

**CITY OF BEND ENGINEERING DIVISION
TRAFFIC ANALYSIS MEMO – AMENDED TFR REVIEW
PRTFR202105699
MIXED USE DEVELOPMENT**



COMMUNITY
DEVELOPMENT

Date: December 29, 2021
Updated July 7, 2022
Project Site: 325 NW Arizona Avenue
171223DC14100
Contact/Applicant: Joe Bessman
joe@transightconsulting.com
(503) 997-4473

Existing Site:

The property is located at 325 NW Arizona Avenue. The 1.07-acre property is zoned Commercial General (GC) and is designated Commercial General (CG) on the Comprehensive Plan. The property is currently undeveloped.

The roads that are directly adjacent to the site are as follows:

- NW Arizona Avenue – Public Arterial
 - Existing Right of Way width: 60 feet.
 - The street has 35 feet of asphalt width, bound by curbs on both sides, with parking and bulb outs on the north side of the street.
 - Sidewalk on the north side of the street.

Proposed Development:

The original proposed development was for three buildings to be constructed in two phases, but has changed to a five-lot subdivision. A supplemented report was provided on 6/15/2022. The following report will show the original submittal and the updated proposal. East of the new Sisemore Street extension, a 1556 square foot commercial space with ten condominiums was proposed and will now be lot E. West of the Sisemore Street extension, two buildings were proposed and will not be lots A, B, C and D.

The new site plan is proposing to develop lot A with 3110 square feet of commercial/office space and four residential units. Lot B will be developed with 4171 square feet of commercial/office space and six residential units. Lot C will be used for shared access and parking for lots A, B and D. Lot D will be developed with 4046 square feet of commercial/office space and six residential units. Lot E will be developed separately with 6560 square feet of commercial/office space and 8 residential units.

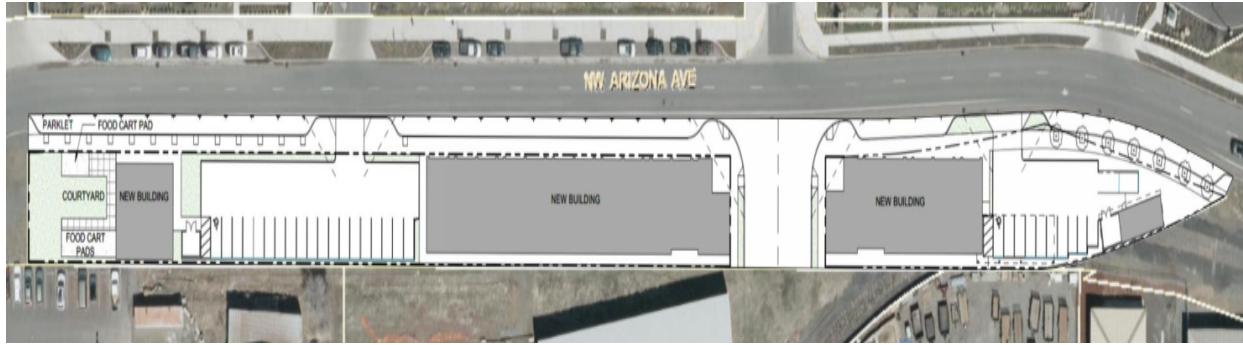


Figure 1: Original conceptual site plan

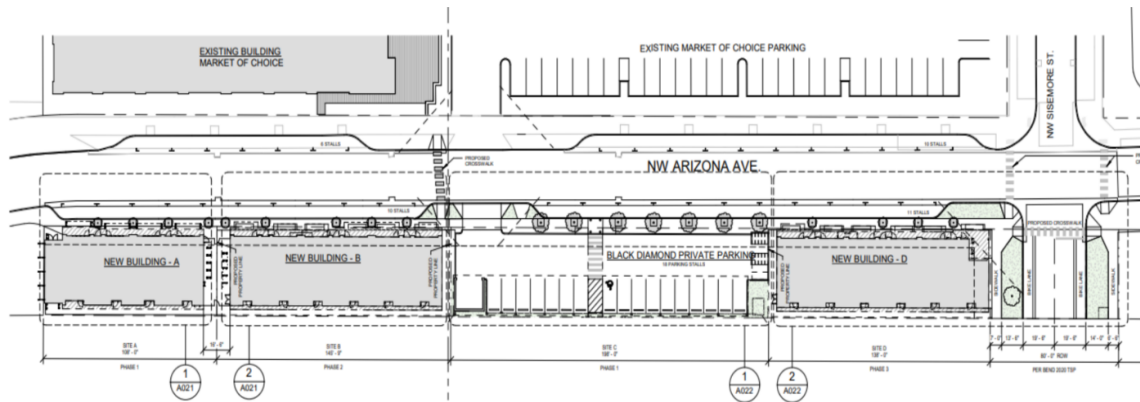


Figure 1. Proposed Site Layout. Source: Steele Associates Architects, LLC.

