

Exhibit X



21370 SW Langer Farms Pkwy
Suite 142, Sherwood, OR 97140

Technical Memorandum

To: Dave Vandehey, Roll Tide Properties Corporation

From: Michael Ard, PE

Date: November 21, 2022

Re: **Deer Meadows Subdivision – DKS Associates Review Comment Responses**

Following submittal of the Bull Run Terrace Subdivision Traffic Impact Study (September 2022 Update), we have received review comments from DKS Associates as the city's on-call transportation engineer. This memorandum is written in response to review comments dated October 31, 2022 by Dock Rosenthal PE and October 27, 2022 by Reah Flisakowski, PE.

The transportation review memo (Exhibit Q) by Dock Rosenthal, PE largely summarized the report, but included a few references to concerns that merit additional discussion.

- 1) *“Existing traffic volumes on US 26 were seasonally adjusted but the methodology applied deviates from ODOT’s Analysis Procedures Manual (APM). Updating the TIA with appropriate APM methodology is not anticipated to change the finding and recommendations. The APM methodology should be followed in future TIAs.”*

The seasonal adjustment methodology used in this report was consistent with the methodology used in prior traffic impact studies prepared for development in the City of Sandy over the last 5 years. The methodology was previously reviewed and approved for multiple traffic studies by John Replinger, PE (the city's prior on-call consultant) and by ODOT staff. However, we are happy to work with DKS Associates staff to come to agreement regarding how seasonal adjustments will be made on future reports.

- 2) *“Intersection sight distance requirements are met at the Dubarko Road extension at US 26. Stopping sight distance was not evaluated.”*

Intersection sight distance requirements are generally in excess of stopping sight distance requirements. In this instance, the required intersection sight distance was calculated to be 1,195 feet in each direction in order to account for large trucks that would be expected to use the intersection and a design speed of 65 mph. In contrast, the required stopping sight distance for a 65-mph design speed is just 645 feet in each direction (slightly more than half what is required for intersection sight distance). We do not anticipate any difficulty in achieving stopping sight distance requirements in addition to intersection sight distance requirements, and this appears to be largely a matter of ensuring technical completeness rather than pointing at a potential design flaw.



- 3) *“The Dubarko Road and Highway 211 intersection is recommended to be converted to an all-way stop controlled intersection to mitigate existing safety issues. The city does not support this intersection control change due to concerns with vehicles on Dubarko Road stopping on the grade during icy weather conditions.”*

The recommendation for installation of all-way stop control was made both to reduce the current high crash rates at the intersection and ensure the intersection meets the operational performance standards established by the City of Sandy.

Although installation of a traffic signal is also warranted and may also adequately address the operational and safety concerns, the cost of signalization (and lane additions) contemplated in the city’s current TSP is several orders of magnitude higher than installation of stop signs, with an estimated cost of about \$10 million. It is unclear when a traffic signal can be funded at this intersection, and failure to implement mitigation will mean continued operation with the existing safety deficiencies.

Notably, the city’s concerns with stopping under icy conditions would likely be worsened by installation of a traffic signal since southbound vehicles traveling down the hill approaching a stop sign know that they will need to stop (and we can install permanent stop signs at the stop bar, “stop ahead” signs in advance, and even rumble strips and speed feedback signs to ensure that drivers are aware of their speed and the need to stop. In contrast, drivers approaching a traffic signal will often see a green display and not be sure whether they will need to stop prior to entering the intersection. As such, initial speeds prior to braking would be likely to be higher with signalization, and the required rate of braking on the hill would be increased.

Based on these considerations, it remains our recommendation that the intersection be converted to all-way stop control.

- 4) *“Trips included in the summary trip generation table on page 13 do not match the values in the appendix. The analysis shall be updated as needed, this may include discussion of pass-by or diverted trip assumptions.”*

The reported values in the table were confirmed to precisely match the values in the appendix. It is likely that this comment arose due to the fact that the trip generation calculations in the technical appendix included more than one page for the same land use categories, albeit with different sizes. These differences were intentional (e.g., the maximum size for a Supermarket under the existing zoning was 18,433 sf, while the maximum size under the proposed zoning increased to 25,720 sf.) No revisions to the trip generation calculations are needed to address this review comment.



The Dubarko Road Proportionate Share Funding Plan memo (Exhibit R) by Reah Flisakowski, PE utilized information from the City's 2011 Transportation System Plan to calculate a proportionate share contribution payable toward planned improvements at the intersection of Highway 211 and Dubarko Road. However, the analysis contains several problematic assumptions and conclusions.

First, the analysis takes for granted that installation of the improvements contemplated in 2011 will be necessary under year 2029 traffic conditions. However, the need for these improvements was predicated on outdated traffic volume projections and the assumption that the intersection would operate under the jurisdiction of the Oregon Department of Transportation (i.e., needing to meet ODOT rather than City of Sandy performance standards and subject to ODOT approval of any installed traffic control devices). These assumptions are no longer applicable at this location.

Regarding traffic volumes, the memo outlines that the year 2020 entering traffic volumes totaled 907 vehicles. Under year 2029 it was projected that there would be 1,550 entering vehicles. This represents a 70 percent growth in volumes in just 9 years. This equates to a linear growth rate of 7.77 percent per year, which is more than double ODOT's projections of 3.16 percent per year growth on this highway. It is therefore unlikely that the intersection will experience those design volumes under year 2029 traffic conditions. It is also likely that re-analysis with more reasonable traffic volumes would lead to a finding that improvements with lesser costs would be sufficient for the actual projected traffic volumes. Installation of a traffic signal without lane additions, for instance, would have project costs in the range of \$500,000, about 5 percent of the \$10 million cost projected in the memo. Further, installation of all-way stop control would address the immediate concern and would have negligible construction costs.

Second, the analysis accounts for growth between 2020 and 2029, but ignores that the TSP was created in 2011. If the city intended to fund installation of these improvements based on contributions from new development, per-trip fees should have been assessed for all projects dating back to when this project was anticipated. Since this was not done, application of the suggested fee of \$268,345 for the 17 trips this project will generate at the intersection represents a significant deviation from past practice and unequal treatment with respect to this developer and this project as compared to other (and prior) development within the City of Sandy.

Installation of all-way stop control is expected to address the immediate concerns regarding safety and operation of the intersection and was projected to result in using only 79 percent of intersection capacity, providing some ability to accommodate growth prior to construction of further intersection improvements. Further, installation of stop signs on the Highway 211 approaches does not result in greater overall risks even under ice and snow conditions than installation of a traffic signal. Based on these factors, the request for payment of \$268,345 may not be a reasonable condition of approval.



Finally, the proportionate share calculation is subject to the constitutional standards for exactions as expressed in *Nollan v. California Coastal Com.*, 483 U.S. 825, 836–37 (1987) and *Dolan v. City of Tigard*, 512 U.S. 374, 391-395 (1994). *Dolan* is particularly relevant here, because it requires any exactions to be “roughly proportional” to the impacts which the exactions are intended to offset. Given that DKS’s proportionate share calculation relies on flawed assumptions, the City has likely not carried its burden to demonstrate the rough proportionality of that required contribution to the actual traffic impacts likely to be created by the project.

If you have any questions regarding these comment responses, please feel free to contact me at (503)537-8511 at any time.

