multiple ownerships on 145th adds complications. Refer to Shoreline 145th Corridor plan. Documents are online. <p><u>Dongho Chang, Seattle</u></p> <ul style="list-style-type: none"> SR 522 / 523 area does not have great pedestrian connectivity; ped crossings are unpleasant. Need to consider mobility needs of sensitive populations and local residents along with serving regional mobility needs. <ul style="list-style-type: none"> Consider speaking to Lighthouse for the Blind organization. Most important mode= people (walking), most efficient mode= transit. Signal design and ITS are likely best opportunities to optimize complex transit/general purpose traffic operations. <p><u>Mike Galizio, WSDOT - Transportation Planner</u></p> <ul style="list-style-type: none"> PSRC Transportation 2040 includes an unfunded project on Ballenger Way (SR 104 between SR 522 and 178th). The project is currently undefined with a generic project description. This study could help define the project. Burke-Gilman trail is busy with people waiting in crowds to access it by crossing SR 522. Consider over or under crossing? The title "Safe Highways" makes this sound like just a safety study. Consider project name or tagline that reflects a multi-modal corridor plan to avoid confusion and make this project more competitive for funding. <p><u>Jamas Gwilliam, Merlone Geier / Town Center</u></p> <ul style="list-style-type: none"> Feels that people use town center parking lot as a park & ride already. Interested in how future transit service can reinvigorate the Town Center. Wants a potential park & ride in Town Center to be sized appropriately with forecasted BRT ridership in mind. | <p>Marcia Wagoner, all</p> |



- Potentially explore alternative last-mile options to avoid drive alone such as local shuttle system. Explore KCM Community Connections pilot studies.
- Are there other motorized last-mile options available?

Kris Overleese, Kenmore

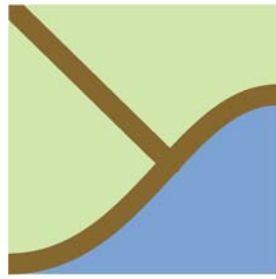
- Transit speed and reliability along the corridor and accessing light rail is the primary concern of Kenmore.
- Concerned about safety improvements (ped/bike, autos). Need to balance ped/bike safety while adding BAT lanes.
- Completing the BAT lanes in Kenmore resulted in large decrease in collisions on corridor.
- Kenmore has two potential locations for ST3 park & ride lots – expand existing lot at 73rd or at Lakepoint where a major redevelopment is planned.
- Some access to transit options with KCM is vanpool to park & ride. Piloting a school pool program as well.

Kathy Leotta, Sound Transit

- Impressed with how Northshore communities came together for ST3, this study will be helpful and informative for ST 522 BRT study starting early 2018. BRT should begin service in 2024.
- Tough to complete BAT lanes due to topography. Interested to hear preferred concept and layout from community.
- ST3 will add 3 parking garages along 522 corridor. Exact locations and BRT stations have not been finalized.
- There are some ST3 funds for non-motorized safe access to station projects.
- This project is a part of the ST3's larger BRT program, which will include I-405 BRT. BRT program includes common elements: branding, vehicle procurement, maintenance base, and a connection in Bothell.

Maan Sidhu, WSDOT

- There are a number of opportunities to benefit from low cost improvements, including signal timing, which could be implemented relatively quickly.
- WSDOT welcomes prioritized concepts for SR 104.
- Tolling has not changed travel patterns permanently: people return to tolled roads because it provides travel time & reliability.
- WSDOT encourages the holistic/multimodal approach to planning. A new active transportation division began.



Lake Forest Park

SAFE HIGHWAYS

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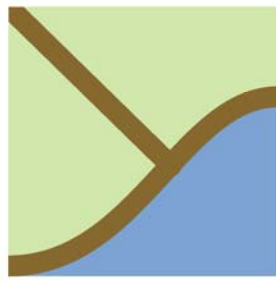
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| <p><u>King County Metro (not present but provided information during interview)</u></p> <ul style="list-style-type: none">• Support completion of BAT lanes for transit speed and reliability.• SR 522/ SR 523 is a very complicated intersection. Regional travel and transit travel north/south and east/west to LRT station heavily influenced by operations here.• Concerned about safety – for transit operations and ped/bike connections to transit stops. | |
| <p>Guiding Principles/notes</p> <p>Draft project guiding principles have been developed. Draft was sent out to committee. These will help prioritize potential improvements developed throughout project.</p> <ul style="list-style-type: none">• One comment is Safety & Mobility are interrelated. Consider including this in project title/language. | Kendra Breiland |
| <p>Next Steps</p> <ul style="list-style-type: none">• Meeting information will be sent out one week prior to each TAC meeting.• Next two TAC meetings (early and mid-September) will focus on one corridor.• Another two TAC meetings (mid and late October) will focus on the other corridor.• A final wrap-up TAC meeting will occur in early December. | Kendra Breiland |



