



Date:	May 18, 2021
To:	Dana Nichols, City of Bandon
From:	Joe Bessman, PE
Project Reference No.:	1545
Project Name:	Seabird Drive Multifamily Transportation Impact Analysis



This memorandum provides a Transportation Impact Analysis (TIA) for the proposed multifamily residential project located near the southwest corner of the Highway 101/Seabird Drive intersection in Bandon, Oregon. This Transportation report follows the prior submittal of scoping materials and discussions with staff.

## PROJECT OVERVIEW

The subject property is located on the south end of Bandon west of Highway 101 on Seabird Drive, Map Tax Lot 28S15W36 1420. This approximately 3.13-acre property is zoned C-2 for *General Commercial* uses. Per Municipal Code 17.44.30 multifamily housing is allowed as a conditional use in C-2 zoning in accordance with Chapter 17.92, which specifies the conditions and is discussed in more detail within this report.

Figure 1 shows the location of the site on the south side of Seabird Drive. It is currently undeveloped and has a single access on the east end of the site to Seabird Drive. The site is surrounded by primarily undeveloped land to the north, west and south. To the east of the site there are commercial developments scattered up and down Highway 101. Further west, there are multiple subdivision developments that are in the process of being built. The proposed multifamily development will be consistent with the transitioning character of the roadway from commercial development at the highway to low density residential west of the site.

The site was previously considered for retail use. A traffic study was prepared in 2006 by Lancaster Engineering for 83,500 square-feet of retail that resulted in an additional 569 weekday p.m. peak hour driveway trips, 95-percent of which impacted the Highway 101 intersection with Seabird Drive. Due to the level of projected trips, the project was required to signalize the Highway 101/Seabird Drive intersection, with the project and other area projects providing pro-rata share contributions for signalization. However, due to the project costs and the pre-recession timing the project did not proceed forward. As was shown during the scoping of the multifamily project and as will be discussed further in this report, the proposed multifamily development generates about 5-percent of the peak hour trips previously assessed to the retail use and will not require the same level of capacity improvements to support site development.

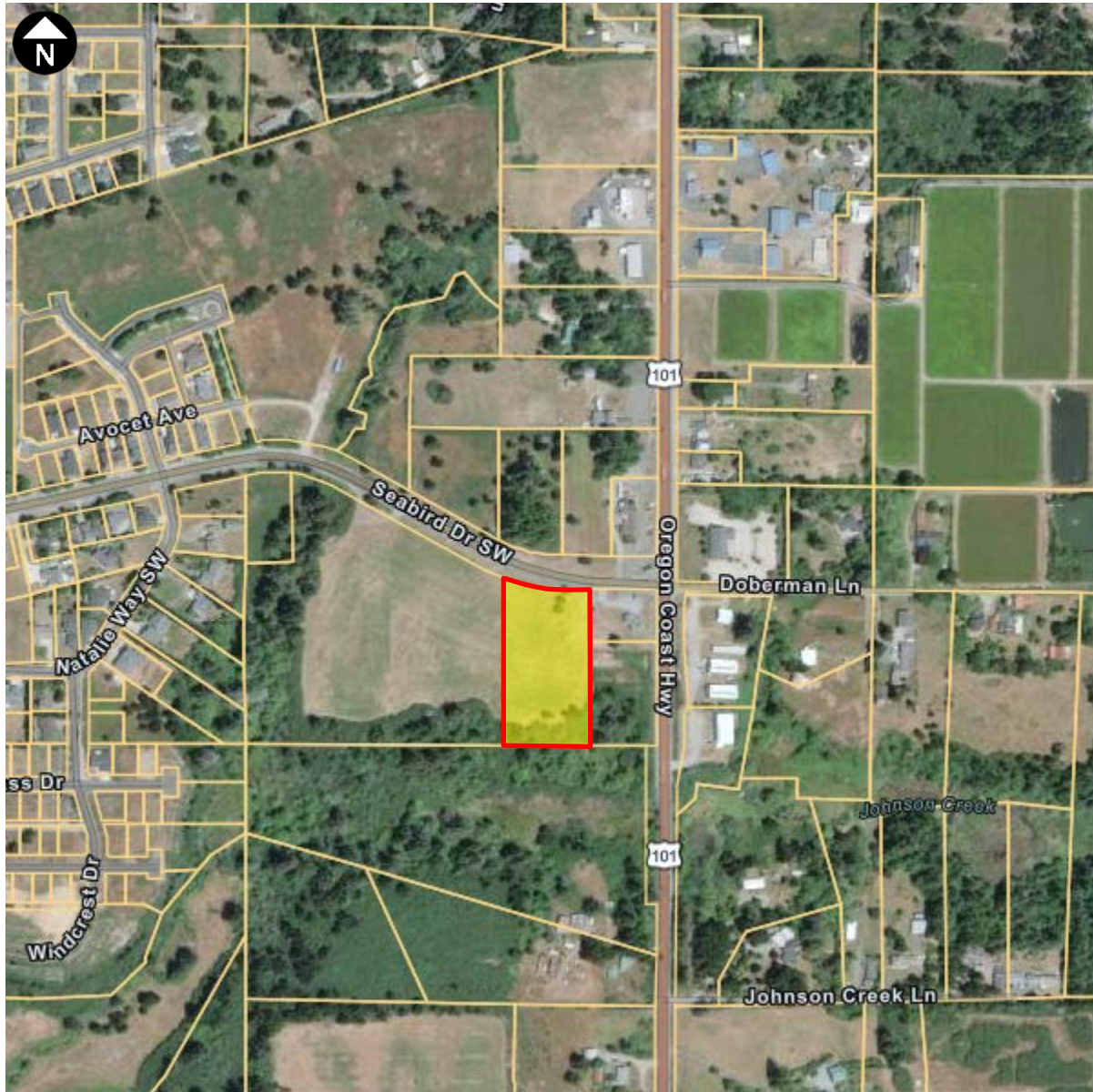


Figure 1. Site Vicinity Map. Source: Coos County Tax Lot Viewer.

## PROPOSED DEVELOPMENT PLAN

The preliminary plan for the multifamily site includes 48 residential units within four separate two-story structures situated around the surface parking lot. The southern portion of the site contains wetlands so no development will extend into this area. The existing access will be closed and a new access is proposed via a single access onto Seabird Drive located midway through the parcel. The parking is configured at 90-degree angles and provides simple and intuitive wayfinding for residents and guests, with trash receptacles provided on the southern and eastern edges of the parking area to simplify service vehicle access. A sidewalk system is provided within the site linking all of the parking stalls to the buildings. Figure 2 depicts the preliminary site plan.

