

Date:	September 22, 2023
To:	Stephanie Reid, PE, Public Works Director Casey Knecht, PE, ODOT Region 2
From:	Joe Bessman, PE
Project Reference No.:	1881
Project Name:	Lincoln City Mental Health Housing/Clinic Transportation Review



This memorandum serves as the Transportation Scoping Report for a proposed mental health housing development and clinic in Lincoln City, Oregon, west of the US 101/NE Devils Lake Road intersection, with a property address of 4225 N Highway 101 (map tax lot 071102B00100000). The location of the site is shown in Figure 1 for area context.

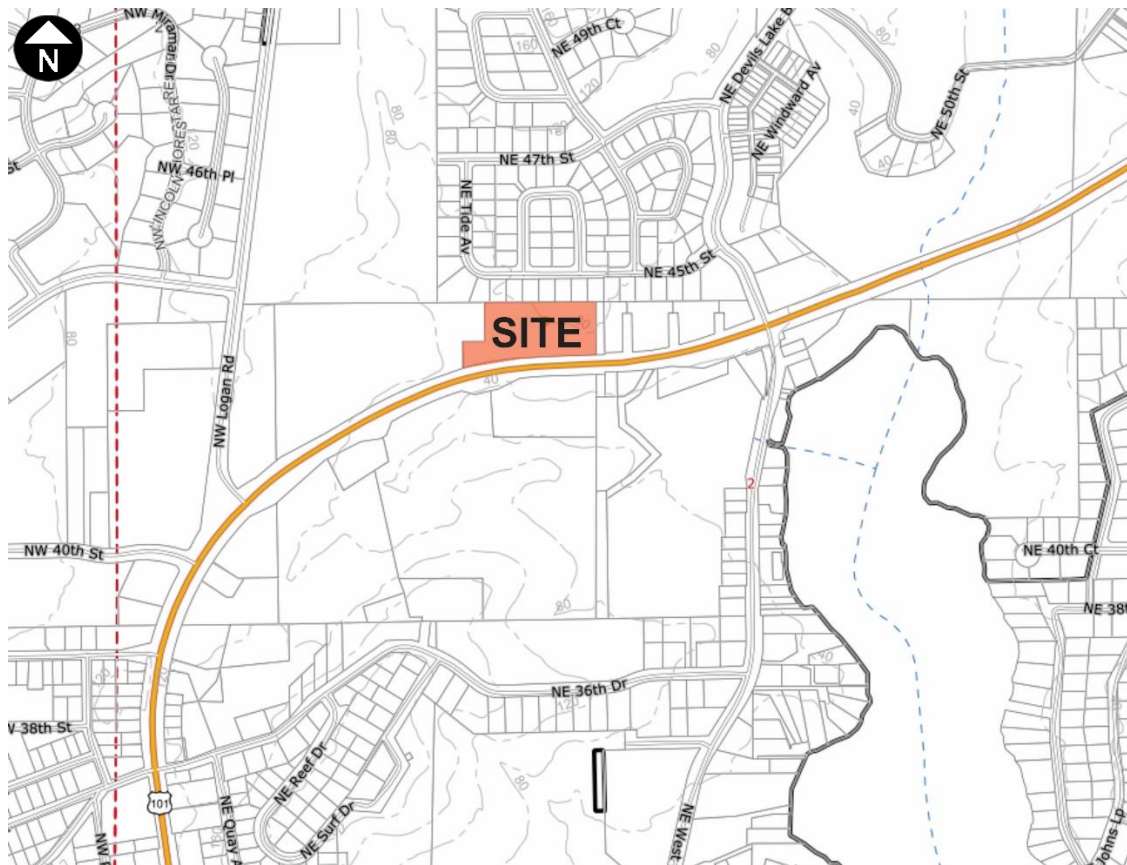


Figure 1. Site Vicinity Map. Source: Lincoln County GIS.

The site is zoned and designated within the City’s Comprehensive Plan as *General Commercial (C-1)*, which allows the proposed clinic and mental health housing uses outright.

## PROJECT DESCRIPTION

The proposed development will replace an existing single-family home that is located within the site. The property is located along a slope, increasing in elevation by about 30 feet from the highway toward the subdivision that is located north of the property and toward the undeveloped lands to the immediate west, beyond which is the Lighthouse Square retail center. On the opposite side of the highway directly south is the Wild Flower Grill and a Farmers Insurance office.

