

REPLINGER & ASSOCIATES LLC
TRANSPORTATION ENGINEERING

October 27, 2017

Ms. Christina Robertson-Gardiner
City of Oregon City
PO Box 3040
Oregon City, OR 97045

**SUBJECT: REVIEW OF TRANSPORTATION IMPACT STUDY – LINDSAY ANNE
ESTATES TOO – TP17-07, AN17-3, & ZC17-03**

Dear Ms. Robertson-Gardiner:

In response to your request, I have reviewed the materials submitted in support of the proposed Lindsay Anne Estates Too Subdivision. The relevant materials included the project narrative, site plan and the Transportation Impact Study (TIS). The TIS is dated August 3, 2017 and was prepared under the direction of Todd E. Mobley, PE of Lancaster Engineering.

The proposed subdivision with 28 lots is located on the southwest side of Leland Road between S McCord Road and S Jessie Avenue. The proposed subdivision is adjacent to Lindsay Anne Estates that also lies southwest of Leland Road. The site totals approximately 6.32 acres. There is currently one single-family dwelling on the property. New local street segments would be constructed to serve the subdivision and create extensions to adjacent parcels. The principal new street, identified as Miller Road, would run roughly parallel with Lindsay Anne Lane in the adjacent subdivision and would intersect with Leland Road. Two other streets, Cedarwood Way and Cherrywood Way, would extend from the adjacent subdivision and would run roughly parallel with Leland Road. The proposal involves annexation and rezoning of the parcel from FU10 (county zoning) to R6.

The TIS provides a basis upon which the subdivision proposal can be evaluated for transportation impacts.

Comments

- 1. Study Area.** The study addresses the appropriate intersections. The engineer evaluated traffic patterns and traffic volumes and evaluated three locations. The key intersections were:

- S Leland Road at McCord Road
- Miller Road at S Leland Road
- Lindsay Anne Lane at S Leland Road

The first of these intersections is the only intersection of collector street with collector street or higher where site traffic volumes exceed 25 vehicles during either the AM or PM peak hour. The other two intersections are locations where traffic generated by the subdivision could be expected to access Leland Road, the nearest collector street.

The study area is appropriate.

- 2. Traffic Counts.** The traffic counts were conducted in April 2017 at the intersections identified in #1, above. Traffic counts were conducted during the AM and PM peak periods. The base year traffic volumes appear reasonable.
- 3. Trip Generation.** The TIS presents information on trip generation from the construction of 28 single-family dwellings. The trip generation rates were taken from the Institute of Transportation Engineers' *Trip Generation Manual*. After accounting for one existing home, the subdivision is predicted to produce 20 new AM peak hour trips, 27 new PM peak hour trips, and 256 new weekday trips.
- 4. Trip Distribution.** The engineer's trip distribution shows 20 percent of traffic going to and from the northwest on S McCord Road; 35 percent to and from the north on Leland Road; 15 percent to and from the north on Claremont Avenue; 15 percent to and from the northwest on Meyers Road via Jessie Avenue; and 15 percent to and from the southeast on Meyers Road via Jessie Avenue.

For access to and from the subdivision, the engineer predicts that the primary access to S Leland Road will be via Miller Road, the new connection serving the subdivision.

The use of Miller Road for the principal site access and general distribution to major streets appear reasonable.

- 5. Traffic Growth.** To account for background traffic growth, the traffic counts for the study area intersections were adjusted by 2 percent per year. This was done for the two-year period prior to completion of the subdivision and for the 2037 analysis

done to assess the long-term impact in connection with the proposed zone change. The traffic growth assumptions and methodology appear reasonable.

- 6. Analysis.** Traffic volumes were calculated for the intersections described in #1, above. At each location, the level of service (LOS) and delay calculations and the volume-to-capacity (v/c) ratios were provided to assess traffic operations relative to the city's operational standards. The analysis was undertaken for the AM and PM peak hours and included year 2017 existing conditions, 2019 background conditions, 2019 total traffic conditions with build out of the subdivision, 2037 background conditions, and 2037 conditions with the proposed subdivision and the proposed zone change to R-6.