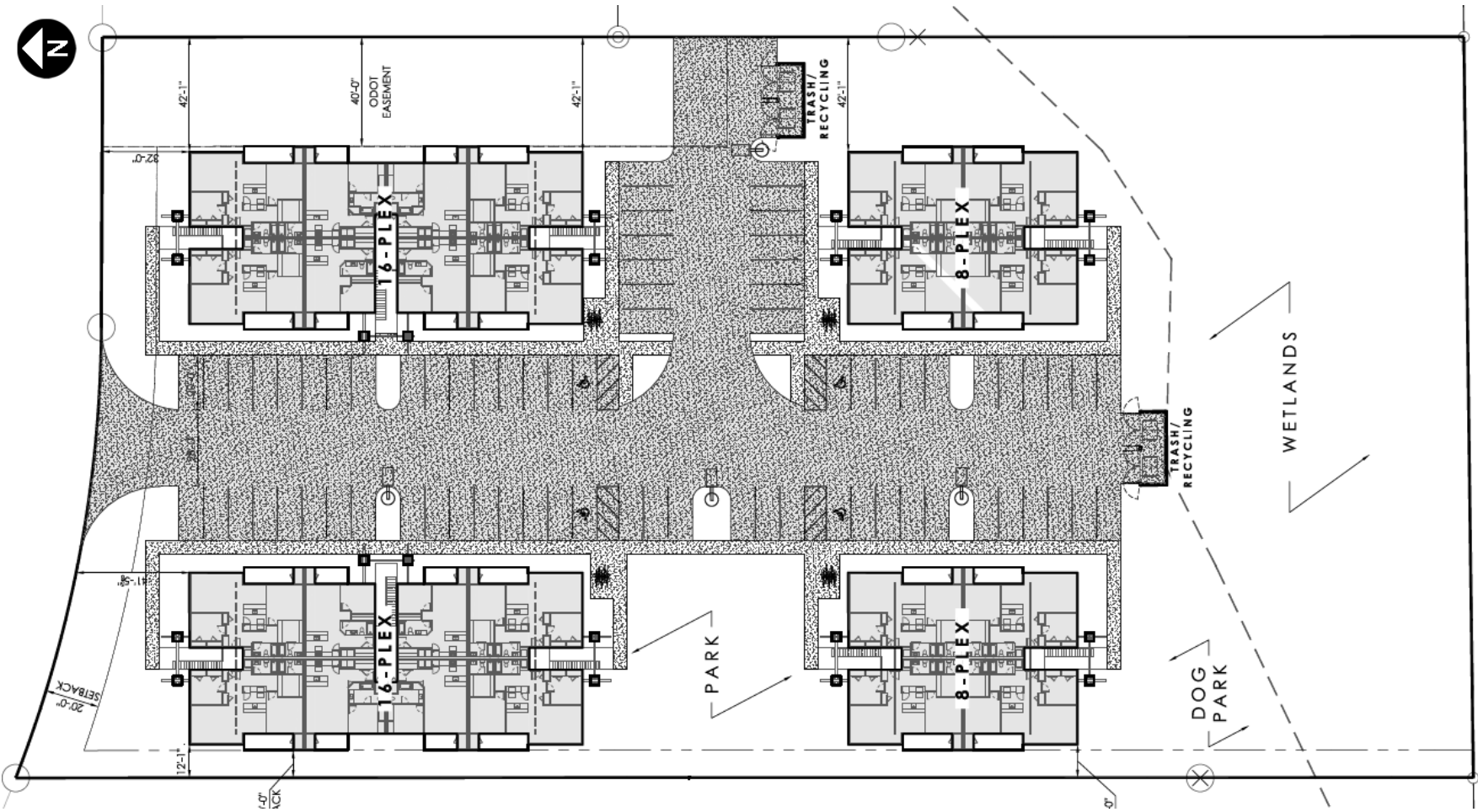


Figure 2. Preliminary Site Plan. (Source: David Waldron & Associates, March 2021)

## EXISTING TRANSPORTATION FACILITIES

Figure 3 depicts the Collector and Arterial roadways surrounding the site from the City's adopted year 2000 Transportation System Plan. As shown in the figure, Seabird Drive provides an east-west connection between Beach Loop Road and Highway 101, and Highway 101 provides the main north-south route through the City.