The proposed development will retain the location of the existing driveway access from the highway, subdividing the property into three separate tax lots, as shown in Figure 2. The southwestern tax lot, which will be the first access point encountered after exiting the highway, will include the 5,000 square-foot clinic. A surface parking area will be graded onto this site providing approximately 23 perpendicular parking stalls.

Parcel 2, located north of the clinic will include 28 housing units for severe and persistent mental care. The residents of this housing do not drive, and the consolidated parking (approximately 20 stalls) shown in the site layout is provided for staff, services, and visitors.

Parcel 3 is provided for a future multifamily site within approximately 1.49 acres. This site contemplates development with approximately 30 to 40 multifamily units, with the specific unit count pending detailed design plans. The tentative plans include about 57 parking stalls with a “T” turnaround design at the eastern terminus (not pictured), but further refinement of the specific unit and parking layout will occur in the future. For purposes of this transportation assessment, the maximum contemplated density of 40 units will be assumed within a 2-3 story building.



Figure 2. Proposed Subdivision Layout. Source: Open Concept Architecture

## TRIP GENERATION

Consistent with City policy, trip generation estimates were prepared for the development based on the most current edition of the Institute of Transportation Engineers' (ITE) standard reference *Trip Generation, 11<sup>th</sup> Edition*. Credits for the existing single-family residence were applied to these estimates. For the proposed uses, the following ITE Land Use classifications were assigned:

**ITE 630 - Clinic:** A clinic is a facility that provides limited diagnostic and outpatient care but is unable to provide prolonged in-house medical and surgical care. A clinic may have a lab facility and supporting pharmacy but typically does not have the equipment and medical personnel available at an urgent care site. A clinic typically offers a wide range of services which makes it distinct from a medical office building that typically houses specialized or individual physicians.

**ITE 223 – Affordable Housing (Special Needs):** Affordable housing includes all multifamily housing that is rented at below market rate to households that include at least one employed member. Eligibility to live in affordable housing can be a function of limited household income and resident age. Land Use Subcategory Data are presented for three subcategories for this land use: (1) sites with income limitations for its tenants (denoted as income limits in the data plots), (2) sites with both minimum age thresholds and income limitations for its tenants (denoted as senior in the data plots), and (3) sites designed for and occupied by residents with special needs, such as persons with physical and mental impairments, single mothers, recovering addicts and others living in a group setting.

As noted in the description, the proposed land use classification is a specialized form of affordable housing. This subset of ITE data is limited to sites that are located within *Dense Multi-Use Urban* areas rather than the *General Suburban/Urban* setting that this site in Lincoln City would be more accurately described with. The trip rates provided within this report were increased using the trip ratio between multifamily housing within these two varying settings, resulting in trip rates that are approximately 70% higher than those reported in the ITE manual.

**ITE 220 – Multifamily Housing (Low-Rise):** Low-rise multifamily housing includes apartments, townhouses, and condominiums located within the same building with at least three other dwelling units and that have two or three floors (levels). Various configurations fit this description, including walkup apartment, mansion apartment, and stacked townhouse.

- A walkup apartment typically is two or three floors in height with dwelling units that are accessed by a single or multiple entrances with stairways and hallways.
- A mansion apartment is a single structure that contains several apartments within what appears to be a single-family dwelling unit.
- A fourplex is a single two-story structure with two matching dwelling units on the ground and second floors. Access to the individual units is typically internal to the structure and provided through a central entry and stairway.
- A stacked townhouse is designed to match the external appearance of a townhouse. But, unlike a townhouse dwelling unit that only shares walls with an adjoining unit, the stacked townhouse units share both floors and walls. Access to the individual units is typically internal to the structure and provided through a central entry and stairway.

