



January 20, 2016

Sound Transit Board  
c/o Board Administrator  
401 S. Jackson Street  
Seattle, WA 98104-2826

Dear Chair Constantine and Members of the Sound Transit Board of Directors:

As in the past when Kirkland supported Sound Move and ST2, the Kirkland City Council is excited to participate and support the development of future transportation investments for our city and the region. As you asked in your December 7<sup>th</sup> letter, we have comments on the E-02, E-03 and E-06 candidate projects you are considering.

It is essential for sustainable growth in our part of the region to provide easy access to attractive, frequent, and integrated transportation options serving the Eastside as well as regional connections. Kirkland's current population is 83,460 and is expected to grow to 95,000 by 2035. Kirkland has one regional growth center in Totem Lake, and a second (our downtown) being evaluated for recognition. Transit is the key ingredient that makes these centers, and the growth management requirements, work. We have been a leader in developing jobs and housing densities that fulfill the vision of future growth. Transportation is the key to realizing the vision of sustainable growth in Kirkland.

The reality of geographic constraints requires that both the Eastside Rail Corridor (ERC) and I-405 contribute prominently to additional transportation capacity for Kirkland and the region. In Kirkland, ST3 projects must provide a highly-engaged community with effective transit along Kirkland's portion of the ERC, the Cross Kirkland Corridor (CKC). This spine of service must include integrated connectivity to our downtown, to East Link Light Rail in Bellevue, and essential connections to other transit activity centers and urban centers. Service along the CKC should also respond to community concerns about potential impacts to ensure that the CKC remains a safe, attractive, world-class regional corridor for transit, pedestrians and bicyclists.

The BRT service on I-405 (E-02) must include a key connection at 85<sup>th</sup> Street to allow efficient access to Kirkland's downtown and to employment centers in east Redmond via Kirkland for regional travel from the north. An additional I-405 access point in the southern portion of the Totem Lake Urban Center will provide for the future job and housing growth already planned and connect to Lake Washington Institute of Technology.

Below is a summary of commitments that Kirkland needs in the ST3 package. Further policy and technical comments are included as a detailed attachment to this letter.

- 1a. Sound Transit should combine E-03 and E-06 and fully fund construction and operation of Light Rail on the CKC/ERC from Totem Lake to Bellevue to Issaquah. However, this

combined project scope must also include flexibility to fund and construct alternative High Capacity Transit modes such as Bus Rapid Transit on the CKC/ERC in Segment A from Totem Lake to Bellevue. The optimal mode choice for this segment should be determined after further analysis and input from Kirkland. If Light Rail is selected the rail guideway should be constructed to also allow use by appropriate bus service similar to the street car in Tacoma.

- 1b. To address community concerns, Sound Transit should partner with Kirkland to ensure that any transit on the CKC will have "zero" emissions, and also solve issues related to noise, safety, parking impacts, visual impacts and environmental impacts.
- 1c. Any Sound Transit project on the CKC must include design and construction of a trail that implements the CKC Master Plan vision for the main trail and preserves accessibility with numerous safe east/west crossings in addition to crossings at street intersections.
- 1d. High Capacity Transit on the CKC should be aligned east of the centerline of the corridor wherever possible to ensure the remaining width is sufficient to fulfill the CKC Master Plan vision.
2. Any project for BRT on I-405 should include an in-line station at NE 85<sup>th</sup> (E-02c1) to serve Kirkland and Redmond, and a second stop serving south Totem Lake. To be successful, the NE 85<sup>th</sup> in-line station needs to include transit-only lanes (E-02c2) to connect downtown Kirkland and the I-405/NE 85th Street interchange.

Thank you for the opportunity to review and comment on the candidate project templates for the ST3 candidate projects. Please don't hesitate to contact us if you have questions or need clarification on any of these requirements. The City of Kirkland is excited to work with you in the months ahead as you shape the ballot measure to provide critically-needed transit service throughout the region.