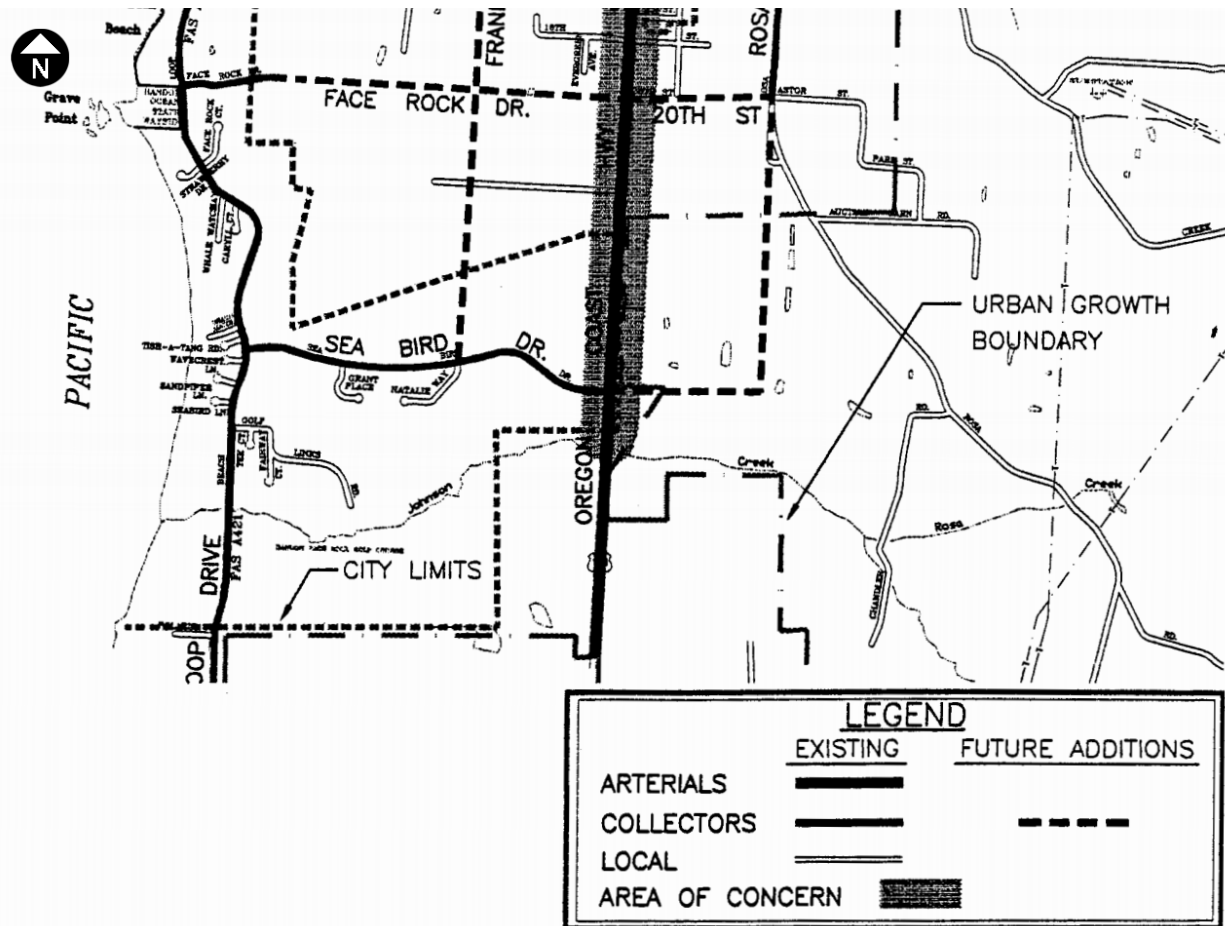


Figure 3. Functional Classification Map (Source: *Bandon Transportation System Plan* pp 346 Section 2 Street Plan)

Further descriptions of the characteristics of the roadways supporting the proposed development are included below:

- Seabird Drive is classified as a *Collector* with a two-lane cross-section and a 35-mph posted speed within the vicinity of the site. It has paved shoulders, but no curb or sidewalk between Highway 101 and the subdivisions to the west. Where there is new development, some improvements have been constructed. This includes a mix of sidewalks with curb and gutter; sidewalks with curb, gutter, and on-street parking; and sidewalks with no curb and gutter.

The 2010 Bandon *Local Street Refinement Plan* reports that Seabird Drive has a right-of-way width of 100 feet and the pavement width varies between 24 and 36 feet.

The City's Transportation System Plan includes the City's street standards by classification in Appendix B. The *Collector* road design depends on the pavement width. For a 34-foot paved width, the standard is for two twelve-foot travel lanes, two five-foot bicycle lanes, curb and gutter, and 2 five- or six-foot wide sidewalks.

- Highway 101 is classified as an *Arterial* in the City's Transportation System Plan and a *Statewide Highway* in the Oregon Highway Plan. It has a three-lane section in the vicinity of the site that narrows down to two lanes south of the study area, with the widening supporting left-turn lanes at the Seabird Drive intersection. Bicycle lanes and sidewalks are provided on Highway 101 throughout the City of Bandon. There is a posted speed of 45 mph within the study area.

## PEDESTRIAN AND CYCLIST NETWORK

There are no continuous pedestrian and bicyclist facilities on Seabird Drive to connect the existing multimodal facilities on Highway 101 with Beach Loop Road. As part of the proposed multifamily development, sidewalks and bicycle lanes will be provided to connect to future facilities east and west of the site. The City's 2000 Transportation System Plan identifies Seabird Drive for planned sidewalks and bicycle lanes that would eventually connect to a future sidewalk and bicycle network on Beach Loop Road to the west, a future north-south road from Seabird Drive, and extending across Highway 101 to the east to future roads. These would provide multimodal connections to the activity centers north of the site. Additionally, a future path is planned and shown on the Pedestrian Plan that would connect to Seabird Drive just west of the site and continue north connecting to another path and potentially the schools and the City Park and Community Center.

The City's TSP is over 20 years old and the horizon year of the plan has already passed. It is our understanding that the City's current planning is based on standards and specifications until a revised plan can be prepared.

## TRANSIT SERVICE

The City of Bandon does not have its own fixed route transit system. On-demand transit services are provided by Dial-A-Ride as part of Coos County Area Transit. These rides require a day's advance notice and cost \$1.50 per ride for seniors and persons with disabilities, \$2 for the general public, and \$1 for youth.

For transportation between other towns on the South Coast, Curry Public Transit's Coastal Express operates on weekdays between North Bend and Smith River, California with stops in Bandon and other coastal towns along the way.

## ROADWAY SAFETY

This section provides a safety review of the transportation infrastructure serving the proposed development based on review of historical crash records submitted through the DMV and maintained by ODOT, as well as field review of area conditions, roadway and intersection geometrics, and available sight lines.

## HISTORICAL CRASH REVIEW

Historical crash records were obtained through ODOT Crash Analysis and Reporting System (CARS) from the period between January 2014 and December 2018. This reflects the most recent five-year period available. Crashes that are required to be reported during this period include those that involve at least one motor vehicle, involve any level of personal injury, or that result in \$1,500 or more in property damage before 2018 or in \$2,500 or more in property damage in 2018.

Table 1 summarizes the number, severity, and type of reported crashes at the Highway 101/Seabird Drive intersection. The table also provides a crash rate per million entering vehicles, which is often used to assess whether a geometric or traffic control deficiency is present when the crash rate is greater than 1.0 per million entering vehicles. ODOT also provides crash rates separated by control type and the number of approaches, which better distinguish between varying intersection forms and are provided for reference. No crashes were reported along the site frontage in the five-year period reviewed.

**Table 1. Crash Summary**

Intersection	Number of Crashes	Crash Severity			Crash Type	Crash Rate per MEV	ODOT 90 <sup>th</sup> % Rate
		Fatal	Injury	Non-Injury	Side-swipe		
Highway 101 / Seabird Dr	1	0	1	0	1	0.07	4ST: 1.08 <i>Rural</i>

4ST: Four-legged, stop-controlled on minor approach

As shown in Table 1, only one crash was reported at the Highway 101/Seabird Drive intersection. This crash occurred on March 1, 2018 during reportedly snowy conditions. Few consistent details are provided regarding this crash. It was reported as a sideswipe collision and may have involved an occupant falling, jumping, or being ejected from a moving vehicle. The crash resulted in injury. With this low occurrence of crashes and the unusual weather conditions at the time there were no deficiencies identified through this historical crash review.

## INTERSECTION SIGHT DISTANCE

The site is proposed to connect to Seabird Drive at a single location near the center of the site frontage on the outside of a horizontal curve. 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 Triangles

For minor-street stop-control intersections, intersection sight triangles are based on guidance cited within Conditions B1 (left-turn from minor road) and 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 35 mph and level terrain, Figure 4 illustrates the recommended intersection sight distance measurements required at the access.