**Table 1. Estimated Trip Generation (Source: ITE Trip Generation, 11<sup>th</sup> Edition)**

Land Use	ITE Code	Size (Units)	Weekday Daily Trips	Weekday PM Peak Hour		
				Total	In	Out
Trip Credits (Existing Uses)						
Primary Dwelling Unit <i>Single-Family Detached Housing</i>	210	-1 Unit	-9 <i>9.43 Trips/Unit</i>	-1 <i>0.94/Unit</i>	-1 <i>63%</i>	0 <i>37%</i>
Proposed Uses						
Clinic <i>Average Rate Equation</i>	630	5,000 SF	188 <i>37.6/KSF</i>	18 <i>3.69/KSF</i>	6 <i>30%</i>	12 <i>70%</i>
Affordable Housing <i>(Special Needs)<sup>1</sup></i>	223	28 Residents	31 <i>0.79*1.7/Res</i>	2 <i>0.05*1.7/Res</i>	1 <i>50%</i>	1 <i>50%</i>
Multifamily Housing (Low-Rise) <i>Average Rate Equation</i>	220	Up to 40 Units	270 <i>6.74/Unit</i>	20 <i>0.51/person</i>	13 <i>63%</i>	7 <i>37%</i>
<b>Total Trips</b>			<b>480</b>	<b>39</b>	<b>19</b>	<b>20</b>

<sup>1</sup>The area setting for Affordable Housing (Special Needs) is only available for dense urban areas. These values were adjusted using the weekday p.m. peak hour trip generation ratio of multifamily housing within General Urban/Suburban settings (0.51/unit) to Dense Urban (0.30/unit), or a factor of 1.7.

## TRIP DISTRIBUTION AND ASSIGNMENT

Trips from the site will be reliant on the US 101 highway system as the only connection to the public street network. Based on review of historical traffic counts within Volume 2 of the City’s Transportation System Plan, it is expected that travel from the site will follow similar patterns to those experienced at West

Devil's Lake Road, with about 65 percent of the site-generated trips traveling to and from the west and 35 percent traveling to the east. Figure 3 illustrates the estimated trip distribution pattern and assignment at the site access driveway onto US 101.