Technical Advisory Committee

Meeting 2
9/20/2017

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| <p>Introductions</p> <p><i>TAC Members:</i> Thomas Noyes, WSDOT John Vicente, City of Kenmore Jesse Birchman, City of Mountlake Terrace James Gwilliam, Merlone Geier Kendra Dedinsky, City of Shoreline Luka Ukrainczyk, KC Metro Kathy Leotta, Sound Transit</p> | <p><i>City Staff & Consulting Team:</i> Pete Rose, City of Lake Forest Park Neil Jensen, City of Lake Forest Park Kendra Breiland, Fehr & Peers Carmen Kwan, Fehr & Peers Don Samdahl, Fehr & Peers Kurt Ahrensfield, Perteet Marcia Wagoner, 3 Square Blocks Rebecca Fornaby, 3 Square Blocks</p> | <p>All</p> |
| <p>Project background (see attached PowerPoint)</p> <ul style="list-style-type: none"> • Goal: Corridor plans for SR 104 and SR 522 • Interview findings and Planning Context Report have both been shared with TAC members and are available on project website • Public Open Houses will be held on 10/18 (SR 104) and 11/14 (SR 522) • Focus of today's meeting is gathering feedback on SR 104 cross-section options; focus of next meeting on 10/4 will be on SR 104 intersection options | | <p>Kendra Breiland</p> |
| <p>Background on SR 104 (see attached PowerPoint)</p> <ul style="list-style-type: none"> • Link between many communities • Generally a winding, tree-lined corridor with one lane in each direction • Highest traffic volume, congestion, and collisions are near SR 522 • Route is surrounded primarily by single family homes with some retail, and zoning is not expected to change • Single family homes have direct driveway access on SR 104; shoulder of SR 104 is used for garbage collection, mail delivery, and other similar uses • Pedestrian amenities are extremely limited along parts of SR 104; some transit stops only have a paved shoulder • Most transit boardings are at Town Center | | <p>Carmen Kwan</p> |

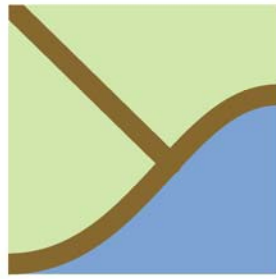


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| <p>Option 1: Buffered bike lanes with sidewalks</p> <ul style="list-style-type: none"> • Need to know which type of cyclists we want to serve; informs the type of facility proposed, i.e. recreational or commuter cyclist. • Consider cyclists' access to Town Center, Burke-Gilman Trail, and regional connectivity (Mountlake Terrace Transit Center, Interurban Trail, etc.) • Maybe bicycle lanes connect with Mountlake Terrace to the north rather than Shoreline? • Lack of two-way left turn lane could affect transit operations and access to single family homes • Width of roadway could present safety issues for cyclists around blind turns when cars may try to pass stopped busses • Transit will need to cross into bike lane at bus stops • 11-foot lane may not be sufficient when driving around curves • Balance needs as bike lanes increase crossing distance for pedestrians, increases pedestrian exposure to vehicle conflicts, and lowers signal efficiency • Should a lower speed limit be implemented? • Consider latent demand for bike lanes • Funding will make it difficult to construct bicycle facilities all at once • Consider off-corridor cycling routes and elevation challenges, i.e. today use Perkins to Lago • Consider applying hybrid of options along the corridor • Possible resources <ul style="list-style-type: none"> ○ Barb Chamberlain at WSDOT Active Transportation Department ○ Kimberly Scribner, PSRC Bike Regional Plan Update ○ Funding through Complete Streets (use collision data when applying for funding) ○ Statewide bike counts <p>Option 2: Higher quality sidewalks with landscaped buffers</p> <ul style="list-style-type: none"> • KC Metro supports two-way left turn lane; in-lane stops are preferred • This could be a candidate for an HOV/bus-only lane—southbound SR 104 to northbound SR 522 (331, 342) • Shoreline coordinating with WSDOT to lower SR 104 speed limit in Shoreline <p>Option 3: Multi-use trail on one side</p> <ul style="list-style-type: none"> • 40th to 178th—access management, i.e. what's the re-route when the left turn lane is removed? What are the U-turn opportunities? • Design for all ages and abilities, especially near Town Center • On SR 522, 10-foot lanes may not be adequate | <p>Carmen Kwan & Marcia Wagoner</p> |
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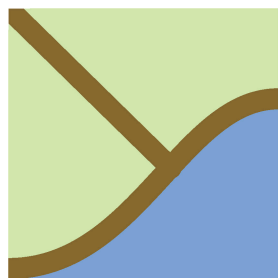


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| <ul style="list-style-type: none"> • Multiuse trail <ul style="list-style-type: none"> ○ Conflict at driveways ○ Better cyclist visibility in bike lanes than on multi-use trail. Need to balance visibility with landscape buffers. ○ Can use pavement treatments to push cyclists onto more visible side of trail • Support for multiuse trail near Town Center and elementary school • Consider utilities relocation • Community has strong environmental values. Anticipates community support of a little more widening if it will provide better stormwater treatment systems • In locations with limited right-of-way, consider removing landscape buffer. Especially if the more attractive trail is on the other side of road. • Will this plan create new crossings? If so, crossings should be near transit stops • Establish hierarchy of needs • Crossing treatments should allow people to get to the wider more attractive multi-use trail facility • WSDOT would support a hybrid between options 2 and 3; access management is a key consideration • Possible resources <ul style="list-style-type: none"> ○ Martin Dedinsky, WSDOT Signal Operations Engineer ○ Shoreline-King County presentation on stormwater treatments <p>Miscellaneous Q&A</p> <ul style="list-style-type: none"> • What does “high quality sidewalks” mean? What’s the difference between 1 and 3? <i>Only pedestrians are being served, not cyclists.</i> • What’s “lesser” about sidewalks not called “high quality”? <i>It’s not “lesser,” it’s just a sidewalk-only option. Option is re-titled to “Complete Sidewalks.”</i> • What’s the most constrained right of way along the corridor? <i>From 35th Ave to just north of Town Center area, where it’s 60 feet.</i> | |
| <p>Next Steps</p> <ul style="list-style-type: none"> • Next TAC on 10/4 • Public workshop on 10/18 | <p>Kendra Breiland</p> |