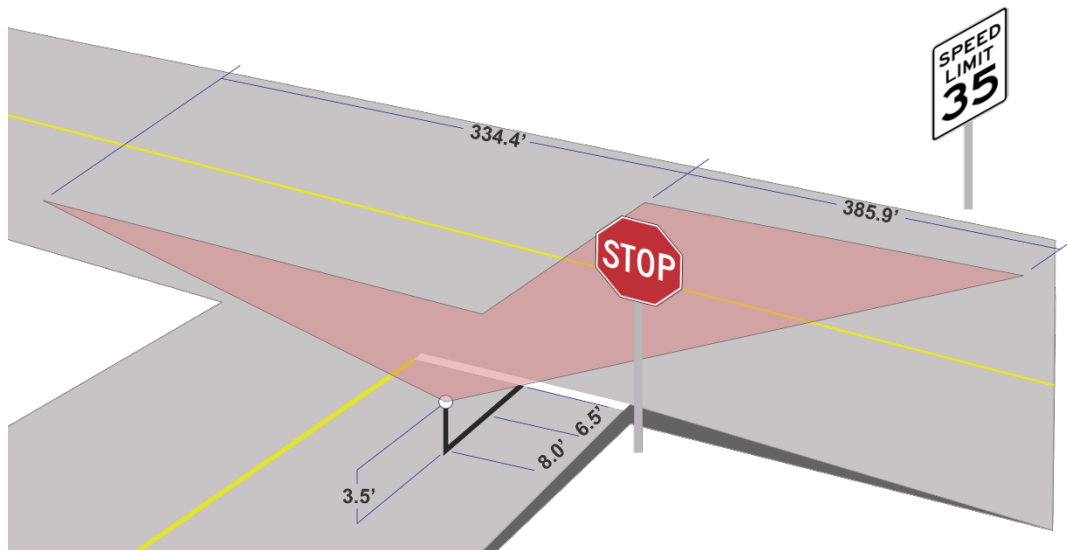


Figure 4. Recommended Intersection Sight Distance Dimensions for Access on Seabird Drive.

The site was visited in May 2021 and the intersection sight distance was evaluated at the proposed access. Figures 5 and 6 illustrate the available sight distance at the proposed access and show that more than adequate sight distance is available.



Figure 5. Facing east at proposed access.





Figure 6. Facing west at proposed access.

### Vision Clearance

The City of Bandon Municipal Code 17.104.090 requires clear sight triangles at the intersections of streets and driveways for the purposes of maintaining a clear view of motorists, pedestrians, and cyclists. For residential driveways this requires a clear triangle “formed by the intersection of the driveway center line, the street right-of-way line and a straight line joining said lines through points twenty feet from their intersection.” This is illustrated in Figure 7.

Within this space all trees, vegetation, and structures should be limited between two and one-half feet and eight feet in height to provide a clear view of oncoming motorists, cyclists, and pedestrians. Similar to the intersection sight distance requirements, this will also limit the placement of landscaping, signage, and utilities within these areas. There is no parking allowed along the site frontage on Seabird Drive.

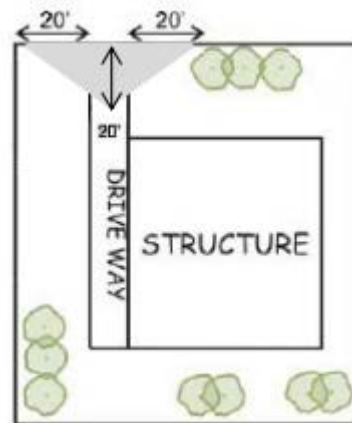


Figure 7. Vision Clearance Area.  
Source: Bandon Zoning Compliance Form 10A

## TRAFFIC OPERATIONS

This section of the report describes the impacts of the site on the transportation system.

### TRIP GENERATION ESTIMATES

The standard reference *Trip Generation Manual 10<sup>th</sup> Edition*, published by the Institute of Transportation Engineers (ITE) was used to calculate the trip generation of the proposed development. For multifamily residential projects the specific land use classification is established by the number of building stories, and the trip generation rates are based on the number of units. With two-story structures within the site all of the units will be classified with ITE Land Use 220: Multifamily Housing (Low-Rise).

- Land Use 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 one or two levels (floors).*

**Table 2. Estimated Trip Generation (Source: ITE Trip Generation, 10<sup>th</sup> Edition)**

Land Use	ITE Code	Size	Weekday Daily Trips	Weekday PM Peak Hour		
				Total	In	Out
Multifamily Housing (Low-Rise)	221	48 Units	351	27	17	10

As shown in Table 2, the proposed development is estimated to generate 351 new weekday daily trips, of which 27 will occur during the weekday p.m. peak hour. As previously discussed, this represents about 5% of the trip generation rates previously contemplated with retail use on the site. Owing to what is typically a lower number of persons per unit, nationally established trip rates of multifamily housing is about half that of a single-family residence.

### TRIP DISTRIBUTION AND TRIP ASSIGNMENT

The trip distribution pattern was prepared for the site based on historical traffic counts at the Highway 101/Seabird Drive intersection that were obtained from the 2008 traffic report. This showed that about 10% of the trips travel west on Seabird Drive, 10 percent travel on US 101 from the south, and 80 percent are destined to and from the north on the highway. The overall trip distribution and assignment patterns are illustrated in Figure 8.

This figure shows a total of 24 weekday p.m. peak hour trips at the US 101/Seabird Drive intersection, versus approximately 540 weekday p.m. peak hour trips with the prior retail use that was contemplated.