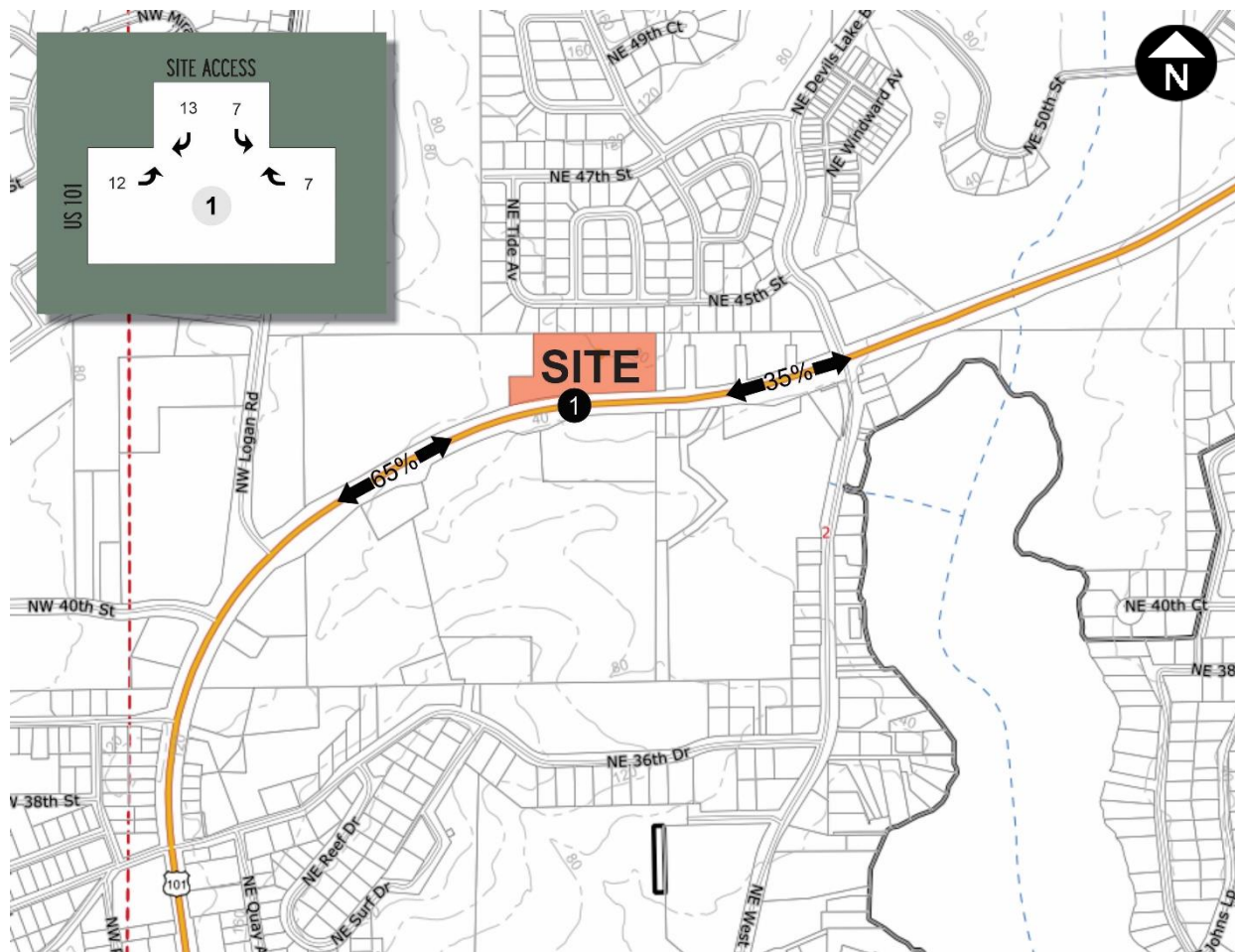


Figure 3. Estimated trip distribution and assignment, weekday p.m. peak hour.

## SAFETY REVIEW

A safety review was conducted based on review of historical crash data as well as field observations of the site. The most recent five years of crash data available within the ODOT Crash Analysis Reporting System (CARS) database extends from January 2017 through December 2021. In Oregon, crashes that are required for reporting involve at least one motor vehicle and result in \$2,500 or more in property damage (increased from \$1,500 in 2018), or any level of personal injury.

The crash records indicate that there have been seven crashes in the five-year review period adjacent to the project, as described below.

- A single-vehicle fixed-object crash was reported in December 2021 at 2:00 p.m. The crash records indicate that the motorist was inattentive and struck a street sign or utility pole. The database further indicates that the motorist was improperly using the median or shoulder. The collision resulted in minor injuries.

- A rear-end collision was reported in June 2021 at 11:00 a.m. The crash records indicate that one motorist was stopped in traffic when they were struck. The crash was not investigated by police and no injuries were reported.
- A rear-end collision was reported at noon on November 22, 2019. The crash records cite that a non-contacting vehicle was involved in the collision, with careless driving and inattention cited as crash causes. The collision resulted in minor/possible injuries.
- A non-injury turning movement crash was reported at 9:00 p.m. on August 2, 2017 when an inbound motorist headed toward the Wild Flower Grill failed to yield the right-of-way.
- A sideswipe collision was reported on September 17, 2017 at 10:00 a.m. The collision involved two vehicles traveling in the same direction. The collision resulted in minor/possible injuries.
- A rear-end collision occurred at 11:00 a.m. on August 16, 2019. The crash records cite a non-contact vehicle that led to the collision. Only minor/possible injuries were reported.
- A rear-end collision was reported at 11:00 a.m. on March 6, 2021 that resulted in minor/possible injuries. This crash also cited a non-contact vehicle as the precipitating event.

The reported crashes are primarily rear-end collisions, which are likely attributable to congested area conditions on US 101. Based on preliminary review, it appears that trimming and removal of vegetation around the horizontal curve could help improve sight lines and driver expectation. The TSP does identify intersection improvements on the highway at West Devils Lake Road and Logan Street, which could help alleviate queuing.

It was also noted that the site frontage is not included within ODOT's Safety Priority Index System (SPIS).

### Intersection Sight Distance

The shared access to the site will connect to US 101 along flat section of the the highway with horizontal curvature. Sight distance information and requirements are based on the standard reference *A Policy on Geometric Design of Highways and Streets, 7<sup>th</sup> Edition* published by the American Association of State Highway and Transportation Officials (AASHTO) in 2018, commonly referred to as the *Green Book*. Intersection sight distance was reviewed at the critical highway connection to ensure that the site can adequately support the recommended sight lines.