Sincerely,

Kirkland City Council



Amy Walen  
Mayor

## **City of Kirkland Input on ST3 Candidate Projects**

To provide you the best possible input, and to reflect the perspective of our community, the City of Kirkland has undertaken a tremendous public involvement effort around ST3. The Kirkland City Council, Kirkland Transportation Commission, and staff have all been heavily engaged first-hand in public outreach and community conversations. Sound Transit staff has also participated in this public involvement effort and the City of Kirkland greatly appreciates their assistance. The level of community engagement and the thoughtful input provided from members of the public reflect the strong interest and desire for transit in Kirkland. Although there are varying viewpoints on the three ST3 Candidate Projects, Kirkland continues to strongly support transit in our region in general and in Kirkland in particular.

The following is a list of the most frequent concerns heard at public meetings: preservation and enhancement of pedestrian and bike facilities on the CKC; safety at all facilities, with particular emphasis on the CKC; for trail users, access across the CKC, preserving the natural environment, the need for trails and other amenities to coexist with transit – even in the narrower sections of the corridor; elimination/mitigation of sound, odor and emission impacts of transit; construction impacts to the CKC and surrounding properties; and, seamless, easy integration with Metro Transit service, including connecting infrastructure built as part of ST3. The City of Kirkland expects that Sound Transit will make an early commitment to actively address each of these concerns in the planning, design, construction, operation and maintenance of ST3.

### ***Kirkland's Requests in ST3 projects.***

The following is a list of initial points that Kirkland would need included in an ST3 project set. This list will be modified, as the templates are refined, and as the ST3 package evolves. The list below represents the known requirements at this time.

These requirements are built around two themes: one is thorough, accurate planning based on adopted policy that will lead to an effective transit system; the other is addressing concerns we have heard from the public. There is, of course, overlap between these two areas and they should be blended to reach the most effective conclusion. The following list draws from both areas:

1. Projects serving Kirkland must deliver capital and service components that significantly advance the structure of transit service in Kirkland. Fulfilling the regional vision of transit on the ERC in Kirkland and Bellevue is key to this objective. Kirkland is requesting that funding be allocated at a level necessary to construct Light Rail on the CKC/ERC with the flexibility to fund and construct alternative High Capacity Transit (HCT) modes such as Bus Rapid Transit on the CKC/ERC from Totem Lake to Bellevue (Segment A of project E-03 and project E-06). In this way, if upon further analysis and public input, BRT or another future HCT mode is deemed the optimal mode for the CKC, the ST3 package will allow it. Even if Light Rail is constructed, it should be constructed in a way that would allow for use of the corridor by King County Metro Transit buses within a shared transit envelop.
2. Any transit on the CKC should address the community's concerns about noise, safety, visual impacts, and environmental impacts.

3. Any Sound Transit project constructing HCT on the CKC should include design and construction of a trail that implements the CKC Master Plan vision for the main trail.
4. Within the bounds of any existing easements, HCT on the CKC must generally be to the east of the centerline of the corridor unless a different alignment is needed to preserve the natural features of the corridor that enhance the trail experience. HCT needs to be on the edges of the CKC to ensure the remaining width is sufficient to fulfill the CKC Master Plan vision.
5. Accessibility across the corridor should be preserved. Numerous access points and safe crossings, in addition to those at intersections, should be provided in keeping with the CKC Master Plan vision.
6. Only vehicles that are quiet and have zero or near-zero emissions<sup>1</sup>, such as electric vehicles, should operate on the CKC.
7. Any project for BRT on I-405 should include an in-line station at NE 85<sup>th</sup> (E-02c1) to serve Kirkland and Redmond, and a second stop serving south Totem Lake. To be successful, the NE 85<sup>th</sup> in-line station needs to include transit-only lanes (E-02c2) to connect downtown Kirkland and the I-405/NE 85<sup>th</sup> Street interchange.
8. Sound Transit will need to work with the City of Kirkland to mitigate parking impacts from station locations.