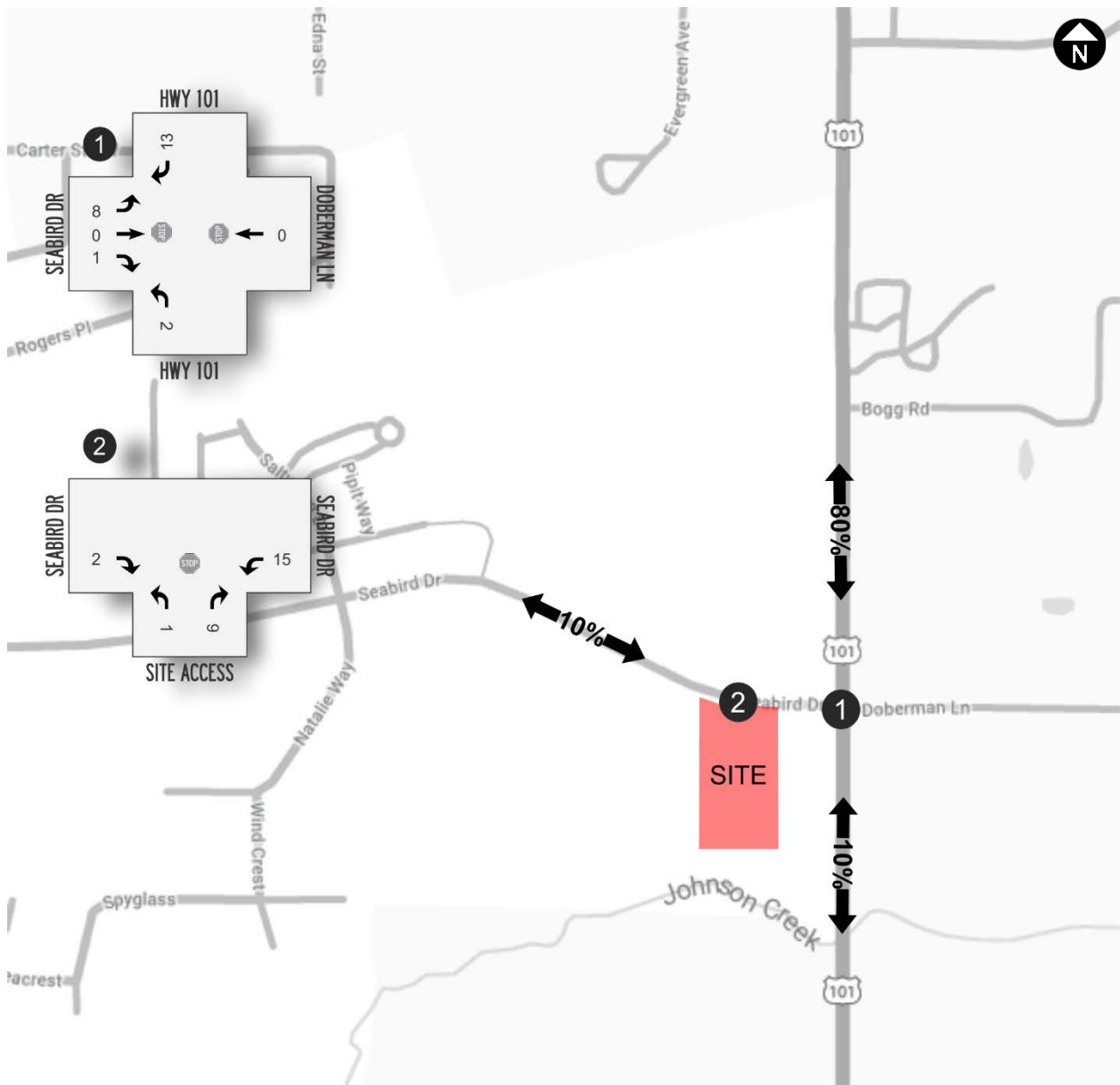


Figure 8. Estimated Trip Distribution and Assignment, Weekday PM Peak Hour.

## STUDY INTERSECTIONS

During the scoping process with the City, it was determined that the site access and the Highway 101/Seabird Drive intersection should be studied. Previous studies have identified the need for a traffic signal in the future at the Highway 101/Seabird Drive intersection.

## ANALYSIS YEARS

Conservatively, it was assumed that the proposed use will be fully built-out by 2023. This Transportation Impact Analysis analyzes existing traffic conditions, year 2023 background traffic conditions (without the site), and year 2023 total traffic conditions (with full build-out), consistent with typical City requirements.

## OPERATIONAL ANALYSIS

Traffic operations analysis were prepared using Synchro 10 software and implementing the Highway Capacity Manual 6<sup>th</sup> Edition operations methods for stop-controlled intersections. All traffic operations within this report reflect peak fifteen-minute conditions and other calibration parameters for ODOT facilities based on the *Analysis Procedures Manual*.

The City’s 2000 Transportation System Plan, Volume 6, Section 1 includes Policy 17 on page 339 that the collector street network shall be maintained at Level of Service (LOS) “D” during the peak hour. ODOT’s mobility targets are typically based on the intersection location, its classification, and speed. Based on the classification of Highway 101 as a *Statewide Highway* and the intersection area located outside the UGB, ODOT uses a volume-to-capacity ratio of 0.75 on the mainline and 0.80 for Seabird Drive.

Study intersections, traffic control, roadway jurisdiction, and operational standards/mobility targets at the study intersections are summarized in Table 3.

**Table 3. Study Area Intersection Operational Standards and Mobility Targets**

Intersection	Traffic Control	Jurisdiction	Performance/ Mobility Standard
Highway 101 / Seabird Drive	Minor-Street Stop-Control	ODOT	Highway 101 v/c ≤ 0.75 Seabird Dr v/c ≤ 0.80
Seabird Drive / Access	Minor-Street Stop-Control	City of Bandon	LOS D

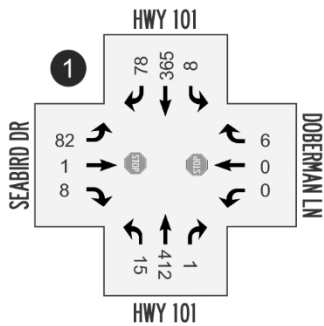
### Year 2021 Existing Traffic Conditions

Traffic counts were collected at the Highway 101/Seabird Drive intersection on May 5, 2021 during the weekday p.m. peak period from 4:00 to 6:00 p.m. The peak hour was found to occur between 4:00 and 5:00 p.m. During this time, no pedestrians or bicyclists were observed at the intersection. This count is reflective of off-season conditions and potentially, the continued impact on travel due to COVID-19. To account for seasonal variations on Highway 101, ODOT’s Automatic Traffic Recorder at Station 06-004 (located on Highway 101, 1.02 miles south of 18<sup>th</sup> SW Street) approximately 0.3 miles south of Seabird Drive, was reviewed for the past five years. It showed that May traffic counts should be increased by 26% to reflect peak July conditions on Highway 101. This adjustment was applied to the Highway 101/Seabird Drive intersection.

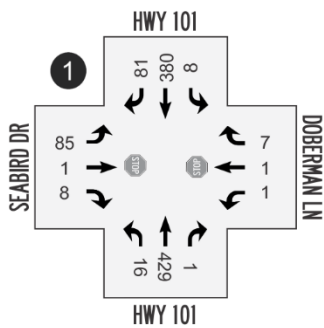
In addition, the data collected by ODOT on Highway 101 between 2019 and 2021 was reviewed to identify the potential impact of COVID-19 on traffic patterns. The most recent published report, *Observed Statewide Traffic Volume Patterns: Related to COVID-19 Monitoring* dated May 7, 2021 reports the average weekday traffic volume on Highway 101 between April 5<sup>th</sup> and May 2<sup>nd</sup> (the most recent reporting period) to have increased from 2019 to 2021, indicating a recovery to pre-pandemic traffic volumes. Therefore, no adjustment to the 2021 traffic counts is needed to account for the impact of COVID-19.