For minor-street stop-control intersections onto a two-lane highway, intersection sight triangles are based on AASHTO guidance cited within Condition B2 (right-turn from minor road) of the *Green Book*. All distances are measured from a vertex point located 14.5 feet from the major-road travel way along the center of the approaching travel lane, accounting for comfortable positioning distance from the travel way (6.5 feet) and the distance from the front of the vehicle to the driver eye (8.0 feet). The assumed eye height is 3.5 feet above the departing road for passenger vehicles. The object height is also 3.5 feet above the major road, providing enough space on the approaching vehicle to recognize it. Based on a posted speed of 45 mph and level terrain, Figure 5 illustrates the recommended intersection sight distance measurements required at the roadway connection to the highway.

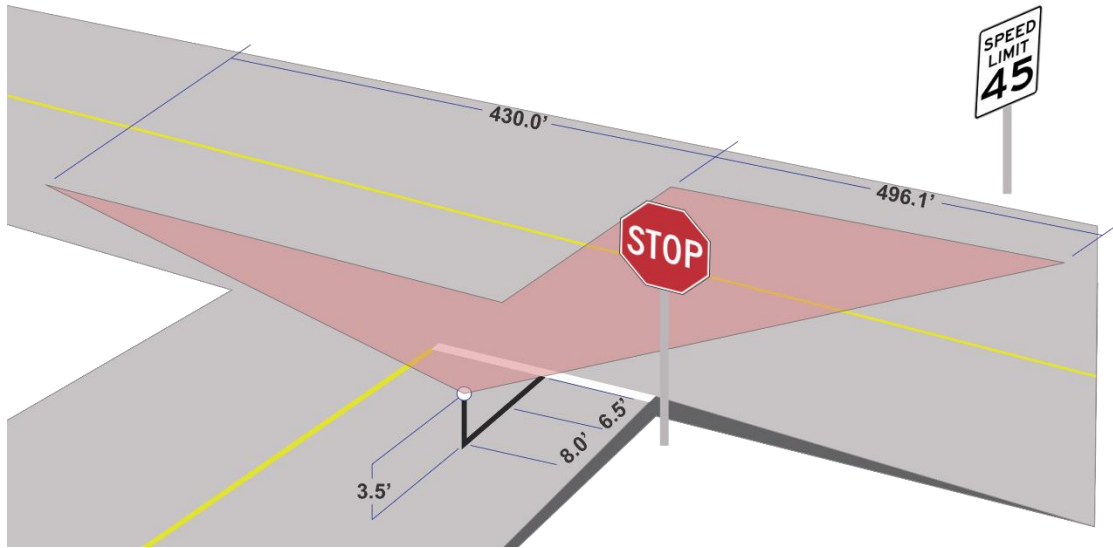


Figure 5. Recommended Intersection Sight Distance onto US 101.

Figures 6 and 7 illustrate the current sight lines onto the highway. For northbound US 101 vehicles this distance is reached at the southern edge of the Lighthouse Square entrance, and for southbound US 101 vehicles this dimension is reached just beyond the eastern edge of the Farmers Insurance building. Figures 6 and 7 illustrate the current sight lines.



Figure 6. Existing view from the residential driveway facing toward northbound US 101. The figure shows that the full width of the Lighthouse Square access is visible; trimming of vegetation along the curve and relocation of the tourist information sign would be beneficial in further improving these views due to the slight incline toward the southwest.



Figure 7. Existing view of southbound US 101. The shows that the embankment limits existing sight lines, and minor trimming and/or grading could be beneficial in further improving these views.

The existing sight lines comply with the minimum AASHTO intersection sight distance recommendations for the posted speed of the highway, but also highlights that these views could be improved with trimming of vegetation, minor grading along the frontage berm, and relocation of a tourist information sign.

### Stopping Sight Distance

ODOT Division 051 requires that stopping sight distance be provided equivalent to ten times the posted speed (45 miles per hour). This would indicate a 450-foot stopping sight distance in either direction, with is generally similar to the intersection sight distance dimensions shown above, and the existing stopping sight distance currently comply with these requirements. Figure 8 shows that northbound US 101 travelers situated south of the Lighthouse Square access (500-feet is shown in the figure) can see the access, but have their view of motorists and the access filtered by the tourist information sign due to the slight downgrade on the approach. It is recommended that this sign be relocated outside of the horizontal curve to avoid this impact to sight lines.



