

TECHNICAL MEMORANDUM

DATE: October 29th, 2021

TO: Brianna Addotta and Don Hardy, City of Canby

FROM: Kevin Chewuk, Alex Correa, and Chris Maciejewski, P.E. | DKS Associates

SUBJECT: Canby Territorial Fourplexes
Transportation Analysis Letter

EXECUTIVE SUMMARY

A summary of key findings from the Canby Territorial Fourplexes Transportation Analysis Letter is provided below:

- **Expected Additional Vehicle Trips:**
 - Approximately 4 a.m. peak hour trips, 4 p.m. peak hour trips, and 59 daily trips.
 - The adjacent collector street (i.e., NE Territorial Road) and most nearby intersections will maintain a level of traffic volume that is consistent with their classifications and planned growth from the TSP.
 - This proposed project will contribute its proportional share towards System Development Charge improvement projects from the TSP that are needed to accommodate the forecasted growth.
- **Proposed Site Access:**
 - Access to the site is proposed via one existing driveway connecting to NE Territorial Road.
 - Complies with the City's spacing standard for collector streets.
 - Preliminary sight distance evaluation indicates that sight distance is adequate. However, prior to occupancy, sight distance at the access point will need to be verified, documented, and stamped by a registered professional Civil or Traffic Engineer licensed in the State of Oregon.
- **Proposed Circulation:**
 - One driveway will provide access for vehicles and bicycles to the on-site parking areas.
 - NE Territorial Road is improved to meet the City's cross-section standard for collector streets, and no additional improvements are proposed along the site frontage outside of the replacement of sidewalk along the frontage of the proposed site.
 - The site will include sidewalk connections from the building entrances to the parking areas, and it is recommended to include a walkway to connect to NE Territorial Road.
 - These facilities can adequately accommodate the expected additional vehicle, pedestrian, and bicycle trips.
- **Transportation Approval Criteria and Livability Measures:**
 - The proposed site adequately addresses each transportation approval criteria and livability measure.

INTRODUCTION

This memorandum summarizes the transportation impacts associated with the proposed Canby Territorial Fourplexes development. This development is located at 531 NE Territorial Road, between NE Laurelwood Circle and N Manzanita Street in Canby, Oregon. The proposed site will consist of two buildings, each with four residential units, for a total of eight units.

LEVEL OF TRANSPORTATION ANALYSIS REQUIRED

The City requires transportation impacts to be assessed with any proposed development that will increase trips on the transportation system, consistent with requirements in the Canby Municipal Code 16.08.150. These transportation studies implement Sections 660-012-0045(2)(a), -0045(2)(b) and -0045(2)(e) of the State Transportation Planning Rule (TPR), which require the City to adopt access spacing and performance standards and a process to apply conditions to land use proposals to minimize impacts on and protect transportation facilities. These standards are specified in the Canby Municipal Code 16.08.160, with each proposed development approval dependent on meeting the specified criteria. In addition, the City assesses livability measures to each study for neighborhood traffic and pedestrian and bicycle circulation.

Transportation impacts are assessed by comparing the adopted standards to conditions before and after the proposed development is constructed. In general terms, a full transportation impact analysis (TIS) is required of developments that are presumed to generate a significant number of additional trips (i.e., the site is expected to generate 25 or more trips during the AM and/or PM peak hours or 250 or more daily trips), while those that will not provide analysis consistent with the City Transportation Analysis Letter (TAL) requirements. The key difference between the two levels of analysis is that the TAL does not require peak hour intersection operations to be analyzed. Peak hour intersection operations will not be degraded by proposed developments that generate fewer than 25 AM and/or PM peak trips since these trips are distributed system wide and do not all impact a single location, including intersections and roadway segments. Therefore, these proposed developments are consistent with the approval criteria 16.08.160.F (i.e., adopted intersection mobility standards) and only need to provide a level of analysis that is consistent with the other specified approval criteria included in the Canby Municipal Code 16.08.160, and the various neighborhood traffic and pedestrian and bicycle livability measures.