Figure 9 depicts the seasonally adjusted 2021 traffic volumes applied within the existing conditions analysis. Results of the existing conditions analysis are presented in Table 5. This shows that the Highway 101/Seabird Drive intersection currently operates acceptably.

**2021 EXISTING TRAFFIC CONDITIONS  
WEEKDAY PM PEAK HOUR**



**2023 BACKGROUND TRAFFIC CONDITIONS  
WEEKDAY PM PEAK HOUR**



**2023 TOTAL TRAFFIC CONDITIONS  
WEEKDAY PM PEAK HOUR**

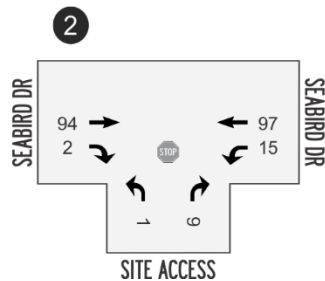
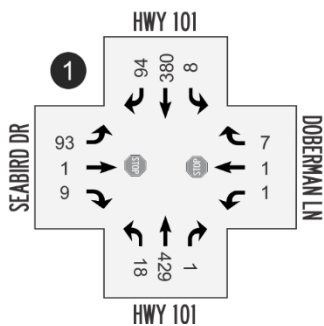


Figure 9. 2021 Existing and 2023 Forecast Traffic Volumes, Weekday PM Peak Hour.

### Year 2023 ‘No Build’ Traffic Forecasts

Year 2023 traffic volumes are estimated by applying a background growth rate to the existing adjusted traffic volumes and adding in approved, in-process developments. Multiple sources of data were reviewed in determining a background growth rate for use in the analysis.

ODOT forecasts future year volumes on their facilities using data from the ODOT Transportation Volume Tables. A review of these historical volumes on Highway 101 at the Automatic Traffic Recorder south of the site for the most recent ten years of data show a decreasing trend from 2010 to 2012, then a steady increase to 2018 and a slight decline in traffic volumes in 2019. Figure 10 illustrates the historical traffic volumes.

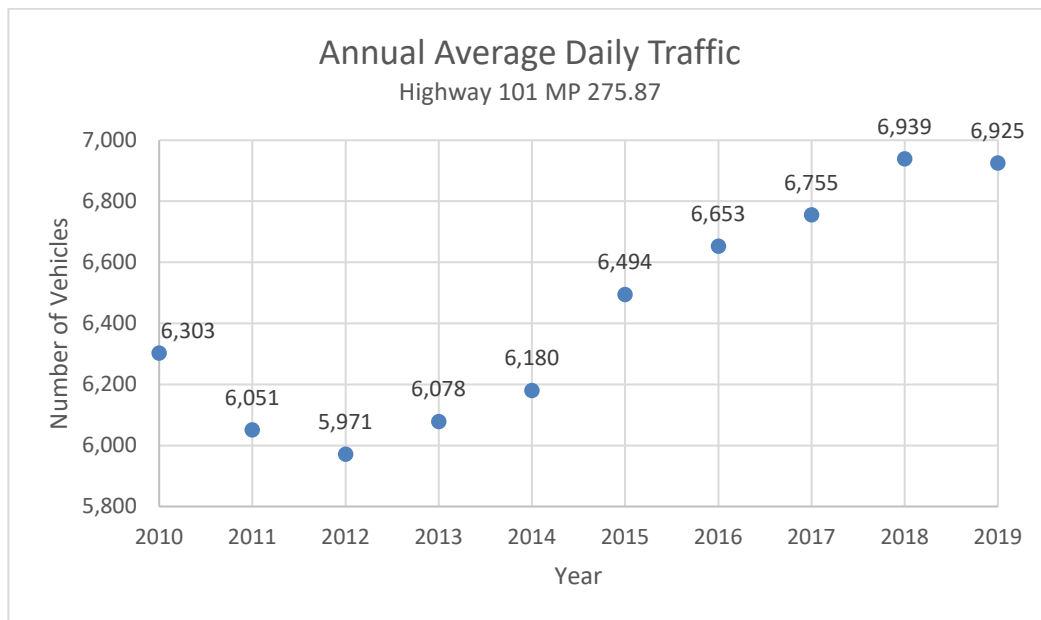


Figure 10. Historical Annual Average Daily Traffic on Highway 101 south of Bandon.

The ODOT website states that their future volume forecasts are estimates based on local growth patterns and comprehensive plans could affect the outcome. Based on the Automatic Traffic Recorder on Highway 101 south of the site, ODOT’s Future Volumes Table shows that traffic volumes will grow less than 2-percent between years 2018 and 2039. However, this forecast is associated with a low R-squared value (0.07) indicating a poor correlation for the 21-year forecast.

The *Coos County Transportation Plan* dated 2011, projects traffic volumes on Highway 101 south of Bandon will grow 25-percent between 2007/2008 and 2030. This works out to a 1.1-percent annual growth rate on the highway.

Traffic volume forecasts from the City’s 2010 *Local Street Refinement Plan* were also reviewed. The *Local Street Refinement Plan* focuses on the southern area of Bandon bounded on the north by 18<sup>th</sup> Street and on the south by Polaris Lane. Two future land use scenarios were evaluated for this area, but only one was considered relevant for the purposes of forecasting future volumes. This was Scenario 1 that considered residential development west of Highway 101 rather than the full build-out scenario assuming all buildable land in the refinement area was built out in 2030. Based on the 2030 forecasts for Scenario 1, the study shows annual growth between 1.9 and 2.9-percent at the Highway 101/Seabird Drive

intersection depending on transportation improvements. Utilizing these higher annual growth rates would double-count the impact of the residential area currently being developed to the west.

To develop a reasonably conservative annual growth rate for use in this study, the growth rates reported in the Coos County TSP and City’s Local Street Refinement Plan were averaged. The result is an annual growth rate of 2-percent per year. This is comparable to the average growth rate over the last five years on Highway 101.

No specific approved, in-process developments were identified for inclusion in the study, though the growth rate should account for continued area development. Based on the application of the 2-percent annual growth rate, Figure 9 depicts the resulting 2023 traffic volumes without the proposed development during the weekday p.m. peak hour and Table 6 includes the summary of operations. As shown in the table, the Highway 101/Seabird Drive intersection is expected to continue to meet mobility standards.