### ***A policy basis for Kirkland's support***

As mentioned above, both regional and local transit play an important role in Kirkland's Transportation Planning. In particular, HCT on the CKC has a central role.

Following more than three years of public involvement, the Kirkland City Council recently adopted a number of documents that define Kirkland's future course, including the Comprehensive Plan and the Transportation Master Plan. In 2014, the Cross Kirkland Corridor Master Plan was adopted after a vigorous public outreach program. All of these plans identify HCT on the CKC as a goal toward which the City should be striving.

The Kirkland Comprehensive Plan's 2035 vision of a livable, walkable, green community can only be met with a high quality transit system that connects with the regional system. Developing transit as a realistic alternative for many trip types is one of the foundations of the City's Transportation Master Plan and will best be accomplished when transit can travel on a guideway that is separate from mixed traffic. A separate transit way on the CKC is one way of accomplishing this. The transportation element of the Comprehensive Plan was developed in coordination with the Plan's land use element and its recognition of Kirkland's future growth, including the Totem Lake Urban Center.

Results from the past three community surveys (conducted biennially in Kirkland) have shown traffic congestion as an item that is important to the community but which needs improved

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<sup>1</sup> Zero emissions in a practical sense; the intent is to get as near to zero as technically feasible.

performance. Adding better transit options is one several strategies that can be used to reduce traffic congestion.

Along with local policy support for transit on the CKC, there is regional policy basis for HCT on the Eastside Rail Corridor (ERC). The ERC Regional Advisory Council<sup>2</sup> (RAC) has adopted a policy statement in support of HCT along the entire corridor along with facilities for walking and biking. The RAC's policy vision is consistent with the reasons Sound Transit's purchased an HCT easement on the ERC

In addition to the many policies and long-range plans associated with the CKC, Transit Oriented Development (TOD) at Kingsgate Park and Ride is directly referenced and supported in the City's Totem Lake Business District Plan, in both Goals and Policies.<sup>3</sup> This site is an excellent candidate for TOD development, furthering Kirkland's, Sound Transit's and the region's goals for affordable housing, accessible transit, traffic congestion reduction, and reduced carbon emissions.

### ***Comments and questions on the ST3 Candidate Projects and templates***

#### *Summary of Kirkland's Comments*

1. General
  - a) TOD at Kingsgate Park and Ride should be included as part of a project in ST3.
  - b) Ridership estimates should be refined. In particular, the regional modeling approach used by Sound Transit, although appropriate for gross scale modeling over the entire three-county region, does not reflect important ridership trends and forecasts at a smaller geographic scale. In other words, the number and locations of stops are absolutely critical to a city the size of Kirkland, but are not shown to have any effect on ridership in the model. Similarly, trips within a city the size of Kirkland are not captured in the ridership model.
  - c) Reconfigured King County Metro Bus Routes should be modeled with each Candidate Project. Service integration, and the potential value of overall transit service delivery, should be considered in project selection.
  - d) A calculation of project benefits should be completed that would allow easier comparison of the value of projects.
  
2. E-02 Bus Rapid Transit on I-405 from Lynnwood to Burien or Sea-Tac and the associated sub projects E-02c1 and E-02c2.
  - a) The scope of this project should be reviewed and revised to include all elements of a high quality BRT system.

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<sup>2</sup> King County, the cities of Kirkland and Redmond, Sound Transit, and Puget Sound Energy own segments of the Eastside Rail Corridor or easements on the Corridor. These owners work together through the Regional Advisory Council (RAC) to maintain a collaborative, regional planning process for the ERC. The owners' goal is to achieve connectivity and multiple uses, maximizing public benefit and enjoyment throughout the corridor both directly and indirectly.

<sup>3</sup> Policy TL 18-3: Seek opportunities to expand housing in the Totem Lake Business District, Goal TL-34: Support transit-oriented-development (TOD) at the Kingsgate Park and Ride. Policy TL-34.1: Encourage new transit-oriented development.

