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Traffic & Transportation Engineering Services

MEMORANDUM

August 15, 2022

TO: Barb Kincaid, AICP
Community Development Director

FROM: Geralyn Reinart, P.E.

SUBJECT: Founder's Ridge – Review of November 2021 Traffic Impact Analysis

The following summarizes my review of the traffic impact analysis (TIA) for the proposed Founder's Ridge development dated November 2021 and prepared by Gibson Traffic Consultants (GTC, now part of Kimley Horn). The traffic study reviews the development of up to 800,000 square feet of either light industrial or manufacturing space. Completion of the project is estimated for 2026. A TIA was previously submitted for the subject site in June 2021 for the development of 160,000 square feet of light industrial and 640,000 square feet of manufacturing. Scoping comments were provided to the Consultant in May 2021 for the land uses summarized in the June 2021 TIA. (Note: the June 2021 TIA was not reviewed by the City.) No new scoping was provided for the revised land uses analyzed in the December TIA.

The project site is located on the west side of Center Drive at Palisade Boulevard in the Old Fort Lake sub-area. Access to the site is proposed from a westerly extension of Palisade Boulevard. The current proposal could potentially generate a range of 3144 to 3968 daily trips, 496 to 560 trips during the AM peak hour and 504 to 536 trips during the PM peak hour depending on the land use. These values include both vehicle and heavy truck trips. (See subsequent discussion for more details.)

Preliminary trip generation and trip assignment information for both vehicles and heavy trucks was submitted to the City for use in scoping for the TIA based on the land uses reviewed in the June 2021 TIA. Based on the preliminary trip generation and assignment, seven critical intersections within the City were identified for analysis during both the AM and PM peak hours.

The main items included in the TIA were as follows:

- An analysis of the Barksdale Avenue/DuPont-Steilacoom Road, Center Drive/DuPont-Steilacoom Road, Center Drive/Civic Drive, Center

Drive/Palisade Boulevard, Center Drive/Bobs Hollow Lane, Center Drive/McNeil Street and Center Drive/Wilmington intersections for both the AM and PM peak hours.

- AM and PM peak hour trip assignments for both passenger vehicles and heavy vehicles taking into account truck restrictions along Center Drive for the current interchange 119 layout.
- AM and PM peak hour trip assignments for both passenger vehicles and heavy vehicles taking into account truck restrictions along Center Drive for the future interchange 119 layout.
- Identification/discussion of any queuing issues for the northbound left-turns on DuPont-Steilacoom Road at Center Drive and for the northbound left-turns on Center Drive at Palisade Boulevard.
- Future volumes included both a 2% annual growth rate plus pipeline trips associated with ten other projects.

Although the proposed project would impact the I-5 Exit 119 ramps with 25 or more new trips no analysis was requested since these intersections are under WSDOT authority and the interchange will be re-constructed in the next several years. Additionally, it was noted that further analysis of transportation impacts within the Old Fort Lake sub-area would be occurring; as such, this analysis was done at the Applicant's own risk until such time that these uses within the subarea have been fully vetted through the SEPA process.

General Comments:

The analysis was prepared by a consultant fully qualified and experienced in the preparation of analyses of this nature, and conforms to the City's guidelines and includes all the necessary information to complete the review. The study summarized the existing and future conditions in the vicinity, along with the impacts of the project. All identified critical intersections impacted by the project were included in the analysis. Pipeline trips provided by the City were utilized as requested along with a 2% annual traffic growth rate. Even though the November 2021 TIA reviews a slightly modified land use proposal than originally proposed, the scoping comments as originally completed are appropriate.

Traffic counts completed in October of 2019 for the peak hours at six of the seven intersections were available from the City, along with counts from 2017 at the Center Drive/Civic Drive intersection. The counts from 2017 were increased by the 2% annual growth rate to reflect the 2019 conditions.

My specific comments with respect to the analysis are as follows:

1. **Page 4, last paragraph, first sentence** – to clarify, a level of service (LOS) below “D” is allowed through a variance to the **Public Works Standards** under certain conditions. Center Drive/DuPont-Steilacoom Road is not operating below LOS “D”, but rather queuing issues have been identified for future conditions.

Variances have been approved for the Barksdale Avenue/DuPont- Steilacoom Road intersection LOS deficiencies for prior developments.