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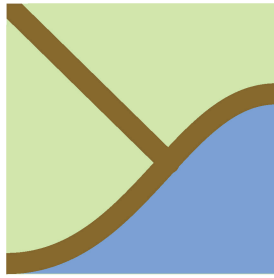
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Technical Advisory Committee

Meeting 3
10/3/2017

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| Introductions TAC Members Maan Sidhu, WSDOT Thomas Noyes, WSDOT Jesse Birchman, City of Mountlake Terrace Tod McBryan, Merlone Geier Kendra Dedinsky, City of Shoreline Luka Ukrainczyk, KC Metro Kathy Leotta, Sound Transit Martin Dedinsky, WSDOT Staff Pete Rose, City of Lake Forest Park Neil Jensen, City of Lake Forest Park Kendra Breiland, Fehr & Peers Carmen Kwan, Fehr & Peers Marcia Wagoner, 3 Square Blocks Rebecca Fornaby, 3 Square Blocks Amanda Ruksznis, Perteet Kurt Ahrensfield, Perteet | All |
| Meeting 2 Recap <ul style="list-style-type: none">Review of SR 104 guiding principles generated based on discussions with staff, TAC, and LFP City CouncilReview of SR 104 cross-section options. What we heard:<ul style="list-style-type: none">Buffered Bicycle Lanes not desirable for KCM operations. Vehicles attempting to pull around a stopped bus is a concern from transit operations perspective.Interest in hybrid of option 2 (complete sidewalks) and 3 (multi-use trail)Support for multiuse trail adjacent to Town Center segmentCommittee of the Whole (COW) was generally supportive, but looking to provide a cohesive bicycle network—would have to be mindful of this goal if implementing a hybrid of options 2 and 3 | Kendra Breiland |
| Intersection Options SR 104 & NE 195th Street <ul style="list-style-type: none">Signal option<ul style="list-style-type: none">Buildable option for near term | Amanda Ruksznis |

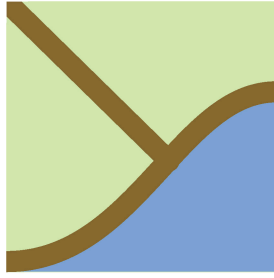


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| <ul style="list-style-type: none"> ○ Has potential to make intersection a little smaller by moving up stop bars. ○ WSDOT has planned improvements for this intersection—flashing yellows • Roundabout option <ul style="list-style-type: none"> ○ Walls will be expensive—if affordable, roundabout is preferable from an operations & maintenance perspective ○ Metro needs to see that this roundabout option will work well with bikes and busses ○ Additional pedestrian crossing safety needed ○ Few access impacts, but spatially a large roundabout. ○ WSDOT has resources for compact roundabouts that can be shared, however there are limitations to compact roundabouts ○ With a steady stream of traffic northbound on SR 104, will other legs experience long delays? ○ Driving speeds are a concern ○ Funding is a concern • Other comments <ul style="list-style-type: none"> ○ This intersection could serve as a gateway to the City • Summary <ul style="list-style-type: none"> ○ Both treatments are still being considered ○ Project Team will refine and make both designs more compact for presentation to public <p>SR 104 & 35th Ave NE</p> <ul style="list-style-type: none"> • Signal option <ul style="list-style-type: none"> ○ Lots of support for eliminating the cul-de-sac concept (in original draft) and replacing it with a SB right turn only lane ○ Channelized right has a large turning radius, should be tightened or made safer via other means ○ “Square it up” to avoid diagonal pedestrian crossings ○ Opportunity for planting, public space, art, etc. ○ Note bus stop where right turn is removed—if moved, preference is for the southeast corner • Roundabout option <ul style="list-style-type: none"> ○ Parking for Lake Forest Park Market is almost completely | |
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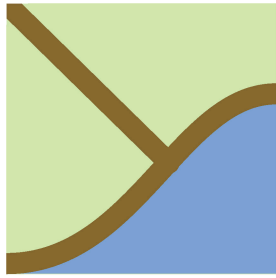
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compromised—will that constitute a total take? There are some examples in Woodinville on SR 202 of how to use rolled curb to create parking in similar situations

- Is there a way to eliminate a leg?
- Explore compact roundabout option to narrow scope, cost, and impacts to business access—particularly if this intersection has lower approach speeds
- Lifetime cost of roundabout is shorter—lower maintenance cost
- Summary
 - Reduce footprint for both concepts
 - Consider four-legged roundabout
 - Consider removing cul-de-sac

SR 104 & 40th PI NE

- Non-roundabout option
 - Metro would like to see a pedestrian crossing here due to distance from other signalized intersections; however, given the bend in the roadway sight distance could be a concern under this option.
 - Q: How many people actually use 184th? Could 184th tie into 40th PI NE (would require a take)
- Roundabout option
 - Q: What is the likelihood that drivers on eastbound SR 104 will fail to yield? Adding consecutive roundabouts through the corridor at other study intersections would help with driver familiarity with rules in roundabouts.
 - Q: Could roundabout be realigned to improve navigation? A: Due to property impacts, signage would probably be best solution
 - Would overhead signage work at a roundabout?
 - This is preferred from perspective of speed control
 - TIB would like City to apply for funding for roundabout at this intersection
- Other comments
 - Q: How do bikes use intersections? A: Either claim the lane or take the sidewalk; we don't want bikes riding next to cars
- Summary