- b) E-02b Bus Rapid Transit on I-405 from Lynnwood to Burien or Sea-Tac (Intensive Capital) with connections at NE 85<sup>th</sup> (E-02c1 and E-02c2) (see #7 on page 2) should be included in the ST3 package.
  - c) E-02c1 and E-02c2 should be combined into one project.
  - d) The concept of center stations should be considered on both NE 85<sup>th</sup> Street and I-405, in projects E-02c1 and E-02c2. These projects should include a median aligned busway on NE 85<sup>th</sup> Street.
  - e) The scope of project E-02c2 should consider routing to 6<sup>th</sup> Street, next the redeveloping Kirkland Urban project, rather than 3<sup>rd</sup> Street, to improve travel time and ridership.
3. E-03 Totem Lake to Issaquah Light Rail
- a) The project should be re-scoped with funding adequate to construct and operate Light Rail, but provide the flexibility to instead construct and operate the highest level of Bus Rapid Transit or other suitable mode of HCT. This flexibility will allow Kirkland to determine which mode best serves Kirkland and the region.
  - b) A connection should be provided between Light Rail on the CKC/ERC and downtown Kirkland.
  - c) A flexible guideway that could be used by Metro Transit buses as well as Light Rail, similar to the street car lines in Tacoma and Seattle, should be provided in this project.
4. E-06 BRT on Eastside Rail Corridor from Kirkland to Bellevue
- a) Consider a more complete transit service plan that includes King County Metro service. Any HCT guideway should be flexible and allow use by appropriate bus service as well as Light Rail.
  - b) Travel time estimates and resulting impacts on ridership should be examined.
  - c) The scope of project should consider routing to 6<sup>th</sup> Street, next to the redeveloping Kirkland Urban project, rather than 3<sup>rd</sup> Street to improve travel times and ridership.
  - d) Routing should include aerial routing in Totem Lake to avoid delay caused by congestion and traffic signals.
  - e) The costs of the project should be reviewed to better understand why costs are much higher than industry norms.

*General comments: Ridership*

City of Kirkland staff and consultants have raised general concerns around the ridership forecasts in the Project Templates. The regional ridership model uses forecast zones that are relatively large. Although this may be appropriate at the regional scale, there are aspects that are of interest to Kirkland that are not depicted. For example the model under-counts trips within Kirkland, and the ridership benefits of stations closer to homes, jobs, and key transfer points, due to the limitations of a model designed for regional rather than municipal-level analysis. The model assumes that all people live and work at the middle point of each zone, (known as the 'zone centroid'). For regional analysis, this is a reasonable simplifying assumption. However, this assumption means the model cannot distinguish between the average access trip differences under different station-location scenarios, because the model cannot, for example, distinguish between people living in the Everest Neighborhood versus the Lakeview Neighborhood within Kirkland. This plays out in the analysis of Project E-02 BRT on I-

405 in that the Intensive Capital (E-02a) option with more stops and access has the same ridership forecast as the Lower Capital (E-02b) alternative.

While the model does not project added ridership with additional stops, ST staff has indicated that increased stops do result in increased travel time in the ridership model. This further complicates comparisons of templates with one another.

*General comments: Coordination with Metro Service*

One of the most important factors in projecting ridership for a proposed project is the transit service plan that will operate in conjunction with the project. What the model assumes about the service plan, as well as what will happen to the existing bus services, will generally determine ridership projections.