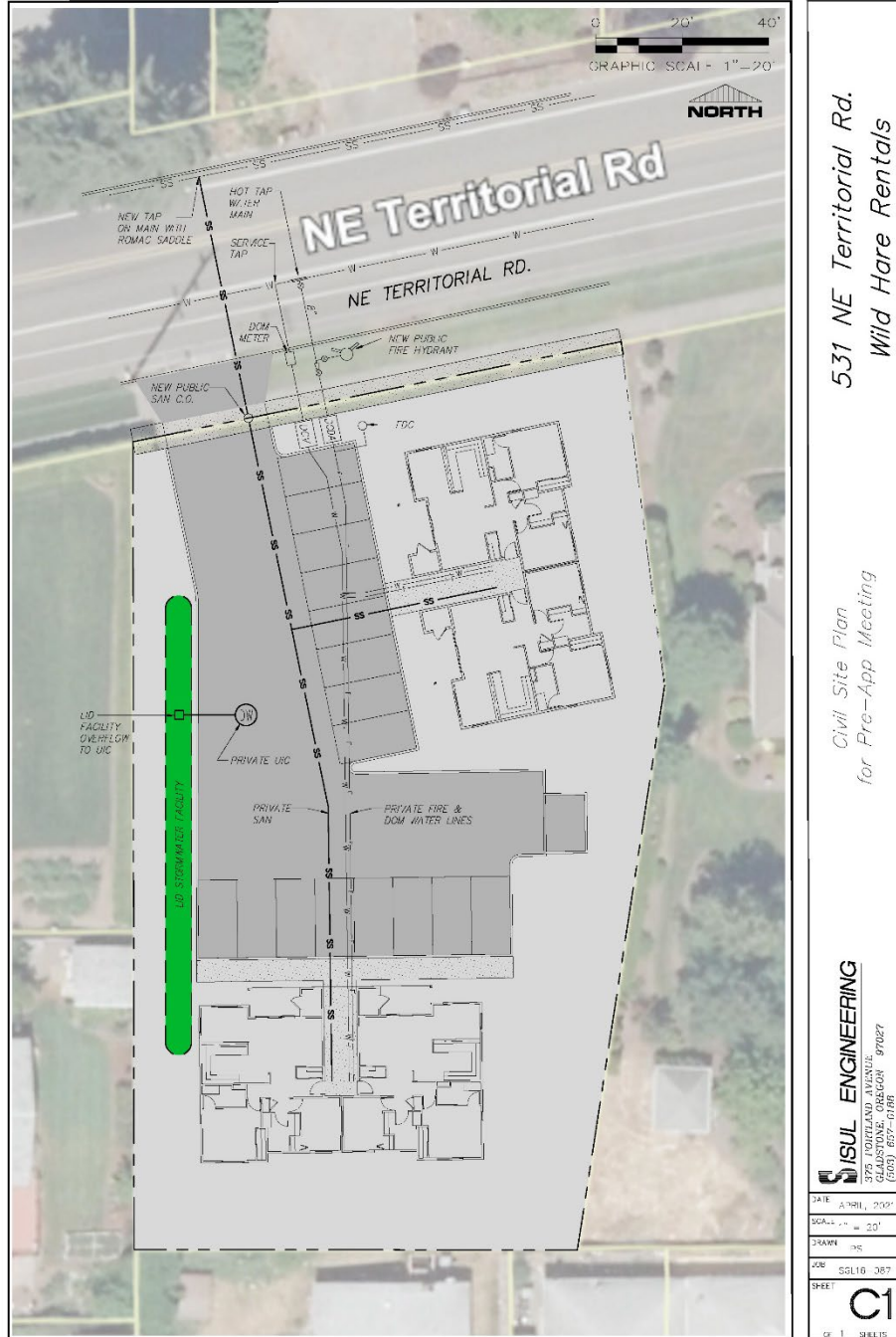
The proposed development will not result in a significant increase of additional trips (i.e., the site is expected to generate 25 or fewer trips during the AM and/or PM peak hours and fewer than 250 daily trips), so this analysis is consistent with the City TAL requirements as documented in the project scoping memorandum¹.

