FEHR PEERS

September 25, 2017

Ms. Kim Adams Pratt
Kenyon Disend
11 Front Street South
Issaquah, WA 98027

Subject: **Review of East Lake Sammamish Trail Segment 2B – Applicant Response to City First Review**

Dear Ms. Adams Pratt:

I have completed my review of the East Lake Sammamish Trail Segment 2B Applicant Response to City First Review. I have focused my review on Toole Design Group's memorandums dated June 20, 2017 regarding trail demand analysis and minimum trail width.

TRAIL DEMAND ANALYSIS

Toole Design Group's June 20, 2017 memorandum regarding minimum trail width summarizes a direct demand model developed to forecast user volumes on the East Lake Sammamish Trail Segment 2B. The direct demand model forecasts user volumes on the East Lake Sammamish Trail based on counts collected elsewhere in the Seattle region.

A key detail for identifying the minimum trail width is the forecast user volume. The AASHTO Bike Guide recommends 11 to 14 foot paths on trails that are anticipated to serve high user volumes (more than 300 total users in the peak hour).

Toole Design Group's memorandum provides forecasts for an average weekday, average weekend day, peak weekday, peak weekend day and peak hour. Several aspects of the forecasts are worth questioning.

First, by forecasting to the nearest one user 23 years into the future, the forecasts imply a level of precision that is not reasonable.

Second, the forecasts suggest that at both the Inglewood Hill and Segment B locations, average weekend day and peak hour volumes will not increase between 2017 and 2040 while increases are expected on an average weekday, peak weekday and peak weekend day (Page 12, Table 3). Forecasts that suggest that average weekend day and peak hour volumes will not increase by one

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user in 23 years, while average weekday, peak weekday and peak weekend day volumes do increase, are contrary to engineering judgment and common sense.

Third, it is unclear based on the information provided how many days per year are expected to carry the peak weekday, peak weekend day and peak hour volumes. Does the peak hour only occur once per year? Does it occur every day? What about the peak weekend day, is that only observed once per year?

Based on the information provided, and assuming that the peak hour forecasts will occur during the peak weekend day, the peak hour volume represents approximately 10 percent of the peak weekend day volume. Applying 10 percent to the average weekday, average weekend day and peak weekday suggests that average weekend day peak hour volumes (which will be larger than the average weekday peak hour and the average weekday peak hour volumes) will be approximately 160 users per hour, well below 300 users. This suggests that the forecasted peak hour volumes represent events that would only rarely ever occur.

Forth, it is unclear whether the counts collected elsewhere in the Seattle region were filtered to eliminate programmed special events for which permits could be restricted on East Lake Sammamish Trail Segment 2B. A quick Web search revealed at least one half marathon whose route uses the Sammamish River Trail in Redmond; additional running races were also noted on the Burke Gilman Trail (Attachment A). Removing these data points from the direct demand model may show that events above 300 users may never or only rarely occur on the East Lake Sammamish Trail Segment 2B.

Understanding the frequency of events above 300 users is critical to informing whether a path wider than the AASHTO Bike Guide's recommended minimum (10 feet) is necessary. Given the current questions on the forecasts, it is possible that the trail may never or only rarely experience 300 users per hour. It is difficult to justify a 12-foot trail along the entire length of East Lake Sammamish Trail Segment 2B if the demand only warrants it a few days per year. Designing the trail to a width to serve peak hour volumes experienced regularly (for instance, the peak hour volume experienced most weekend days per year) is more consistent with standard transportation engineering practices. If events above 300 users per hour never or only rarely occur, and unless design guidance or research suggests that volume exceeding capacity for even a few days really substantiates a safety hazard, it is justified that the trail can be narrowed in locations to avoid physical constraints.

MINIMUM TRAIL WIDTH

Regarding trail width, I agree with Mr. Schultheiss regarding the recommendations of the AASHTO Bike Guide. However, I believe that Mr. Schultheiss' evaluation muddles the difference between standards and guidance. The AASHTO Bike Guide provides guidelines and recommendations which inherently provide flexibility; the AASHTO Bike Guide is not a set of standards. Although Mr. Schultheiss is clear to state that AASHTO's language is in the form of "recommendations", his evaluation suggests that the AASHTO Bike Guide's recommendations are absolute standards that shall apply without flexibility or context-sensitivity. The AASHTO Bike Guide provides ample guidance that paths less than 12 feet may be used due to physical constraints. Unfortunately, the definition of physical constraints is a grey area and the crux of the engineering judgment debate at hand.

This is a common issue in designing trails, or for that matter roadways. As engineers, we strive to design facilities to meet guidelines whenever possible. However, it frequently occurs that meeting all desirable guidelines comes at a great cost and results in other impacts including to private property, environmental resources or other resources. When this occurs, we make case-by-case decisions whereby we weigh the costs (dollars, property, environment, etc.) against the risks (safety, level of service, etc.). There is no clear process for doing this but the County's position as suggested by Mr. Schultheiss is that the risks of any narrowing of the trail outweigh all of the possible costs. They have altogether omitted any case-by-case analysis. More research is necessary to say conclusively how even minor trail narrowing in short segments results in risks to trail user congestion, comfort or safety, but it is unreasonable that the risks will outweigh all of the costs as conclusively as suggested by Mr. Schultheiss.

Respectfully,

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Senior Associate

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Exhibit 58
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