Figure 8. Stopping sight distance from 500' south of the access. The access is visible, but partially blocked by the tourist information sign.

## TRAFFIC STUDY REQUIREMENTS

Lincoln City's Transportation Impact Analysis requirements are contained within Section 17.52.300 of the City's Development Code. This requires elevation of the study in the following circumstances:

- An amendment to the Lincoln City Comprehensive Plan or Zoning Map.  
**Response:** This does not occur with the subject application.
- A new direct property approach road to US 101.  
**Response:** The proposed application retains the existing residential driveway approach to US 101. Accordingly, a new access to US 101 is not proposed.
- Likely generation of 50 or more p.m. peak hour trips on US 101, or 100 or more p.m. peak hour trips on the local transportation system.  
**Response:** Per Table 1, the project does not meet this threshold as it generates less than 50 weekday p.m. peak hour trips.
- An existing or proposed access driveway that does not meet minimum spacing or sight distance requirements, or a driveway located where vehicles entering or leaving the property are restricted, or such vehicles are likely to queue or hesitate at an approach or access connection, thereby creating a safety hazard.  
**Response:** As addressed within the intersection sight distance/stopping sight distance review, sight lines are minimally adequate but could be improved with vegetation clearing.
- A change in internal traffic patterns that may cause safety problems, such as back-up onto the highway or traffic crashes in the approach area.  
**Response:** These conditions were not identified within the site plan layout. The circulation allows vehicles to park, maneuver, and face forward when entering the highway.

In addition to these criteria, ODOT has its own separate Change of Use criteria that it applies to properties as outlined within Division 051 for *Change of Use*, as outlined within Oregon Administrative Rule 734-051-3020, which governs changes to a private approach to a state highway. Where a Change of Use occurs, a new application is required for the purpose of permitting connections to a highway.

- The number of peak hour trips increases by 500 trips or more from that of the property's prior use and the increase represents a 20 percent or greater increase in the number of peak hour trips from that of the property's prior use.  
**Response:** As outlined above, since the site generates only 39 weekday p.m. peak hour trips this criterion is not met.
- The average daily trips increases by five hundred trips or more from that of the property's prior use and the increase represents a twenty percent or greater increase in the average daily trips from that of the property's prior use.  
**Response:** As shown, with the maximum density assumed for Parcel 3 this threshold is not met, with the site producing +480 weekday daily trips in comparison to the existing residence.
- The daily use of a connection increases by ten or more vehicles with a gross vehicle weight rating of twenty six thousand pounds or greater.  
**Response:** With the proposed institutional/residential uses there are no anticipated increase in the number of heavy trucks traveling to this site.
- ODOT demonstrates that safety or operational concerns related to the connection are occurring as identified in OAR 734-051-4020.  
**Response:** ODOT has not identified any safety or operational concerns at the access location, but has noted that grading around the access and removal of vegetation may be required to ensure clear sight lines are provided for site egress. As documented in this report, this is recommended as part of this project.
- Stopping sight distance of ten times the speed limit or the designated posted speed is required.  
**Response:** The posted speed in the area surrounding the driveway is 45 miles per hour, requiring 450 feet of stopping sight distance which is currently available in both directions. These sight lines can be further improved with vegetation trimming and relocation of the tourist information sign.

Based on the criteria identified above, a formal traffic study is not required with this application based on the trip generation potential of the site and the safety information reviewed herein. Accordingly, only this trip generation letter is provided to support this application.

## FINDINGS AND RECOMMENDATIONS

This report outlines the trip generation potential of the proposed Lincoln City Mental Health Housing/Clinic development and how this project impacts the adjacent transportation system. As the overall change in site trip generation potential is below 500 weekday daily trips and 50 weekday p.m. peak hour trips, the thresholds for a Transportation Impact Analysis or Change of Use process are not met. The site currently complies with AASHTO intersection sight distance recommendations and ODOT stopping sight distance recommendations, but could be further improved with vegetation trimming and/or minor re-grading of the berm east of the driveway and relocation of the Tourist Information sign outside of the horizontal curve.

We request that the City and ODOT review this trip generation letter and provide concurrence on the materials presented. Thank you for your review and assistance, I can be reached at (503) 997-4473 or via email at [joe@transightconsulting.com](mailto:joe@transightconsulting.com) if you have any questions or feedback.