For example, Project E-06, includes one service that runs from Totem Lake to Bellevue. All other Metro and ST bus services are assumed to remain as they currently exist. Therefore, ridership on E-06 appears much lower than it might be with a more sophisticated service plan in which King County Metro would also operate services on the CKC/ERC BRT infrastructure. If only one ST-operated BRT service is assumed on the CKC, and no other bus service changes are assumed, competition between existing bus routes and the new BRT service will draw riders away from the new BRT, thereby decreasing projected ridership. Sound Transit staff has indicated a willingness to discuss service changes but also indicated that most service planning decisions would come in a later design phase. While this may not significantly alter other templates, it has a very significant impact on the viability of the projects affecting Kirkland, most particularly E-06, E-02c1, and E-02c2. To a far greater degree than other Candidate Projects, these projects in Kirkland can significantly benefit from integration with King County Metro service.

***Project Specific Comments: Candidate Project E-02 BRT on I-405***

***Candidate Project E-02a: Bus Rapid Transit on I-405 from Lynnwood to Burien or Sea-Tac (lower capital)***

*Quality of Bus Rapid Transit on I-405 as presented in E-02a–SegA.*

Considering the elements that characterize Bus Rapid Transit (BRT), Kirkland staff and consultants have raised a concern that this proposal is express bus service renamed “BRT.” Key elements that distinguish high quality BRT but that do not appear in the templates include:

- **Dedicated right-of-way:** Buses will operate in shoulder lanes and general purpose lanes over some of the route and Express Toll Lanes are subject to congestion.
- **High quality stations with platform-level boarding:** The improvements included for the in-line station at NE 128th Street are “minor improvements including signage.”
- **High levels of bicycle access:** Note that, in the template, for the purpose of non-motorized bicycle access allowances, the Kingsgate/Totem Lake Station, located in the Totem Lake Urban Center, is not considered an urban station, but rather a suburban station.
- **Multiple service routes that can leave the main facility:** The template includes only one route and excludes service beyond the I-405 BRT corridor.

- **Appropriate vehicle configuration:** It is unclear if the vehicles being proposed have appropriate configurations. Our team recommends purchase of vehicles that have doors on both sides of the coach in order to serve center platforms, thereby saving hundreds of millions of dollars in station construction costs over stations on both sides of a stop.

*Kirkland improvements in E-02a–SegA.*

Template E-02a-SegA utilizes the existing inline bus transit station at NE 128th as the only stop in Kirkland. The fact that there are no new connections for the Totem Lake Urban Center or for Downtown Kirkland means this project proposal offers little to no benefit or value to Kirkland residents, businesses and workers. Further, only considering a garage at the Kingsgate Park and Ride does not maximize the potential for increasing affordable housing stock through transit oriented development (TOD) at that site.

***Candidate Project E-02b-SegA: Lynnwood Transit Center to Bellevue Transit Center (Intensive Capital)***

*Description*

In Kirkland, Template E-02b-SegA is an improvement over E-02 b because it includes an inline station at NE 112<sup>th</sup> St, providing a second connection to the Totem Lake Urban Center. ST staff explained that the reason the addition of 112th Street did not yield any additional riders was because the station is close to the Kingsgate Park and Ride stop, and the two stops split the demand rather than generating new demand. This could be the result of the large zones used for modeling as described above. The quality of bus rapid transit comments made for E-02a-SegA also apply to this project. Because this project alone does not include a connection to NE 85<sup>th</sup> Street, it is unacceptable to the City of Kirkland.

*Comparison of E-02a and E-02b in SegA:*

Sound Transit's 2014 Sound Transit Central/East High Capacity Transit Corridor Study<sup>4</sup> indicated larger differences in travel time savings than are recognized in the templates. It also seems as though the addition of The HOV to HOV direct connection between I-5 and I-405 would likely save minutes of travel time but neither of these differences manifest themselves in ridership differences between the alternatives.

***Candidate Project E-02c1: Kirkland-NE 85th Street BRT Inline Station (Intensive Capital)***

To provide any meaningful service to the City of Kirkland, Template E-02c1 needs to be funded and included in any iteration of ST3 Candidate Project E-02-SegA. As noted above, center platform stations on NE 85th Street and I-405 could save substantial construction costs over split stations. These savings may be several times greater than any impacts to fleet costs needed to provide vehicles with doors on both sides of coaches. To effectively connect riders with other service, this project will need to be completed with project E-02c2 (below).