### Year 2023 ‘With Site’ Conditions

Year 2023 conditions with the proposed development were prepared by adding the no-build conditions with site generated trips from the proposed multifamily. This analysis includes the current intersection configurations. The resulting volumes are depicted in Figure 9 and the operational analysis of “with-site” conditions are also summarized in Table 5.

As shown in Table 5, all intersections are projected to meet City and State standards with buildout in the year 2023.

**Table 5. Intersection Operations Summary**

Intersection	Performance/ Mobility Standard	Weekday PM Peak Hour			Acceptable?
		LOS	Delay (s/veh)	v/c Ratio	
<b>2021 Existing Traffic Conditions</b>					
Highway 101 / Seabird Dr	Seabird Dr v/c ≤ 0.80	EB LTR: LOS D	EB LTR: 27.8	EB LTR: 0.39	Yes
<b>2023 Background Traffic Conditions</b>					
Highway 101 / Seabird Dr	Seabird Dr v/c ≤ 0.80	EB LTR: LOS D	EB LTR: 31.0	EB LTR: 0.43	Yes
<b>2023 Total Traffic Conditions</b>					
Highway 101 / Seabird Dr	Seabird Dr v/c ≤ 0.80	EB LTR: LOS D	EB LTR: 33.7	EB LTR: 0.48	Yes
Seabird Dr / Access	LOS D	NB LR: LOS A	NB LR: 9.0	NB LR: 0.01	Yes

## MUTCD SIGNAL WARRANTS

The potential need for a traffic signal at the Highway 101/Seabird Drive intersection was identified in the City’s adopted *Transportation System Plan* from 2000, in the 2006 traffic study by Lancaster Engineering, and in the 2010 *Bandon Transportation Refinement Plan*. Each of these studies is discussed briefly below.

The City of Bandon’s *Transportation System Plan* (TSP) was prepared in 1997 with final adoption in October 2000, and is now over 20 years old. The Transportation Planning Rule requires that



Transportation System Plans provide a 20-year forecast of conditions and resulting system needs. The adopted TSP assesses future horizon year 2020 conditions that have since passed.

The adopted TSP defines the Seabird Drive corridor as a Collector, and further states:

*At the four intersections of collector streets with the arterial system, traffic signals either exist or may be necessary in the future. The state highway plan requires signal spacing of at least one-half mile. The planned collector system signalization will be designed to meet the state standard. Where a signal is proposed on a state highway, an investigation must be conducted to confirm whether established criteria are met.*

Figure 3 of the City's Street Plan further highlights the potential need for signalization of the Seabird Drive intersection. This project was not based on an identified need, but rather based on the designation of Seabird Drive as a *Collector* and its major travel role in supporting highway access for the City. However, based on the 2006 traffic counts prepared for the previously proposed retail site the traffic volumes were only about a quarter of what would be required to warrant a traffic signal.

The 2010 Bandon *Transportation Refinement Plan* analyzed what transportation improvements would be needed to support development within a 1.5 square mile area that includes land within the City, and areas in unincorporated Coos County. This study focused on mid- (year 2023) and long-term (year 2030) growth to understand the phasing of required improvements. This study showed that a traffic signal would be warranted at the Highway 101/Seabird Drive intersection in year 2025 based on the approved growth scenario. A roundabout was also considered a feasible option and was recommended for further consideration.

Based on the identification of the need for a future traffic signal at the Highway 101/Seabird Drive intersection traffic signal warrants were reviewed based on the more recent traffic count data collected for this study to help in the City's monitoring process.

Traffic signal warrants are the criteria identified within the Manual on Uniform Traffic Control Devices that describe the minimum conditions under which a traffic signal should be further considered. There are nine separate warrant criteria as listed below:

1. Warrant 1, Eight-Hour Vehicular Volume
2. Warrant 2, Four-Hour Vehicular Volume
3. Warrant 3, Peak Hour
4. Warrant 4, Pedestrian Volume
5. Warrant 5, School Crossing
6. Warrant 6, Coordinated Signal System
7. Warrant 7, Crash Experience
8. Warrant 8, Roadway Network
9. Warrant 9, Intersection Near a Grade Crossing

Within this study, volume-based MUTCD Signal Warrants #1, #2, and #3 were reviewed at the stop-controlled intersection of Highway 101 and Seabird Drive using the projected peak hour counts to mimic a daily traffic profile. The volume warrants are applied based on volumes in the 100-percent columns of the tables and graphs within the MUTCD. An option is provided for roadways with a statutory speed limit of greater than 40 mph or in built up areas of communities of less than 10,000 to use the volumes in the

70-percent column. Tables 6 and 7 summarize the findings of this analysis for both the 100-percent and 70-percent warrant factors.

**Table 6. Summary of MUTCD Signal Warrant Review 100% Warrant Factor**

Volume-Based Warrant Summary				
Warrant No.	Description	Warrant Factor	2023 Without Site	2023 With Site
Warrant 1:	Eight-Hour Vehicular Volume	100%	Yes	Yes
Warrant 2:	Four-Hour Vehicular Volume	100%	No	No
Warrant 3:	Peak Hour	100%	No	No

**Table 7. Summary of MUTCD Signal Warrant Review 70% Warrant Factor**

Volume-Based Warrant Summary				
Warrant No.	Description	Warrant Factor	2023 Without Site	2023 With Site
Warrant 1:	Eight-Hour Vehicular Volume	70%	Yes	Yes
Warrant 2:	Four-Hour Vehicular Volume	70%	Yes	Yes
Warrant 3:	Peak Hour	70%	Yes	Yes

As shown in Table 6, Warrant #1 is expected to be met at the Highway 101/Seabird Drive intersection in the year 2023 with or without the site using the 100-percent volumes from the MUTCD. If we consider the 45 mph posted speed on Highway 101, we have the option of using the 70-percent warrant factor and all three volume warrants are expected to be met as shown in Table 7. Given the acceptable operations of the intersection in the future with the proposed development, no mitigations are recommended at this time, but continued planning for and support of a traffic signal (or roundabout) is encouraged.

## ROADWAY CROSS-SECTIONS

Seabird Drive is designated as a *Collector* and according to the City’s Transportation System Plan should have sidewalks and bicycle lanes throughout. Figure 11 depicts the standard cross-section from the TSP. As discussed earlier, the existing cross-section varies between an unimproved two-lane roadway to a curbed section with on-street parking and meandering sidewalk. The site will need to build frontage improvements to City standards providing bicycle and pedestrian facilities. These will not connect to other facilities until the adjacent lots are improved or the City builds them as part of their capital improvements.