¹ Scope of Work – Canby Territorial Fourplexes, August 6th, 2021.

PROJECT DESCRIPTION

The proposed project is located on the south side of NE Territorial Road, between NE Laurelwood Circle and N Manzanita Street in Canby, Oregon. The proposed site includes an existing single-family house and auxiliary buildings, all of which will be removed. The proposed development is for 2 multi-family fourplex residential buildings, totaling 8 dwelling units. The site is currently zoned for R-2 (High-Density Residential). The proposed site plan can be seen in Figure 1.

FIGURE 1: SITE PLAN



531 NE Territorial Rd.
Wild Hare Rentals

Civil Site Plan
for Pre-App Meeting

ISUL ENGINEERING
3721 FORELAND AVENUE
GLADSTONE, OREGON 97027
(503) 657-0188

DATE	APRIL, 2021
SCALE	1" = 20'
DRAWN	MS
JOB	SSL16-087
SHEET	C1
	OF 1 SHEETS

SITE ACCESS AND CIRCULATION

SITE ACCESS

Access to the site is proposed via one existing full-access driveway connecting to NE Territorial Road. The City of Canby has jurisdiction of NE Territorial Road and applies a functional classification of “Collector” to it.

ACCESS SPACING

City standards require that accesses along a Collector must be a minimum of 100 feet from roadways or other driveways along the same side of the street². The existing driveway that is proposed to be maintained to NE Territorial Road is approximately 140 feet from NE Laurelwood Circle to the west and approximately 150 feet from the nearest driveway to the east, complying with the spacing standard.

SIGHT DISTANCE

The sight triangle at intersections should be clear of objects (large signs, landscaping, parked cars, etc.) that could potentially limit vehicle sight distance. In addition, all proposed accesses should meet AASHTO sight distance requirements as measured from 15 feet back from the edge of pavement³.

The existing driveway to NE Territorial Road would require a minimum of 390 feet of sight distance based on a 35-mph design speed. Preliminary sight distance evaluation from the driveway indicates that the connection would be expected to provide sight distance of over 600-feet looking to the east and west.

Prior to occupancy, sight distance at the access point will need to be verified, documented, and stamped by a registered professional Civil or Traffic Engineer licensed in the State of Oregon.

SITE FRONTAGE

The proposed site has frontage along NE Territorial Road. As documented earlier, the City of Canby has jurisdiction over NE Territorial Road and applies a functional class of “Collector” to it.

NE Territorial Road is improved to meet the City’s cross-section standard for Collector streets, with one travel lane in each direction and bike lanes. The south side of NE Territorial Road along the frontage of the proposed site also includes on street parking, and sidewalk behind a landscape strip. The existing roadway can adequately accommodate the additional vehicle, pedestrian, and bicycle traffic expected.

² Canby Municipal Code 16.46.030. Retrieved October 2021.

³ AASHTO – *Geometric Design of Highways and Streets*, 7th edition, 2018.

INTERNAL SITE CIRCULATION

The proposed site plan (shown earlier in Figure 1) shows one proposed driveway connecting to the existing access to NE Territorial Road. This driveway will be full access, allowing for ingress/egress to the on-site parking areas for vehicles and bicycles. The proposed driveway access can adequately accommodate vehicle and bicycle circulation to NE Territorial Road and internally within the site.

The site plan also includes proposed sidewalk connections from the building entrances to the parking areas, however, it does not include a sidewalk connection to NE Territorial Road. City standard requires a sidewalk connection from the building entrances to the public street that provides access⁴. A 5-foot walkway should be constructed adjacent to the parking stalls for the proposed north building, to connect to the sidewalk on NE Territorial Road.