Figure 1A: New Site Plan as of July 2022

Transportation Facility Report (TFR) Review Complete: ☒ Yes ☒ No

The report developed by Joe Bessman, a registered engineer, Transight Consulting, dated May 24, 2021 with a supplement dated April 18, 2022, was submitted under a Transportation Review Application PRTFR202105699. Per the report, peak hour trips were determined based on the Institute of Transportation Engineer (ITE) trip generation manual. The proposed development is estimated to produce 6.16 PM peak hour trips (ITE 220 – Multifamily Housing (Low Rise), ITE 221 – Multifamily Housing (High Rise), ITE 926 Food Cart Pod, ITE 930 Fast Casual Restaurant, ITE 932 High-Turnover (Sit-Down) Restaurant and 820 – Shopping Center) or 315.17 Average Daily Trips (ADT).

The original trip generation was produced from data in the 10th edition of the ITE. The trip generation for the food cart pod was extrapolated from combining fast food casual (ITE 930) and food cart pod (ITE 926) due to the category in the ITE not specifically matching either ITE section exactly. See table 1 below. The combine data provided a higher trip count than would exist with standalone food carts.

Table 1. Estimates of Daily Food Cart Pod Trips

Fast Casual		Ratio (daily:pm peak)	Food Cart Pod	
Daily Trips (trips/1,000sf)	Weekday PM Peak Hour (trips/1,000sf)		Weekday PM Peak Hour (trips/cart)	Extrapolated Daily Trips (trips/cart)
315.17	14.13	22.3	6.16	137.37

The multifamily trips were calculated by the mid rise multifamily ITE code for 32 condominium units. The commercial square footage of the 2000 square foot building was assumed as a high turnover restaurant while the rooftop area was left out of the calculation due to outdoor seating not being included in the ITE gross area calculation. The remainder of the commercial space is calculated as a shopping center. See Table 2 for details.


Table 2. Trip Generation Estimates (ITE 10th Edition)

Land Use	ITE Code	Size	Weekday Daily Trips	Weekday PM Peak Hour Trips		
				Total	In	Out
Phase 1						
Multifamily Housing (Mid-Rise) Internal Trips (10%)	221	10 DU's	54 -5	4 -0	2 -0	2 -0
Shopping Center Internal Trips (10%) Pass-by Trips (34%)	820	1,556 sf	59 -6 -18	6 -1 -1	3 -0 -1	3 -1 -0
Phase 2						
Multifamily Housing (Mid-Rise) Internal Trips (10%)	221	22 DU's	120 -12	10 -1	6 -1	4 -0
Shopping Center Internal Trips (10%) Pass-by Trips (34%)	820	3,500 sf	132 -13 -40	13 -1 -4	6 -0 -2	7 -1 -2
High-Turnover (Sit-Down) Restaurant Internal Trips (10%) Pass-by Trips (43%)	932	2,000 sf	224 -22 -87	20 -2 -8	12 -1 -5	8 -1 -3
Food Cart Pod ¹ Internal Trips (10%) Pass-by Trips (43%)	926	3 Carts	70 -7 -27	7 -1 -3	3 -0 -2	4 -1 -1
Total Proposed Trips Internal Trips Pass-by Trips Estimated Net Trip Impacts			659 -65 -184 410	60 -6 -16 38	32 -2 -10 20	28 -4 -6 18

¹Analysis uses pass-by rate from High-Turnover (Sit-Down) Restaurant

The trip data for the supplement was produced from the 11th edition of the ITE and is shown below.