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| <ul style="list-style-type: none">○ Preference for roundabout with reservations regarding bikes and yielding behavior○ Need for enhanced crossing if adding a new pedestrian crossing across SR 104. <p>SR 104 & NE 178th St</p> <ul style="list-style-type: none">• Signal option<ul style="list-style-type: none">○ Q: Northbound left turn to have protection? A: Yes, protected left○ No benefit to third crosswalk—if northerly crosswalk is removed, could then move island south to tighten intersection○ Add a lane on north side of intersection in SB direction for a bus queue jump• Other comments<ul style="list-style-type: none">○ WSDOT/ICA will want to see documentation of evaluation of single lane roundabout options• Summary<ul style="list-style-type: none">○ Be transparent about process○ Queue jump○ Potentially remove a crosswalk. Need to identify if the north of south would be better with signal phasing. | |
| <p>Next Steps</p> <ul style="list-style-type: none">• Open House on 10/18—focus on SR 104• COW on 10/23—share what we hear about SR 104 and where we’re headed with 522• TAC 5 on 11/1 will focus on SR 522 – calendar invite coming | <p>Kendra Breiland</p> |

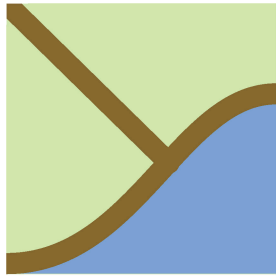


Meeting 4
10/17/2017

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| Introductions | | All |
| TAC Members Thomas Noyes, WSDOT Jesse Birchman, City of Mountlake Terrace Tod McBryan, Merlone Geier Kendra Dedinsky, City of Shoreline Luka Ukrainczyk, KC Metro Kathy Leotta, Sound Transit Martin Dedinsky, WSDOT Dongho Chang, City of Seattle John Vicente, City of Kenmore | Staff Pete Rose, City of Lake Forest Park Neil Jensen, City of Lake Forest Park Kendra Breiland, Fehr & Peers Chris Grgich, Fehr & Peers Carmen Kwan, Fehr & Peers Marcia Wagoner, 3 Square Blocks Rebecca Fornaby, 3 Square Blocks Kurt Ahrensfeld, Perteet | |
| SR 522 Guiding Principles <ul style="list-style-type: none"> • <i>See presentation</i> | | Kendra Breiland |
| SR 522 Today <ul style="list-style-type: none"> • Wide corridor • Important to region as it carries 20% of all cross-Lake Washington traffic • BAT lane is completed in one direction throughout the corridor • Corridor has two-way center turn lanes and left-turn pockets • Carries 50,000 vehicles a day • Driveways and garbage collection adjacent to shoulder of corridor • Steep residential driveways immediately adjacent to corridor • Sidewalks and planted medians along portions of the corridor • Three signalized intersections • City interested in putting power lines that run along corridor underground • Express transit access runs through corridor | | Carmen Kwan |
| ST3 Project(s) <ul style="list-style-type: none"> • Complete BAT lanes throughout SR 522 • Start a bus rapid transit route, scheduled to open in 2024 • ST is in the process of developing partnerships | | Kathy Leotta |



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| <ul style="list-style-type: none"> Challenging section because of topography | |
| <p>King County Metro Projects</p> <ul style="list-style-type: none"> Future RapidRide line in 2025 Plan will connect to future U District light rail station Will use BAT lanes, and will likely use ST BRT stops. | <p>Luka Ukrainczyk</p> |
| <p>Right-of-Way</p> <ul style="list-style-type: none"> Two options: 1) Center turn lane that goes throughout the entire corridor that preserves access to residential units, or 2) limit where left turns can be made These options apply depending on corridor section because of ROW constraints. Generally we assume complete BAT lanes and sidewalks throughout the entire corridor | <p>Carmen Kwan</p> |
| <p>Cross-Section Options</p> <p><i>Option 1:</i> Provide continuous center turn lane to maintain left turn access through the corridor. Options 1A and 1B differ in the level of sidewalk buffering provided in recognition of right-of-way constraints throughout the corridor.</p> <ul style="list-style-type: none"> Option 1A: Center turn lane + 6' sidewalks with 4' landscape buffer (96' wide). Option 1B: Center turn lane + 6' sidewalk with narrower 2' buffer (92' wide). <p><i>Option 2:</i> The center turn lane would be removed and turn movements would be limited to select locations. Throughout the corridor, driveway access may be revised to right-in, right-out only. This means that u-turn opportunities need to be provided.</p> <ul style="list-style-type: none"> Option 2A: 8' planted median + 6' sidewalks with 4' planted buffer (92' wide) Option 2B: No median treatment provided, but includes 6' sidewalk with 4' planted buffer (84' wide) Option 2C: No median treatment, but provides 6' sidewalks with 2' buffer (80' wide) | <p>Chris Grgich</p> |
| <p>Discussion of Cross-Section Options</p> <ul style="list-style-type: none"> Segment 1 (near 145th Street) <ul style="list-style-type: none"> High turn volumes because of retail and multifamily homes Support for keeping existing access management near 145th; if the goal is safety, reversing the access management might be counterintuitive to the safety goals of the project Sound Transit unlikely to undo any access control from WSDOT | |