TRIP GENERATION

The amount of new vehicle trips generated by the proposed use was estimated using the trip generation estimates based on ITE Code 220 (Low-Rise Multifamily Housing) using the latest version of the ITE Trip Generation Manual (10th Edition). Trip generation estimates for the proposed development are provided for daily, morning, and evening peak hours, and are summarized in Table 1. The proposed site will be expected to generate 4 a.m. peak trips, 4 p.m. peak trips, and 59 daily trips. The estimated trip generation of the proposed site will not be expected to result in an increase significant enough to degrade peak hour intersection operations and is therefore consistent with the transportation approval criteria 16.08.160.F (i.e., adopted intersection mobility standards).

TABLE 1: TRIP GENERATION FOR THE PROPOSED PROJECT

LAND USE (SIZE)	AM PEAK			PM PEAK			DAILY TRIPS
	IN	OUT	TOTAL	IN	OUT	TOTAL	
MULTIFAMILY HOUSING (LOW RISE) - ITE CODE 220 (8 DWELLING UNITS)	1	3	4	2	2	4	59

TRIP DISTRIBUTION AND ASSIGNMENT

The estimated site generated traffic for the proposed project was distributed and assigned to the nearby arterial and collector roadway network. These nearby roadways can accommodate the additional trips expected. A summary of the peak project trips added to nearby intersections is shown in Table 2. As shown, fewer than 3 peak trips will be expected to be added to nearby non-highway intersections, and fewer than 3 peak trips at highway intersections. This includes an expected 3 additional a.m. peak trips along OR 99E, 4 along NE Territorial Road east/west of the

⁴ Canby Municipal Code 16.10.070.B.5.

project site, and 3 along N Pine Street, and 2 additional p.m. peak trips along OR 99E, 4 along NE Territorial Road east/west of the project site, and 2 along N Pine Street.

In total, approximately 24 additional daily trips will be expected along OR 99E, about 59 additional daily trips along NE Territorial east/west of the project site, about 32 additional daily trips on N Pine Street, 7 additional daily trips along N Ivy Street and about 6 additional daily trips along N Redwood Street.

TABLE 2: PEAK HOUR PROJECT TRIPS ADDED

INTERSECTION	TRIPS ADDED BY MOVEMENT												TOTAL PEAK TRIPS
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	
AM PEAK HOUR													
S IVY STREET/OR 99E	0	0	0	0	0	0	0	1	0	0	2	0	3
S PINE ST/OR 99E	0	0	0	2	0	0	1	0	0	0	0	0	3
SEQUOIA PARKWAY/OR 99E	0	0	0	0	0	0	0	0	0	0	0	0	0
NE TERRITORIAL ROAD/N IVY STREET	0	0	0	0	0	0	0	0	0	0	1	0	1
NE TERRITORIAL ROAD/N PINE STREET	1	0	0	0	0	0	0	0	2	0	0	0	3
NE TERRITORIAL ROAD/N REDWOOD STREET	0	0	0	0	0	0	0	0	0	0	0	0	0
PM PEAK HOUR													
S IVY STREET/OR 99E	0	0	0	0	0	0	0	1	0	0	1	0	2
S PINE ST/OR 99E	0	0	0	1	0	0	1	0	0	0	0	0	2
SEQUOIA PARKWAY/OR 99E	0	0	0	0	0	0	0	0	0	0	0	0	0
NE TERRITORIAL ROAD/N IVY STREET	0	0	0	0	0	0	0	1	0	0	1	0	2
NE TERRITORIAL ROAD/N PINE STREET	1	0	0	0	0	0	0	0	1	0	0	0	2
NE TERRITORIAL ROAD/N REDWOOD STREET	0	0	0	0	0	0	0	0	0	0	0	0	0

NEIGHBORHOOD TRIPS

A neighborhood trip impact is triggered when a proposed site adds 30 peak trips or 300 daily trips to a residential local street⁵. As shown earlier in Table 1, the proposed site is expected to generate 4 or fewer peak trips, and 59 daily trips, well under this standard. The proposed site will access directly to an adjacent collector street (i.e., NE Territorial Road).