2. **Page 5, Tables 2 & 3** – collision data for the years 2016 through 2020 indicate no extensive patterns or safety issues at the key intersections reviewed in the TIA.
3. **Page 6, Table 4** – the trip generation summary shows the estimated number of trips associated with two different land uses from the **ITE Trip Generation Manual**, i.e., 'manufacturing' and 'general light industrial'. These were the two most representative land uses corresponding to the City's zoning and are therefore acceptable. The trip generation summary shows that a manufacturing use would generate more traffic during the PM peak hour, whereas light industrial would generate more traffic during the AM peak hour and on a daily basis. For purposes of the subsequent analysis, the consultant used the higher of the peak hour values in order to be conservative and this is acceptable. These values are slightly higher than those originally estimated using a mix of the two land uses. (Note: the trip generation values were based on data from the 10th Edition of the **Trip Generation Manual**. Subsequent to the scoping and initial TIA prepared by the Consultant, a new **Manual** was published. Although there are some minor differences in the updated data, it is not of a magnitude that would significantly alter the results.)
4. **Pages 7, 8, 9, and 10, Figures 2, 3, 4, and 5** – the AM and PM peak hour trip assignments are shown correctly breaking out heavy vehicles and passenger vehicles onto separate figures. The truck restrictions along Center Drive were accounted for in the heavy vehicle assignment. All values were checked and are correct as shown. As previously noted, these values are based on the higher values for the land uses shown in Table 4.
5. **Pages 12 through 17, Figures 6, 7, 8, 9, 10, and 11** – all existing volumes and future volumes with and without the project are shown correctly; the future volumes were increased with an annual growth rate of 2% plus pipeline trips.
6. **Page 18, Table 5** – the level of service conditions for the existing and future conditions, with and without the project indicate all intersections would have an overall LOS of "D" or better. The future levels of service, as shown, were checked and presented accurately. The project could drop the LOS down a grade at a few locations for either of the peak hours, but all locations are projected at LOS "D" or better and would meet the City's level of service standards. These results are consistent with values that have been presented in other recent analyses.
7. **Page 18, last paragraph** – the Consultant states that eastbound movement at the Center Drive/Palisade intersection would include an eastbound left-turn lane, through lane and right-turn lane, with all other legs of the intersection remaining the same as current conditions. It should be noted that it is probable that the westbound lanes on the east leg of the intersection may require some re-alignment to accommodate the eastbound movements. This may also require some signal modifications.
8. **Page 19, first paragraph** – the Consultant discusses the street cross-section on Palisade west of Center Drive and the new streets proposed to serve the four new buildings. While these cross-sections are adequate to serve the subject proposal, further development within the Old Fort Lake sub-area may trigger the need for more capacity. Until such time that the EIS for the entire sub-area

is completed, the ultimate street cross-sections cannot be determined yet.

9. **Page 19, Table 6** – queue analyses were requested at two intersections, i.e., for the northbound left-turn on DuPont-Steilacoom Road at Center Drive and the northbound left-turn on Center Drive at Palisade. The values shown in Table 6 are from the June 2021 TIA and do not reflect the updated values. The newer data indicates that the existing 150-foot northbound left-turn storage on Center Drive at Palisade could exceed 250 feet during the AM peak hour based on the updated LOS calculations (*for the 95th-percentile queue; a condition that would be exceeded only 5% of the time for the subject analysis period*). The queue could be reduced by changing the northbound left-turn signal phase to protected/permissive, as suggested by the Consultant. I concur with this conclusion; however, this will need to be verified and if the signal phasing is not adequate then extension of the left-turn storage may be required.

The 95th-percentile queue for the northbound left-turn on DuPont-Steilacoom Road at Center Drive would periodically exceed 400 feet and 550 feet respectively during the AM and PM peak hours (this assumes the existing channelization at the intersection). The Consultant notes that dual northbound left-turn lanes at this intersection would reduce this queueing to under 200 feet. (This same conclusion was also noted in the Amazon Snow Blossom TIA.) I concur; this recommendation has been noted for several years prior to this analysis. Further development within the sub-area will create further need for additional left-turn storage. This condition will need to be monitored for adequacy upon completion of the City's current construction project.