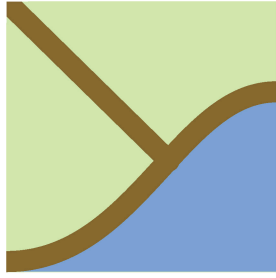


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- U-turn bays should be strategically placed outside expected queue lengths at signals
- Consider 11-foot travel lanes because of roadway curves, 10-foot lanes ok near the more dense Town Center
- Consider needs of delivery trucks, particularly where there is commercial activity
- Consider reducing planted median where the ROW is constrained. Median typically at least 4' wide to provide space for roadway signs.
- Consider setback requirements as buildings turn over and redevelop from 145th – 155th
- Segment 2 (153rd to the north)
 - Keep transit stop at 153rd
 - Support for sidewalks along both sides of corridor. Under limited ROW conditions, consider wider sidewalks on the west side, as transit ridership to downtown Seattle more likely than to the east side.
 - What's the target speed? Lane widths can be narrower if speeds are lower
 - Consider alternative ways to maintain access management and corridor character. Consider targeted opportunities for non-peak hour parking in BAT lane.
 - Consider future zoning when locating transit stops. Metro may consider transit stop consolidation.
 - Consider opportunities for new midblock crossings near future transit stops
 - Consider asking the community where they would like to see transit stops
 - TIB grants require minimum 4' planter strips.
 - Consider space needed for underground utility vaults—typically need a 10-foot cross section. This aligns with 6' sidewalk + 4' landscaping.
 - Consider improving community's ability to interact with both sides of the road—special attention to crossings
 - Consider narrowing the cross-section to provide BAT lane in one direction only in narrowest section – aided by queue jumps
 - Consolidate access points
 - Align midblock crossings with transit stops
 - Consider using center lane for transit (see Seattle project at Dearborn

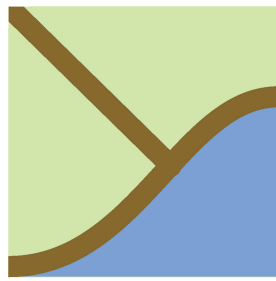


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| and Rainier) | |
| Next Steps <ul style="list-style-type: none">• Next TAC meeting will be held on 11/1• Next Open House will be held on 11/14 | Kendra Breiland |



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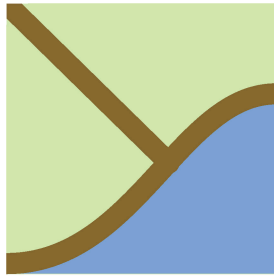
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Technical Advisory Committee

Meeting 5
11/1/2017

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| Introductions TAC Members Thomas Noyes, WSDOT Tod McBryan, Heffron Transportation (Transportation engineer for Merlone Geier) Kendra Dedinsky, City of Shoreline Luka Ukrainczyk, KC Metro Lacy Jane Wolfe, KC Metro Kathy Leotta, Sound Transit Maan Sidhu, WSDOT Staff Pete Rose, City of Lake Forest Park Neil Jensen, City of Lake Forest Park Kendra Breiland, Fehr & Peers Chris Grgich, Fehr & Peers Carmen Kwan, Fehr & Peers Marcia Wagoner, 3 Square Blocks Rebecca Fornaby, 3 Square Blocks Kurt Ahrensfield, Perteet | All |
| Recap of TAC 4 – What We Heard & Further Thoughts on Access Control on SR 522 Corridor (including potential new signals) <ul style="list-style-type: none">• Highlights from TAC meeting 4<ul style="list-style-type: none">○ Maintain and enhance access control throughout the corridor○ Consider inclusion of medians wherever possible○ Ensure sidewalk and amenity zone is a minimum of 10 feet○ Consider lane widths (10 or 11 feet)○ Evaluate if BAT lane is necessary in narrow section between 160th and 153rd in favor of pedestrian amenities and ROW preservation• Group discussion<ul style="list-style-type: none">○ Brookside and SR 522 intersection: Maintain left-in access○ 39th Ave NE<ul style="list-style-type: none">▪ Consultant Team to provide City list of locations currently | Kendra Breiland & Chris Grgich |

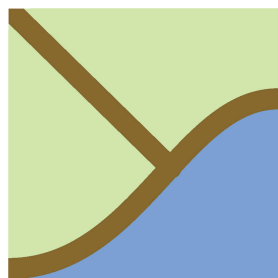


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| <ul style="list-style-type: none"> using HAWK beacons <ul style="list-style-type: none"> ▪ Consider motorist education about HAWK to avoid confusion ▪ Move forward with signal and HAWK option ○ “Narrow section” <ul style="list-style-type: none"> ▪ If BAT lane were removed, start with a queue jump at bus stop ▪ Keeping BAT lane would be ideal ▪ Keep in mind that inbound trips (to Seattle) are probably more time-sensitive than outbound trips for commuters ▪ Consider number of busses per hour | |
| <p>Group discussion of 145th intersection</p> <ul style="list-style-type: none"> • Northbound bus stop needs to be moved north, away from the intersection • Is 60' x 15' feet wide enough for two busses? • Does the east leg of 145th need three lanes? Fewer lanes could return ROW to Taco Time • Consider adding bulb-outs to curb at northeast corner—challenging because of u-turns on SR 522 at 145th southbound • Locating inbound bus stop on the 145th side could benefit transit with an in-lane stop • As an alternative, consider keeping existing plan and current KC Metro stop, as bus volumes would be lower • What is the optimal solution for traffic operations? ROW needed? Dual right turn lanes? | Chris Grgich |
| <p>Group discussion of potential non-motorized access to transit improvements</p> <ul style="list-style-type: none"> • Overview <ul style="list-style-type: none"> ○ Enhance access to SR 522 transit stops from the neighborhood ○ Assumed that non-motorized improvements are made along the SR 522 corridor ○ 11 draft projects developed (below) • Project 1: Multi-use path along SR 104 (west side only) <ul style="list-style-type: none"> ○ This item was not discussed at length, as it was already a part of the SR 104 cross-section options and discussed in TAC 2 and 3. • Project 2: Town Center pedestrian connections <ul style="list-style-type: none"> ○ Area near Starbucks is hard to navigate ○ How can wayfinding be standardized and streamlined? Look at Seattle’s wayfinding standardization study • Project 3a: SR 522/SR 104 Crossing improvements <ul style="list-style-type: none"> ○ In the near term, consider revising slip lane to improve pedestrian conditions | Carmen Kwan |