Table 1. Revised Trip Generation Estimates (ITE 11th Edition)

Land Use	ITE Code	Size	Weekday Daily Trips	Weekday PM Peak Hour Trips		
				Total	In	Out
Lots A through D						
Multifamily Housing (Low-Rise)	220	16 Units	108	8	5	3
General Office Building <i>Internal Trips (10%)</i>	710	5,664 SF	61 -6	8 -1	1 0	7 -1
Strip Retail Plaza (<40k) <i>Internal Trips (10%)</i> <i>Pass-by Trips (40%)¹</i>	822	5,664 SF	308 -31 -111	37 -4 -13	18 -2 -6	19 -2 -7
Total Proposed Trips			477	53	24	29
<i>Internal Trips</i>			-37	-5	-2	-3
<i>Pass-by Trips</i>			-111	-13	-6	-7
Estimated Net Trip Impacts			329	35	16	19
Estimated Lot E Uses (By Others, Not Proposed for Entitlements)						
Multifamily Housing (Low-Rise)	220	8 units	54	4	2	2
General Office Building <i>Internal Trips (10%)</i>	710	3,280 SF	36 -4	5 0	1 0	4 0
Strip Retail Plaza (<40k) <i>Internal Trips (10%)</i> <i>Pass-by Trips (40%)¹</i>	822	3,280 SF	179 -18 -64	22 -2 -8	11 -1 -4	11 -1 -4
Total Proposed Trips			269	31	14	17
<i>Internal Trips</i>			-22	-2	-1	-1
<i>Pass-by Trips</i>			-64	-8	-4	-4
Estimated Net Trip Impacts			183	21	9	12
 Total of Lots A through E (for TPR comparison)						
Total Proposed Trips			746	84	38	46
<i>Internal Trips</i>			-59	-7	-3	-4
<i>Pass-by Trips</i>			-175	-21	-10	-11
Estimated Net Trip Impacts			512	56	25	31

¹ Due to lack of ITE pass-by data for a strip retail plaza the pass-by rate was obtained from ITE Land Use 821: *Shopping Plaza (40 – 150k)*.

The revised trip generation is less than the original submittal but does not include lot E which is a separate land use submittal and will require another TFR. Pass-by trips and internal trips account for 31% of the total trip reduction.

Major intersections are defined as access points to the development and along the transportation system within one mile of the development. NW Arizona Avenue is classified as a Minor Arterial and is a one-way couplet. The TSP identifies a Sisemore Street extension that would bisect this property as a collector. The City of Bend requires access points be taken from the lower classification road. The original site plan was submitted with one access point from NW Arizona Avenue into the parcel west of NW Sisemore Street and one access point to the east of NW Sisemore Street. See preliminary site plan provided in Figure 1. Although the access of the new proposed five-lot subdivision was not addressed in the

supplement, multiple emails and conversations were had regarding the access point on NW Arizona Avenue. The new subdivision will provide one shared access point to lot C for the benefit of lots A, B, and D. Lots A, B and D will not have direct access points to NW Arizona Avenue. A shared access isle, 20-feet wide, extended from the east property line to the west property line of lot C without a spite strip will be required. The shared access, isle and no access to NW Arizona Avenue from lots A, B and D will be recorded on the subdivision plat.

Trip distribution was provided and is detailed in below in figure four. The pass-by trips were taken from NW Arizona Avenue and NW Colorado Avenue and are also shown in Figure 2.