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[http://www.soundtransit.org/sites/default/files/documents/pdf/projects/HCT\\_2014/STCentralEastHCT\\_CorridorReport\\_KBI.pdf](http://www.soundtransit.org/sites/default/files/documents/pdf/projects/HCT_2014/STCentralEastHCT_CorridorReport_KBI.pdf)

***Candidate Project E-02c2: Kirkland-NE 85th Street Bus-Only Lanes (Intensive Capital)***

Again, to provide any meaningful service to the City of Kirkland, Template E-02c2 will need to be funded and included in any iteration of ST3 Candidate Project E-02-SegA. As described above, this project should be included with E-02c1 in order to be effective. Template E-02c2 calls for “outside” bus only lanes. To provide speed and reliability and set the stage for BRT service along this link, the lanes should be located in the center of the roadway. This configuration would also allow for a center platform on NE 85th Street. It would require less street widening and perhaps reduce the reconstruction costs of the NE 85th Street interchange. It could also be used by BRT service on the CKC/ERT to connect to downtown Kirkland. Bus-only lanes on NE 85th must allow for a center lane station to serve E-02c1. The template as proposed also connects to 3rd Street in Kirkland, but it may be beneficial to connect to 6th Street and the Kirkland Urban development because it would reduce the length of the project and still make a strong connection to downtown Kirkland.

***Project Specific Comments: Candidate Project E-03: Light Rail from Totem Lake to Issaquah via Bellevue***

The scope for this project should be altered to provide flexibility to allow for alternative High Capacity Transit considerations such as Bus Rapid Transit on the Eastside Rail Corridor in Segment A from Totem Lake to Bellevue, if, upon further analysis and public input, this is the optimal mode for the CKC. Even if Light Rail is constructed, it should be constructed in a way that would allow for use of the corridor by King County Metro Transit buses on a shared guideway.

A connection between downtown Kirkland and LRT should be provided. This could be accomplished through a project similar to E-02c2 (see comments above). Additionally, a quality connection to East Link and other LRT should be included in the scope.

More stops are needed along this line. The key to the pedestrian connectivity envisioned in the CKC Master Plan is close proximity to stops.

We ask that Sound Transit work closely with the City of Kirkland on the configuration of the Totem Lake terminus area. This area experiences extremely high traffic volumes. The intersection of 124<sup>th</sup> Avenue NE and NE 124<sup>th</sup> Street is particularly complex. A major redevelopment of the Totem Lake Mall is underway, that will provide better pedestrian and bicycle access to the area, as well as substantial new housing. Additionally, Evergreen Hospital is Kirkland’s largest employer. It is not clear in the template how rail would be constructed and routed to most optimally serve this important urban center.

***Candidate Project E-06: Bus Rapid Transit from Totem Lake to Bellevue on CKC/ERC***

***Ridership***

The analysis in this project’s template would benefit from a consideration of how King County Metro Service could be reconfigured to better take advantage of new capital projects. There are several Totem Lake-Bellevue and Seattle bound services that could benefit from travel on the CKC. For

Route	Daily 2015 Ridership
255	6905
235	1140
234	1415
311	1075

example, in 2015, Metro's Route 255 carried an average of 6,905 passengers, Route 235 carried an average of 1,140 passengers, Route 234 carried an average of 1,145 passengers, and Route 311 carried an average of 1,075 passengers. Our consultants estimate that if just these four routes used the CKC/ERC BRT for part of their trip, there could be over 10,000 daily riders upon opening of the project with estimated ridership of 34,500 by 2040. Note that one of the primary benefits of this project is improved service for Seattle-oriented transit riders, something that is lacking in the E-02 and E-03 projects. By using the CKC, Metro buses traveling from I-405 to Seattle via SR 520 could avoid the congested freeway interchange by using the direct access ramp to and from the west at 108<sup>th</sup> Avenue NE and SR-520 adjacent to the South Kirkland Park and Ride.