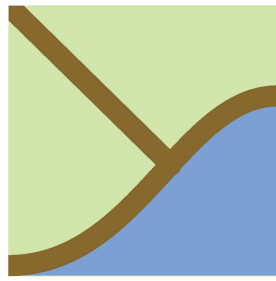


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| <ul style="list-style-type: none"> • Project 3b: SR 522/SR 104 Crossing improvements <ul style="list-style-type: none"> ◦ Consider utility clean up as a part of the grade-separated crossing project • Project 4: SR 522/NE 170th St crossing improvements <ul style="list-style-type: none"> ◦ In future, consider undercrossing for Burke Gilman Trail • Project 5: Brookside Elementary Safe Routes to School <ul style="list-style-type: none"> ◦ No comments • Project 6: 37th Avenue NE traffic calming <ul style="list-style-type: none"> ◦ More data needed to ensure that traffic calming is needed (speed and/or safety data) • Project 7: Briarcrest Safe Routes to School sidewalks <ul style="list-style-type: none"> ◦ Partner with Shoreline • Project 8: Briarcrest Safe Routes to School walking paths <ul style="list-style-type: none"> ◦ Coordinate with Chief Sutton to confirm actual speeds • Project 9: NE 155th Street trail connection <ul style="list-style-type: none"> ◦ No comments • Project 10: Burke-Gilman Trail wayfinding <ul style="list-style-type: none"> ◦ Consistent wayfinding since this is a regional trail ◦ Consider stairs as way to enhance pedestrian experience (look at Seattle's successful neighborhood stairways) • Project 11: Improve street connectivity <ul style="list-style-type: none"> ◦ Map unopened right of way—City has done some preliminary work ◦ Reduce walking distance to Town Center by completing walkways ◦ Look to the language in Shoreline's code, which requires pedestrian cut-throughs with new multifamily development | |
| <p>Next Steps</p> <ul style="list-style-type: none"> • Second Open House will be held on 11/14 and be focused on SR 522 • Third Open House will be held on 12/4 and be focused on demonstrating how community feedback has been incorporated into options for both SR 104 and SR 522 • Next TAC meeting will be held on 12/12 | <p>Kendra Breiland</p> |



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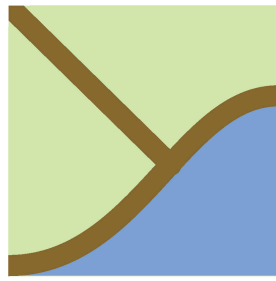
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Technical Advisory Committee

Meeting 6
12/12/2017

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| Introductions TAC Members Tod McBryan, Heffron Transportation (Transportation engineer for Merlone Geier) Kendra Dedinsky, City of Shoreline Maan Sidhu, WSDOT Kathy Leotta, Sound Transit Thomas Noyes, WSDOT Luka Ukrainczyk, KC Metro Dongho Chang, SDOT Staff Kurt Ahrensfield, Perteet Kendra Breiland, Fehr and Peers Rebecca Fornaby, 3 Square Blocks Neil Jensen, City of Lake Forest Park Carmen Kwan, Fehr and Peers | All |
| SR 104 Cross-sections <i>Fehr and Peers provided an overview of community feedback and the resulting recommendations for cross-section concepts for SR 104.</i> Option 1: Buffered bike lanes and sidewalks (PREFERRED) <ul style="list-style-type: none">• From KC Metro's perspective, buffered bike lanes were not originally preferred• Given strong community support for separated, buffered bike lanes, Fehr and Peers worked with KC Metro to develop two transit stop concepts that could be implemented alongside buffered bike lanes will accommodating safe transit operations.• Pros: Reduces conflicts between bicyclists and transit; keeps transit vehicles in-lane, which prevent cars from passing buses while stopped (an unsafe condition).• Cons: Stops would be more costly than transitional stops (since they are more capital intensive). Potentially reduces flexibility of moving bus stop | Kendra Breiland |