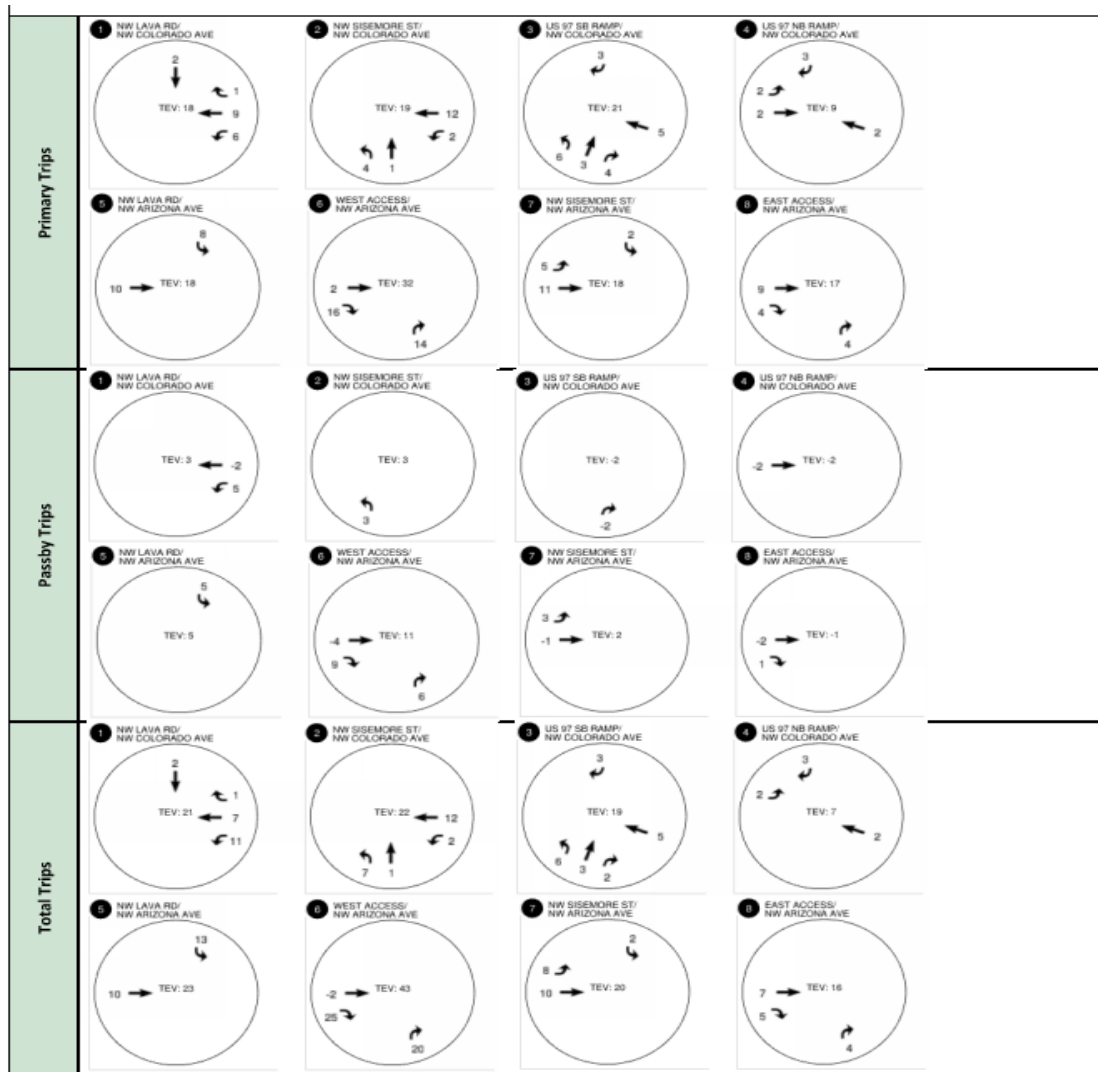


Figure 2: Anticipated Trip Distribution

The study includes the frontage improvements and the extension on Sisemore Street which is required by the TSP. The surrounding area frontages include 10-foot property tight sidewalk with tree wells. Bulb-outs are used around the proposed parking areas along Arizona Avenue to protect clear vision areas by approaches and street intersections. There are compliant ADA

ramps on the north side of NW Arizona Avenue at the intersection of NW Arizona Avenue and NW Sisemore Street. The posted speed, according to the City of Bend GIS system is 35 mph.

The right of way width on NW Arizona Avenue is required to be 100 feet per the Development Code for a Minor Arterial in a commercial zone. A one-way couplet does not require as much right of way due to the traffic moving in one direction, however the Development Code does not discern right of way differences between couplets and standard street sections. A forty-foot dedication would remove the majority of the lot making the development impossible. Due to these constraints, the City of Bend Private Development Engineering Department would support a Waiver to Public Improvement Standards for a reduced right of way dedication requirements on NW Arizona Avenue. Additionally, due to this parcel being the last vacant lot on the NW Arizona Avenue couplet, the street section should mirror the sidewalk, bulb-outs, tree wells, and parking section as constructed across the street in front of Market of Choice. Signage and striping will be reviewed during the infrastructure permit review.

The TSP shows NW Sisemore Street continuing south of NW Arizona Avenue as a collector. The development will be required to dedicate 80 feet of right of way and construct Sisemore Street to collector standards along their frontage.

A safety evaluation was provided and shows four crashes on NW Arizona Avenue along the property frontages. All of the crashes resulted in property damage and were non-injury.