ACTUAL TRAFFIC VOLUME GROWTH COMPARED TO TSP FORECAST

The traffic volumes resulting from the proposed project at nearby intersections were compared to existing traffic volumes, as well as the projected volumes from the City’s Transportation System Plan (TSP). This analysis shows how actual traffic volume growth on the roadway network compares to conditions that were planned for with improvement projects in the TSP.

As shown in Table 3, growth at the intersections has been similar to what the TSP planned for, with realized growth rates within 2 percent of the TSP forecast at each intersection.

TABLE 3: ACTUAL TRAFFIC VOLUME GROWTH COMPARED TO TSP FORECAST (P.M. PEAK)

INTERSECTION*	CURRENT VOLUME (2021)	ESTIMATED SITE TRIPS	TOTAL VOLUME (2021)	TSP VOLUME (2009) **	TSP ESTIMATED FUTURE VOLUME (2030) **	TSP FORECASTED ANNUAL GROWTH RATE (2030-2009)	REALIZED ANNUAL GROWTH RATE (2021-2009)
S IVY STREET/OR 99E	3,620	2	3,622	2,909	3,550	1%	2%
S PINE ST/OR 99E	3,108	2	3,110	2,222	4,030	4%	3%
HAINES ROAD/OR 99E	2,722	0	2,722	2,020	2,890	2%	3%
SEQUOIA PARKWAY/OR 99E	3,009	0	3,009	1,938	3,940	5%	5%
NE TERRITORIAL ROAD/N REDWOOD STREET	717	0	717	530	1,080	5%	3%

* NE Territorial Rd/N Ivy St and NE Territorial Rd/N Pine St are not study intersections in the City of Canby TSP, and therefore are not included in this analysis.

**Source: 2009 TSP Existing Volumes; 2030 TSP Financially Constrained Volumes

⁵ Canby Municipal Code 16.08.150.H.

Improvement Project Contribution

The City's TSP includes improvement projects that are needed to accommodate all the growth that was forecasted to occur through 2030. These projects are included on the City's Transportation System Development Charge improvement list, which is the one of the main funding mechanisms for implementing these TSP projects. Every new development in the City pays its proportional share of these improvements based on the actual development size. Accordingly, this proposed project will contribute its proportional share towards these System Development Charge improvement projects. This includes all projects from the TSP that are needed to accommodate the forecasted growth outlined in Table 3.

APPROVAL CRITERIA AND LIVABILITY MEASURES

The following sections summarize how the proposed project adequately addresses the transportation approval criteria and the livability measures for neighborhood traffic and pedestrian and bicycle circulation.

TRANSPORTATION APPROVAL CRITERIA

The Canby Municipal Code 16.08.160 includes transportation approval criteria that each proposed development must satisfy. This includes criteria B, D, E, and F, as summarized below. While Criteria A, C and E.3 are not transportation related criteria, they are still applicable for approval. See the respective documents or plans for more details on how this proposed development meets Criteria A, C and E.3.

A. ADEQUATE STREET DRAINAGE, AS DETERMINED BY THE CITY.

Non-transportation related criteria. See respective project documents/plans for information.

B. SAFE ACCESS AND CLEAR VISION AT INTERSECTIONS, AS DETERMINED BY THE CITY.

The existing driveway that is proposed to be maintained to NE Territorial Road is approximately 140 feet from NE Laurelwood Circle to the west and approximately 150 feet from the nearest driveway to the east, complying with the spacing standard.

Prior to occupancy, sight distance at the access point will need to be verified, documented, and stamped by a registered professional Civil or Traffic Engineer licensed in the State of Oregon. Preliminary sight distance evaluation from the driveway indicates that the connection would be expected to provide sight distance of over 600-feet looking to the east and west.

C. ADEQUATE PUBLIC UTILITIES, AS DETERMINED BY THE CITY.

Non-transportation related criteria. See respective project documents/plans for information.

D. ACCESS ONTO A PUBLIC STREET WITH THE MINIMUM PAVED WIDTHS AS STATED IN SUBSECTION E BELOW.

Access to the site is proposed via one existing driveway connecting to NE Territorial Road. This driveway will be full access, allowing for ingress/egress to the on-site parking areas for vehicles and bicycles. The proposed driveway access can adequately accommodate vehicle and bicycle circulation to NE Territorial Road and internally within the site.