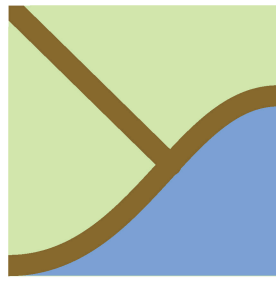


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| <p>locations.</p> <ul style="list-style-type: none"> • Q: What kind of signage will be needed? A: Possibly a sign for cyclists to yield to pedestrians. • Q: Do people wait for bus on the raised portion? A: Only when boarding the bus, so the only cyclist-pedestrian conflict is when people are getting on/off a stopped bus • Q: Are you going to show photos to Council? If so, the Children's Hospital campus or Roosevelt might be a good example. <p>Option 2: Complete sidewalks with amenity strip throughout the corridor (not preferred)</p> <p>Option 3: Multiuse trail (not preferred)</p> <p>Option 4: Hybrid with shared use trails in parts, just sidewalks in parts (not preferred)</p> | |
| <p>Community feedback on 104 Intersection Concepts</p> <p><i>Fehr and Peers provided an overview of community feedback and the resulting recommendations for intersection concepts for SR 104.</i></p> <p>SR 104 / 195th</p> <ul style="list-style-type: none"> • Signalized (PREFERRED) • Roundabout (not preferred): The community had strong reservations about the shape and size of the roundabout and how those would negatively affect the pedestrian environment. <p>SR 104 / 35th</p> <ul style="list-style-type: none"> • Signalized (PREFERRED) • Roundabout option (not preferred): The community was concerned about the right-of-way that would need to be acquired. There was also concern about the pedestrian environment/walking distances, especially given the proximity of a school. The Consultant Team explored the option of removing the 185th leg of the roundabout, but that would require the acquisition of additional property. <p>SR 104 / 40th PI</p> <ul style="list-style-type: none"> • Roundabout option (PREFERRED): There was a great deal of community support for this treatment, though there was some concern about drivers' yielding behavior and the need for signage. | |

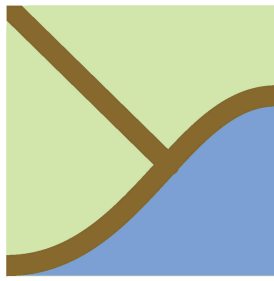


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| <ul style="list-style-type: none"> ○ Q: Eastbound movement may not be conducive to yielding. A: Perteet/Fehr and Peers will assess this. • Re-channelization/non-roundabout option (not preferred) <p>SR 104 / 178th</p> <ul style="list-style-type: none"> • Signalized with Bus Queue Jump <ul style="list-style-type: none"> ○ Graphic will be updated with longer southbound left turn pocket. ○ This treatment is characterized by adding a right-turn lane onto 178th with a bus queue jump ○ The community was appreciative of need to accommodate transit ○ Q: How long are southbound right turn queues? The bus queue jump is not useful if queues blocks right-turn lane. This would increase crossing distances and decrease signal efficiency. • Signalized without Bus Queue Jump <ul style="list-style-type: none"> ○ Graphic will be updated with longer southbound left turn pocket. • Q: Will the roundabout options be included in the report? While a multilane roundabout wouldn't work, a three-legged roundabout should be considered: it may not increase service during peak hours, but could increase safety throughout the day. Roundabouts are getting favored over signals for grant money because of safety reasons. A: Biggest concern is that roundabout could overflow into adjacent signals. We will show roundabout as a considered option in the report. The appendix will detail justification for why the roundabout was not preferred. | |
| <p>SR 522 Cross-section Concepts</p> <p><i>Fehr and Peers provided an overview of community feedback and the resulting recommendations for cross-section concepts for SR 522.</i></p> <p>Concept 1: Characterized by a 10-foot sidewalk and amenity zone on both sides of the street, completed BAT lane and two general purpose travel lanes in each direction, and a turn lane in the middle</p> <p>Concept 2: Same as Concept 1 but with an 8-foot median in place of a turn lane</p> <p>Concept 3: Characterized by a narrow (4 to 6foot) median. This option uses less right-of-way to allow for other potential elements such as green space, sound mitigation, and retaining walls</p> <ul style="list-style-type: none"> • Comment: Sound Transit's project currently does not anticipate noise mitigation, but it may include retaining walls. Sound Transit will be looking at | <p>Kendra Breiland</p> |



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alternative fleet vehicles that may be quieter. Sound Transit would conduct a noise analysis. For sound mitigation to be considered it would need to be determined that noise impacts are identified due to the BRT project. Sound Transit doesn't want residents supporting the project based on assumptions that ST will provide noise mitigation.

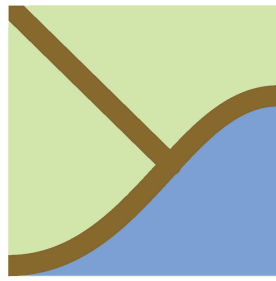
- Comment: Adding BAT lanes pushes general purpose traffic lanes farther from homes. May not necessarily increase noise for residents. Also, reducing speed limits to 35 mph could reduce traffic noise.
- Comment: Consider enlisting a bike/ped organization to help educate the community about the importance of sidewalks.

Primary Concerns of Sheridan Beach Residents

- Right of Way: "Do not need sidewalks on both sides of the street. Between 39th and Vet hospital, want it on east/lakeside only"-- While there's 100 feet of public right-of-way available, residents are concerned that the project will encroach on property that has historically been used for uses like parking, etc. Residents recognize the inevitability of bus access transit (BAT) lanes but would prefer for sidewalks to only be added on one side of SR 522.
- Access: "maintain two-way-left-turn lane access wherever possible"-- Residents are concerned about the loss of two-way-left-turn lane, so plans include additional signals to provide additional opportunities for turning
 - Comment: Consider illustrating that a two-way-left-turn lane takes up more right-of-way than the median would
- Noise: "sound walls"
- Speeds: "reduce speed limit on SR 522 to 35 MPH"
- Residents would like to see
 - Studies proving that medians increase safety
 - Comment: FHWA has documentation on this
 - Collision history for that stretch of SR 522

General Community Concerns

- Safety
 - "Do not include two-way-left-turn lane as it is dangerous and serves a limited number of residences"
 - "Close off 47th Avenue NE as it isn't safe or visible"
- Sidewalks
 - No sidewalks at all –DANGER, NOISE
 - Would like to see better sidewalks between the Vet and the Town Center
 - "Sidewalks on the west side of the street would be utilized by people