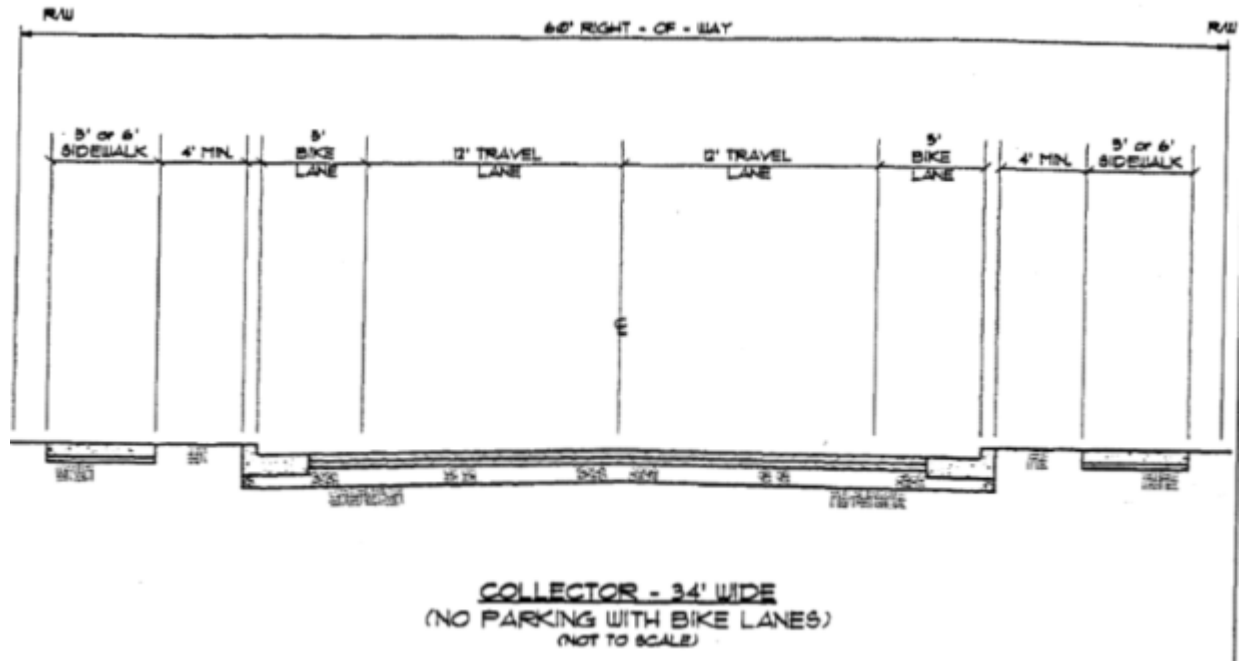


Figure 11. Collector Street Standard (Source: 2000 Transportation System Plan, p. 386)

## CONDITIONAL USE

The proposed multifamily use is allowed as a conditional use in C-2 zoning in accordance with Chapter 17.92 of the Municipal Code. Within this section Chapter 17.92.040 includes the approval standards for conditional uses. This section is provided below along with responses to the transportation-related criteria.

### 17.92.040 Approval standards for conditional uses.

*The approval of all conditional uses shall be consistent with:*

- A. *The comprehensive plan;*

**Response:** Map B12 in the Comprehensive Plan shows the subject site is located within the Controlled Development Area (CDA) and across from the "Seabird Lane Area" identified for residential use. The Comprehensive Plan states that within these CDAs "a mix of uses would be permitted, including residential, tourist commercial, and recreational." The proposed multifamily housing meets the intent of the CDA.

- B. *The purpose and dimensional standards of the zone except as those dimensional standards have been modified in authorizing the conditional use permit;*
- C. *That the site size and dimensions provide adequate area for the needs of the proposed use;*
- D. *That the site size and dimensions provide adequate area for aesthetic design treatment to mitigate possible adverse effect from the use of surrounding properties and uses;*
- E. *The characteristics of the site are suitable for the proposed use considering size, shape, location, topography and natural features;*

- F. *All required public facilities and services have adequate capacity to serve the proposal, and are available or can be made available by the applicant;*

**Response:** As shown in the analysis, the study intersections are expected to meet operational and safety standards with the proposed development. The proposed multifamily use is a less intensive use than the original retail proposal and is expected to have minimal impact on the Highway 101/Seabird Drive intersection.

- G. *The proposed use will not alter the character of the surrounding area in a manner which substantially limits, impairs, or precludes the use of surrounding properties for the permitted uses listed in the underlying zoning district;*

**Response:** The proposed multifamily development will build frontage improvements on Seabird Drive that will provide sidewalks and bicycle lanes consistent with the standards in the City's Transportation System Plan. This will provide multimodal facilities for future connection to adjacent commercial or residential uses.

- H. *All other requirements of this title that apply.*

## SUMMARY OF FINDINGS

The Transportation Impact Analysis prepared for the proposed multifamily development identified the following:

- The proposed 3.13-acre site is planned to include 48 multifamily residential units within four separate two-story structures. The existing access will be closed, and a new access is proposed via a single access onto Seabird Lane located midway along the frontage.
- The site is zoned as C-2, *General Commercial*, which allows the development as a conditional use.
- The development is estimated to generate 351 weekday daily trips of which 27 trips (17 in, 10 out) are expected to occur during the weekday p.m. peak hour.
- There are no crash patterns within the study area identified from review of historical crash data.
- Traffic operations show that all study intersections are expected to meet City operation standards with buildout of the site in the year 2023.

## RECOMMENDATIONS

The following recommendations are provided to support the multifamily development:

- The project will be required to construct sidewalks along the site frontage on Seabird Drive as well as accessible pedestrian access to the buildings from the sidewalks.
- The project will be required to maintain clear vision triangles as well as intersection sight distance at the new proposed access on Seabird Drive.
- The new driveway should be constructed with concrete "dust pan" apron rather than curb returns to distinguish between the public and private access connections and maintain pedestrian priority along the sidewalk system.
- The traffic volumes at the Highway 101/Seabird Drive intersection should continue to be monitored as the surrounding area builds out to ensure adequate operations and the need and timing for signalization.

- The project will contribute to the City's long-range transportation needs through payment of Transportation System Development Charges.

With these recommendations the proposed project can comply with the City's transportation requirements. Please let me know if you have any questions related to the findings of this Transportation Impact Analysis at (503) 997-4473 or at [joe@transightconsulting.com](mailto:joe@transightconsulting.com).

Attachments:

- Traffic Count Worksheets
- Year 2021 Existing Conditions LOS Worksheets
- Year 2023 Background Conditions LOS Worksheets
- Year 2023 Total Traffic Conditions LOS Worksheets
- Signal Warrant Worksheets