10. **Page 20, Conclusions** – no mitigation was recommended since all intersections are expected to operate at an acceptable level of service in the future. A suggestion to change the signal phasing to protected/permissive for the northbound left-turn movement at Center Drive/Palisade Boulevard was noted. The amount of construction traffic was also noted as likely to be no greater than the amount associated with build-out of the project. It was also noted that the queueing for the northbound left-turn lane on DuPont-Steilacoom Road at Center Drive would be mitigated as part of the City's improvement project. See subsequent comments.
11. **Attachments A, Trip Generation** – no comments.
12. **Attachments B & C, Turning Movement Volumes** – all AM and PM turning movement volumes for the existing, future, and pipeline volumes were correctly shown.
13. **Attachments D through I, Level of Service Calculations** – all level of service calculations were checked and were correctly presented in the findings. Increases in truck percentages were accounted for in the future analyses. The overall level of service at all intersections would meet the City's standard of "D" or better. However, it should be noted that certain movements can be expected to show increased congestion in the future, with or without the project. This would specifically include the eastbound movement at Center Drive/McNeil Street and the eastbound left-turn at Center Drive/DuPont-Steilacoom Road. However, the overall LOS for these intersections is still acceptable for all of these conditions and therefore meets the City's

requirements. It should be noted that heavy vehicle percentages were adjusted (upwards) on the movements at the intersections impacted by project truck trips to reflect their impact.

14. A trip assignment for the AM and PM peak hours was requested for the future conditions upon completion of the Exit 119 reconstruction, but was not provided. This information will need to be submitted but has no bearing on any conclusions or recommendations.

Final Comments/Mitigation

The TIA is acceptable as presented and addresses the items that were requested, with the exception of the trip assignment through the new interchange which can be submitted upon its completion as a separate item; no re-submittal of the TIA is needed. As previously stated, further analysis of transportation impacts within the Old Fort Lake sub-area are forth-coming; as such, this analysis was done at the Applicant's own risk until these uses within the subarea have been fully analyzed and vetted through the SEPA process. The development of the four buildings described in the TIA are just a minor component of full development within the subarea. Until such time that the analysis of the entire subarea is completed and its impacts have been determined, it is not really possible to determine appropriate mitigation (or its share thereof) for this project. Although the street cross-sections and intersection controls within the subarea described in the TIA to serve Founder's Ridge are sufficient to serve the development as a stand-alone project, it is very probable that additional lanes will be needed on Palisade between Center Drive and the intersection of the New Roads 1 & 2. Furthermore, the intersection of these two new roads will likely require a higher level of control upon full development of the subarea (signal or roundabout). That does not mean that there cannot be interim street construction or intersection improvements to serve initial development within the subarea, as long as appropriate measures are included in any design/construction to accommodate future upgrades. A connection to Civic Drive and its use by this project has also not been considered. It is also very probable that off-site improvements will be needed with full buildout of the subarea and it is reasonable for all parcels within the subarea to contribute to these improvements once they have been identified in the EIS.

Based solely on the information presented in the Founder's Ridge TIA, and assuming it were a stand-alone project separate from the sub-area, there are mitigation measures that would be appropriate including:

- the construction of the roadways as described in the TIA to serve the site with provisions for any future widening to serve the subarea buildout traffic volumes,
- modifications to the Center Drive/Palisade intersection including widening of the west leg, re-construction of the east leg (as needed to align with the west leg, signal modifications necessary to serve the west leg and provide protected/permissive control for the northbound left-turn,
- extension of the northbound left-turn lane to serve the projected queue, as

- needed,
- participation in any off-site improvements identified upon completion of the subarea EIS.

The project will also impact the Center Drive/DuPont-Steilacoom Road intersection similar to the impacts identified by the Snow Blossom Fulfillment Center (i.e., the need for dual northbound left-turn lanes) which contributed towards the cost of improvements to DuPont-Steilacoom Road (this is recommended only if contributions are still being collected for the project).

Two additional measures for your consideration are as follows:

- Consideration should be given to requiring a truck/traffic management plan during construction to limit impacts to adjacent neighborhoods and school fields. This could include such things as off-duty police officers to direct traffic and timed entries to the site, etc. Further discussion with the Director and Police Chief is recommended.
- The City reserves the right to request an updated traffic impact analysis (TIA) if project development/building permitting extends beyond the 2026 horizon year used in the December 2021 TIA.

Please let me know if you have any questions with respect to the above information or if you'd like to discuss in more detail.