According to the engineer, the all of the study area intersections are calculated to meet the city's operational standard in 2019 and in 2037 with or without the proposed subdivision. All intersections are calculated to operate at level of service (LOS) B or better and a volume-to-capacity ratio (v/c) of 0.10 or better during all analysis years.

The engineer concluded no mitigation measures are necessary to address the impact of the proposed development. I concur with his conclusions.

- 7. Turn Lanes at Site Entrance(s).** The traffic volumes on Leland Road at the site are so low and the predicted performance at the site access is excellent, so the engineer did not specifically analyze left-turn lane warrants on Leland Road at the site. It is clear that a left-turn lane on Leland Road will not meet volume warrants for the foreseeable future. Based upon the site plan, it appears sufficient width would be available on Leland Road upon build-out to accommodate a left-turn lane.
- 8. Crash Information.** The TIS provides crash information for the most recent five-year period at the study area intersections. There were no reported crashes at the intersection of Leland Road with McCord Road or Leland Road with Lindsay Anne Lane. He concluded that that there are no apparent safety deficiencies at any study intersection, and that on-site observations and available data suggest that all intersections will continue to operate safely in the future. I concur with his analysis and conclusions.
- 9. Pedestrian and Bicycle Facilities.** The narrative and site plan indicate pedestrian facilities would be provided within the development.

10. Site Plan and Access. The subdivision access would be provided by a new connection to Leland Road. Other streets parallel with Leland Road connect to the adjacent subdivision to the southeast. These same streets will provide connections when adjacent parcels develop to the northwest. Due to topographic constraints, principally the powerline easement, two lots are proposed to have direct access to Leland Road. All other lots would have access to local streets.

11. Intersection Spacing. One new intersection would be created on Leland Road approximately 300 feet northwest of the existing intersection of Leland Road with Lindsay Anne Lane. The spacing is appropriate given the configuration of the existing parcel and the location of existing streets.

12. Sight Distance. The engineer measured sight distance at the proposed access of driveways to Leland Road and the proposed Leland/Miller intersection and determined that at least 445 feet would be available, meeting applicable distances associated with the speed and classification of Leland Road.

13. Consistency with the Transportation System Plan (TSP). The project narrative indicates frontage improvements would be made to city standards. The subdivision will also contribute to increased connectivity in the area.

14. Impact on other Streets. The TIS also provides an analysis of the impact on Jessie Avenue and Frontier Parkway. The engineer discusses the potential for traffic to use these streets rather than Leland Road. He notes the presence of stop signs, roadway geometry and traffic calming provisions. He concludes three vehicles could use these streets during the AM peak hour and four during the PM peak hour. He concludes that the proposed development is not projected to adversely affect the safety, culture, or operation of Jessie Avenue or Frontier Parkway, and no mitigations are needed or recommended.

15. Transportation Planning Rule (TPR) Analysis. As noted above, the proposal involves rezoning from county FU10 zoning to R-6 zone. The TIS provides estimates of the number of lots that could be developed under R-6 (28 lots) and R-10 (17 lots). R-6 zoning represents the worst-case development scenario from a transportation impact perspective. The engineer states that the proposed zone change will not impact or alter the functional classification of any existing or planned facility and the proposal does not include a change to any functional classification standards. Furthermore, even with the increase in trips from the zone change to R-6, all study area intersections will operate acceptably through the planning horizon. The

concludes that the TPR is satisfied, since the proposed zone change does not significantly affect the transportation system. I concur with his conclusions and agree the subdivision and zone change does not change the functional classification of any existing or planned transportation facility.

16. Conclusions and Recommendations. The engineer concludes that traffic operations would be adequate at all analyzed intersections. He concludes no mitigation is needed for traffic operations or for safety. I concur with the conclusions of the applicant's engineer.

Conclusion and Recommendations

I find that the TIS provides an adequate basis upon which to assess the impacts of the proposed subdivision. I agree that off-site mitigation for traffic impacts is not required.

If you have any questions or need any further information concerning this review, please contact me at replinger-associates@comcast.net.

Sincerely,

A handwritten signature in cursive script that reads "John Replinger".

John Replinger, PE
Principal