

Memorandum

To: **Scott Gebhart**
City of Manzanita

From: **Daniel Stumpf, PE**
Todd Mobley, PE

Date: **February 7, 2025**

Subject: **Workforce Housing**
Transportation Impact Analysis Review

Introduction

This memorandum provides our transportation engineering review comments for a proposed workforce housing project located in Manzanita, Oregon at tax lot 3N10280001401. The proposal will include the construction of a 60-unit apartment complex, where dwelling units are intended as an affordable housing option for local residents. Access to the site will be provided via the future intersection of Loop Road at Necarney City Road.

The following section details Lancaster Mobley's review findings of the application's updated Transportation Impact Analysis (TIA) dated November 19, 2024, and prepared by Mackenzie.

Review Findings

Trip Generation & Distribution

The project's TIA indicates the proposal will construct a 60-unit apartment use on currently undeveloped property. This will result in the project generating 28 PM peak hour trips and 289 daily trips during a typical weekday. During a typical Saturday, the proposed development is estimated to generate 25 peak hour trips. Trip generation estimates were based on the current *ITE Trip Generation Manual, 11th Edition*, utilizing data from the following land use codes:

- Weekday Trip Generation: 223, *Affordable Housing (Income Limits)*, based on the number of dwelling units.
- Saturday Trip Generation: 220, *Multifamily Housing (Low-Rise)*, based on the number of dwelling units.

The reason the applicant used data from land use code 220 to estimate Saturday peak hour trip generation is because code 223 has limited available data for this time period.

The TIA utilized traffic count data collected at the intersection of Pine Ridge Lane at Necarney City Road and at the study intersection, as well as referenced data from other similar residential development studies in the area, to develop site trip distribution assumptions for a typical weekday and Saturday.

Lancaster Mobley concurs with the TIA's trip generation & distribution methodologies and findings.

Traffic Volumes

To estimate existing year 2024 traffic volumes at the study intersections, the TIA utilized weekday PM peak hour and Saturday peak hour traffic counts collected at the intersections of Pine Ridge Lane at Necarney City Road and Oregon Coast Highway (US-101) at Necarney City Road. Counts were collected on the following dates and time periods:

- Thursday, October 10, 2024, from 4:00 PM to 6:00 PM.
- Saturday, October 12, 2024, from 11:30 AM to 2:30 PM as well as from approximately 12:00 PM to 2:45 PM.

The volumes were seasonally adjusted to reflect the 30th highest hour volumes per ODOT's Analysis Procedures Manual. A seasonal adjustment factor of 1.19 was calculated utilizing Coastal Destination trend data from ODOT's 2023 Seasonal Trend Table.

To estimate year 2026 traffic conditions, the anticipated opening date of the proposed apartments, the following were conducted:

- Utilizing ODOT's 2040 Future Volumes Table, a 1% per year growth rate was calculated along US-101 and applied to the existing year volumes over a two-year period.
- In-process development trips associated with the following nearby development projects were added to the grown traffic volume estimates: Manzanita Lofts, Heron's Rest, and Nehalem Bay State Park Expansion.
- Site trips generated by the proposed apartment project were added to the study intersection volumes.

Upon reviewing Figures 3 through 10 in Appendix A of the report, the estimated traffic volumes and methodologies used to develop these volumes appear to be reasonable and correctly calculated.

Capacity Analysis

The TIA reviewed operation at the study intersections by utilizing 2024 existing volumes (seasonally adjusted), 2026 pre-development volumes, and 2026 post-development volumes, based on the Highway Capacity Manual (HCM) 7th Edition. For all analysis scenarios, the study intersections operated no worse than the following level of services (LOS) and volume-to-capacity (v/c) ratios:

1. US-101 at Necarney City Road: LOS C with a v/c ratio of 0.36.
2. Loop Road at Necarney City Road: LOS A with v/c ratio of 0.02.

According to the Oregon Highway Plan, the intersection of US-101 at Necarney City Road is required to operate with a v/c ratio no greater than 0.85. The City of Manzanita does not have an adopted mobility standard for intersections; therefore, intersections are assumed to have to operate at LOS D or better.

Based on a review of the reported operational results and capacity reports, all study intersections are expected to operate within acceptable agency standards. Lancaster Mobley concurs with these findings.