The template for E-06 calls for one service with a 10 minute peak headway between buses. If the service plan above were implemented, a better frequency could be maintained. At a minimum, a frequency equal to that assumed in the E-03 template, 7.5 minutes, should be used.

#### *Travel time*

The template shows an estimated travel time of 35 minutes from the Totem Lake Transit Center (TC) to the Bellevue TC on the BRT. The service that would travel from Totem Lake to Bellevue most closely mimics the existing 235 bus route. Currently, the trip on the 235 between Totem Lake TC and the Bellevue TC takes 37 minutes. Consultants working for the City of Kirkland conducted a travel time analysis and determined that the trip from Totem Lake TC to Bellevue TC would take roughly 27.5 minutes. This difference is important because ridership assumptions should increase if the trip time is decreased by 25%. The reasons for the difference in travel time have to do with operating assumptions around how long buses take to slow at a station, pick up passengers and accelerate away from the station. More importantly they have to do with the routing assumptions described below.

#### *Routing*

As described in the discussion around the template for project E-02c2, routing for project E-06 was considered on Central Way in curbside transit lanes with some mixed traffic to 3rd Street and Kirkland Way before rejoining the CKC/ERT. Kirkland prefers a more direct routing in median aligned, exclusive bus lanes between the CKC/ERT and 6th Street, with a station at Kirkland Urban (former Kirkland Parkplace). This location balances the needs of pedestrian access to downtown while also minimizing the diversion from the CKC/ERC for BRT vehicles and the additional delay caused by mixed traffic.

In the Totem Lake area, Kirkland asked that full BRT infrastructure throughout Totem Lake to the Kingsgate Park and Ride, including an elevated busway over 124th Street, be assumed in the template. The template assumed Business-Access-Transit (BAT)<sup>5</sup> lanes through Totem Lake, subjecting the BRT to congestion delay between the Kingsgate Park and Ride, Totem Lake TC, and Totem Lake Mall, and signal delay at 124th Street. The assumption of operation in mixed traffic added to the travel time assumed for the route by ST. The elevated busway should be added to this option.

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<sup>5</sup> BAT lanes allow transit to travel in them, and autos can use them to turn from at driveways and intersections but cannot travel extended distances in them.

Similar to the Light Rail option, we ask that Sound Transit work closely with the City of Kirkland on the configuration of the Totem Lake terminus area. Any BRT system will need to be constructed in a way that will most optimally serve this important urban center.

### *Costs*

The ST template lists the total capital cost for the E-06 template as \$747 million. With 10 miles of new infrastructure, this averages out to \$74.7 million per mile. This is a much higher cost per mile than most BRT projects developed in the United States. For example, CTfastrak's BRT, built on a converted freight rail line like the proposed CKC/ERC BRT, is widely known to be a very expensive project. The cost for the CTfastrak BRT was \$567 million for 9.4 miles, or an average of \$60.32 million per mile, still less than the CKC/ERC BRT estimate. Los Angeles' Orange Line was similarly on an old rail line and cost around \$30 million per mile, and Pittsburgh's Martin Luther King, Jr. East Busway also cost around \$30 million per mile. Only Boston's Silver Line Waterfront, which averaged to \$80 million per mile, is more expensive and that is because it included a new tunnel under Boston Harbor. To allow for an accurate comparison across templates, and to establish a measure of benefit per unit of cost, the capital costs of the E-06 template should be revisited.

Vehicle costs should also be revisited. At \$1.8 million, this is much higher than the industry norm cost of BRT vehicles. In order to mitigate the impacts of transit vehicles on the trail portion of the CKC, only quiet, zero (or near-zero) emission buses should be operated. These buses may in fact have a higher cost than the average BRT vehicle, but this is not clearly described in the templates as a reason for the higher vehicle cost.