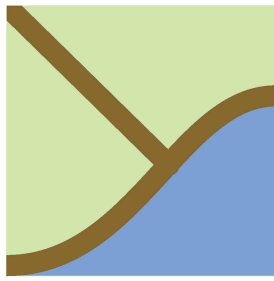


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| <p>who don't have a car"</p> <ul style="list-style-type: none"> • Medians <ul style="list-style-type: none"> ○ Cross-sections should be low impact development (LID) –draining to center with vegetated medians and using pervious pavements for sidewalks ○ Trees in medians should be applied with caution – sight distance for vehicles and also concerns about maintenance and visual blight ○ Desire to maintain parking and access over medians • How much change is wanted? <ul style="list-style-type: none"> ○ No changes should be a choice ○ "Build a lid over SR 522 with a park on top!" ○ Separate through traffic from local traffic – tunnels and/or flyover lanes? <p>Recommendations</p> <ul style="list-style-type: none"> • Neighborhood impacts: recommended cross-section treatment changed to as narrow as possible in locations to limit right-of-way needs and provide space for potential mitigation, if warranted. • Safety: Maintain and enhance access control throughout the corridor • Regional transit mobility: Completion of the business access transit (BAT) lanes through Lake Forest Park • Local access: Provision of a basic sidewalk facility on both sides of the street corridor-wide –critical for ADA • Vehicle mobility: Consider existing and future traffic demands to maintain reasonable travel times along the corridor | |
| <p>145th intersection</p> <p><i>Fehr and Peers provided an overview of community feedback and the resulting recommendations for improvement options for the SR 522/145th intersection. The Consultant Team came to the November 14th Open House with a single option and received feedback that people wanted to see more done to enhance capacity and reduce bus/car conflicts.</i></p> <p>Option 1: Widen SR 522 all the way to the 145th intersection to provide a separate transit-only lane. The transit-only lane would be outside of the general purpose southbound right-turn lane. This option performs best from the vehicle operations standpoint, transit operations, and pedestrian environment, but would require purchase of at least a portion of McDonald's property.</p> <ul style="list-style-type: none"> • Q: Would it be possible to put the southbound bus stop on the far-side after the intersection? A: This would require two separate stops; one on 145th | <p>Kendra Breiland</p> |



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and the other south of the intersection. The near-side stop is proposed to prevent buses from backing up traffic on southbound SR 522 like under current conditions.

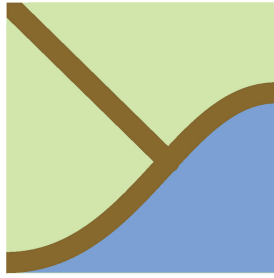
- Comment: Near side stop is feasible, but would require more complex signal phasing and operations.
- Q: How far back do you need to extend your right turn lane? A: Fehr & Peers will look into that.
- Q: Are there examples of this configuration? A: Yes, on Spring / 6th Ave in Seattle. There's a separate bus only lane and general purpose right-turn lane. A bus signal phase/queue jump is added.
- Comment: On Spring/6th Ave transit vehicles use the general purpose lanes through the intersection during the off-peak. Only when there are queues do buses use the bus only lane and queue jump. You'd want to try and incorporate this in your concept so signal timing is as efficient as possible. Response: this is a good point. Currently since bus stop is upstream of intersection, this may not be possible. We will further investigate how to refine this option.
- Q: Would you allow right turn on red? A: No. A right-turn sign could be added, which can turn on/off when right-turns are allowed/prohibited.
- Q: Can Vissim results be shared with Kendra D/Shoreline? A: Yes.

Option 2: Similar to original option presented at previous TAC meeting. Buses share right-turn only lane. Performs well from the perspective of pedestrian environment, but Vissim analysis shows substantial conflicts between right turning vehicles and southbound busses (through and right turn) on north leg.

Comment: Shoreline 145th Plan shows BRT stop on NE 145th (after the intersection). Response: We show a shared stop up-stream to avoid the southbound queuing that occurs when a bus stops south of the intersection today.

Option 3: Same as Option 2 except for southbound bus stop placed further south of intersection.

- Purpose of this option is to have buses stop farther south of intersection to reduce the queuing of general purpose traffic when a bus stops in-lane.
- This is worse for transit transfers as people have to walk farther to reach the other bus stops.
- Comment: moving the stop further south creates a worse pedestrian environment. It may entice transit riders to cross mid-block because the signalized crosswalk is further away now and perceived as inconvenient.



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| Non-motorized access <ul style="list-style-type: none">• 5 projects got the most support<ul style="list-style-type: none">○ SR 522 crossing improvements at Ballinger Way & NE 170th St.○ Better-defined pedestrian paths within TC○ Sidewalks and traffic calming along 37th Ave NE• An additional eight projects were proposed by the community including:<ul style="list-style-type: none">○ Street connections for more direct routes between Town Center, SR 522, and local neighborhoods○ Desire to add pedestrian lead time to the NE 165th St signal• Additional project details will be added to the more highly supported projects in the final report. | |
| Thank-you <p><i>Mayor Jeff Johnson stopped by the TAC meeting to briefly thank the TAC members for participating in the Safe Highways project. He emphasized the critical role of mass transit in the City's future and the importance of this project to the City's residents.</i></p> | Mayor Jeff Johnson |
| Next Steps <ul style="list-style-type: none">• A draft document will go to City Council on February 8th• Consultant Team will attend an upcoming meeting of Sheridan Beach Club• Thank you, TAC members! | |