Queuing Analysis

The TIA includes a queuing analysis at the study intersections, where 95th percentile queues were estimated utilizing SimTraffic software. Adequate queue storage space was reported to be available at the study intersections. Lancaster Mobley concurs with these findings.



Crash Data Analysis

The TIA reviewed historical crash data between 2018 and 2022 (five-years) at the intersection of US-101 at Necarney City Road and along Necarney City Road between US-101 and Classic Street. Per the crash data, none of the reported crashes resulted in fatalities, the intersection crash rate was well below ODOT's 90th percentile crash rate threshold, and no other intersection-related crashes were observed along the segment of Necarney City Road (note four crashes not related to a specific intersection that involved only a single vehicle were reported). The TIA concludes that the proposed development will not create or exacerbate safety issues at these transportation facilities.

Lancaster Mobley concurs with these findings and believes the transportation system is expected to operate relatively safely following buildout of the proposed development.

Sight Distance

According to the TIA, sight distances were evaluated at the two proposed driveway intersections along Loop Road. Assuming a design speed of 25 mph along Loop Road, adequate sight distances are expected to be available to allow for safe operation of the two driveways. Lancaster Mobley concurs with these findings.

A preliminary review of intersection sight distances was conducted at the proposed access intersection of Loop Road at Necarney City Road. Based on a posted speed of 35 mph along Necarney City Road, a minimum intersection sight distance standard of 390 feet for southbound left-turning vehicles is recommended. No mention of sight distance requirements for minor-street right-turning vehicles was presented. The TIA recommends sight distances be reviewed as part of the design process of the proposed intersection. Lancaster Mobley recommends the City of Manzanita place a condition of approval on the application to review and confirm that adequate intersection sight distances will be available at the Loop Road at Necarney City Road intersection as part of its design process.

Left-Turn Lane Analysis

The TIA conducted a left-turn lane analysis at the intersection of Loop Road at Necarney City Road, utilizing methodologies presented in Section 12.2 (Exhibit 12-1) of ODOT's Analysis Procedures Manual. The analysis determine that an eastbound left-turn lane is not warranted at the intersection based on geometric design considerations and projected volumes entering the intersection during the weekday PM peak hour and Saturday peak hour.

Lancaster Mobley concurs with these findings and a dedicated eastbound left-turn lane is not warranted at the proposed intersection.

Additional Review Comments

During Lancaster Mobley's review of the TIA, several typos/errors were noted in the analysis. Assuming they are corrected, these items are not expected to result in significant changes to the findings and conclusions of the TIA. Therefore, Lancaster Mobley is not recommending the applicant address these items in order to deem their TIA complete, rather, these items are presented for transparency purposes and for the City's consideration.

- Figure 9, which pertains to the proposed development's trip assignment, depicts 16 Saturday peak hour trips enter the project site rather than the 15 peak hour trips reported in Table 2 – Trip Generation. This typo carried through the remainder of the Figures and capacity analysis. No revisions are deemed necessary given the increased entering trips provides a more conservative evaluation of development impacts to the transportation system.



- In the intersection capacity reports:
 - The peak hour factors (PHF) and heavy vehicle percentages used in the 2024 existing conditions analysis do not reflect those reported in the count data that was collected for the study intersections.
 - The PHFs and heavy vehicle percentages used in the 2026 post-development volumes for the weekday PM peak hour were coded to match the Saturday PHFs and heavy vehicle percentages.

No revisions to address these errors are deemed necessary since correcting these issues are not expected to cause either study intersection to exceed adopted mobility standards or result in significant changes to the queuing analysis findings.

Conclusions & Recommendations

Based on a review of the TIA for the proposed workforce housing development:

- All study intersections are projected to operate within acceptable agency capacity standards.
- All study intersections are projected to operate safely with respect to a review of crash history.
- No eastbound left-turn lane is necessary for the proposed Loop Road at Necarney City Road intersection.

Lancaster Mobley recommends the City of Manzanita place a condition of approval on the application to review and confirm that adequate intersection sight distances will be available at the Loop Road at Necarney City Road intersection as part of its design process.

If you have any questions or concerns regarding this review or would like additional information, please don't hesitate to contact us.