The site plan also includes proposed sidewalk connections from the building entrances to the parking areas, however, it does not include a sidewalk connection to NE Territorial Road. City standard requires a sidewalk connection from the building entrances to the public street that provides access. A 5-foot walkway should be constructed adjacent to the parking stalls for the proposed north building, to connect to the sidewalk on NE Territorial Road.

E. ADEQUATE FRONTAGE IMPROVEMENTS AS FOLLOWS:

- 1. For local streets and neighborhood connectors, a minimum paved width of 16 feet along the site's frontage.**

Not applicable- NE Territorial Road is a collector street.

- 2. For collector and arterial streets, a minimum paved width of 20 feet along the site's frontage.**

NE Territorial Road is improved to meet the City's cross-section standard for collector streets, with one travel lane in each direction and bike lanes. The south side of NE Territorial Road along the frontage of the proposed site also includes on street parking, and sidewalk behind a landscape strip.

- 3. For all streets, a minimum horizontal right-of-way clearance of 20 feet along the site's frontage.**

Non-transportation related criteria. See respective project documents/plans for information.

F. COMPLIANCE WITH MOBILITY STANDARDS IDENTIFIED IN THE TSP. IF A MOBILITY DEFICIENCY ALREADY EXISTS, THE DEVELOPMENT SHALL NOT CREATE FURTHER DEFICIENCIES.

The proposed development will generate no more than 4 peak hour trips and 59 daily trips and met criteria for a TAL level of analysis. Peak hour intersection operations will not be degraded by proposed developments that generate fewer than 25 AM and/or PM peak trips since these trips are distributed system wide and do not all impact a single location, including intersections and roadway segments. Proposed developments that meet the TAL

criteria are deemed consistent with this approval criteria (i.e., adopted intersection mobility standards).

LIVABILITY CRITERIA

In addition, each project must comply with livability measures for neighborhood traffic and pedestrian and bicycle circulation. A summary is provided below for the proposed project.

NEIGHBORHOOD TRAFFIC

The proposed site is expected to generate 4 or fewer peak trips, and 59 daily trips, well under the neighborhood trip impact standard. The proposed site will access directly to an adjacent collector street (i.e., NE Territorial Road).

PEDESTRIAN AND BICYCLE CIRCULATION

The proposed site has frontage along NE Territorial Road, which includes bike lanes and a sidewalk. The existing roadway can adequately accommodate the additional pedestrian and bicycle traffic expected. A 5-foot walkway should be constructed to connect the proposed internal site walkways, with the sidewalk on NE Territorial Road.

FINDINGS

The proposed site adequately addresses each transportation approval criteria and livability measure. The project is estimated to generate an additional 4 trips in the morning peak period, 4 trips in the evening peak period and 59 daily trips. The adjacent collector street (i.e., NE Territorial Road) and most nearby intersections will maintain a level of traffic volume that is consistent with their classifications and planned growth from the TSP. This proposed project will contribute its proportional share towards System Development Charge improvement projects from the TSP that are needed to accommodate the forecasted growth.

The proposed site includes one existing full-access driveway connecting to NE Territorial Road that will provide access for vehicles and bicycles. NE Territorial Road is improved to meet the City's cross-section standard for collector streets, with one travel lane in each direction and bike lanes. The south side of NE Territorial Road along the frontage of the proposed site also includes on street parking, and sidewalk behind a landscape strip. The existing roadway can adequately accommodate the additional vehicle, pedestrian, and bicycle trips expected.

Access spacing standards are met for the existing driveway. Prior to occupancy, sight distance at the access point will need to be verified, documented, and stamped by a registered professional Civil or Traffic Engineer licensed in the State of Oregon. Preliminary sight distance evaluation from the driveway indicates that adequate sight distance would be expected looking to the east and west.

If you have any questions, please feel free to call or email.