Multimodal transit was assessed in the report. The area of development is a used by pedestrians, biker, and transit. Sidewalks will be provided on NW Arizona Avenue and Sisemore Street with NW Arizona Avenue sidewalks completing a network through the commercial area on NW Arizona Avenue. This section of NW Arizona Avenue is a candidate for a marked crosswalk. Striped bike lanes will be available on NW Arizona Avenue through the couplet and transit is available approximately ¼ mile west of the site.

The site plan identifies Sisemore Street to be constructed to constructed to an approximate width of 52 feet. The Development Code requires 56 feet for all collectors, however the Private Development Engineering Department agrees that this road section is overly sized for the area and doesn't match the existing Sisemore Street north of Arizona Avenue, creating issues for thru travel and getting lanes to match. The City is in the process of a standards and specs update, with the following street section proposed for the collector section with no parking. Having this street aligned with the existing Sisemore Street centerline will provide adequate and safe thru travel.

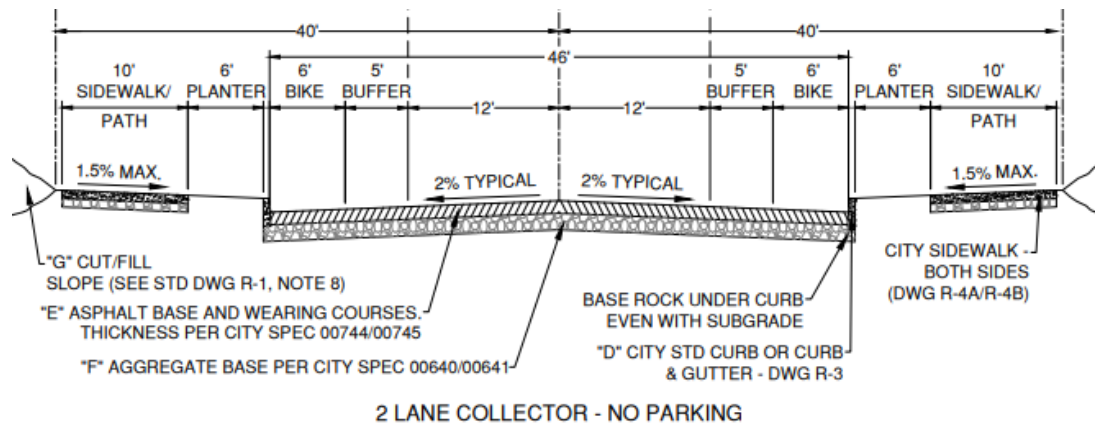


Figure 3: Sisemore Street cross section

Anticipated Mitigations:

Below are the anticipated mitigation requirements for the proposed site development. These points of mitigation can be modified upon the filing and review of the land use application, as there may be components that change or that were discussed in the burden of proof and may not have been brought to the City's attention. The site development is anticipated to have the following mitigation requirements:

Mitigation 1: A dedication of 80 feet is required for the extension of Sisemore Street. The extension will continue south of NW Arizona Avenue through the proposed development.

Mitigation 2: Right of way dedication on NW Arizona Avenue will be required along the property frontage where the full 60 feet of right of way does not exist. This is primarily along the newly created eastern parcel. Where the proposed parking stalls and sidewalks do not fit within the existing right of way, additional right of way dedication shall be provided. The dedication is required prior to issuance of building permits.

Mitigation 3: Construction of Sisemore Street to the City of Bend collector standard is required. The street section must include asphalt bound by curbs, sidewalk on both sides, and all pertinent drainage, signage, and striping.

Mitigation 4: A Waiver to Public Improvements Standards is required for the reduced right of way and special setbacks on NW Arizona Avenue from 80 feet to the existing 60 feet.

Mitigation 5: A Waiver to Public Improvements Standards is required for the reduction in pavement width from the Development Code required 56-foot wide pavement width to a 46-foot pavement width on Sisemore Street.

Mitigation 6: Frontage Improvements required to be constructed on NW Arizona Avenue will include a ten-foot sidewalk with tree wells, bulb-outs and curb realignment for parking bays, and possible relocation of drainage facilities.

Mitigation 7: Parking on NW Arizona Avenue must comply with the Development Code 3.3.500. No more than 4 vehicles can be parked in a row without a bulb constructed. Parking

must not be within clear vision area of intersections or driveways and not within the sight distance agrees as determined by AASHTO. The curb extensions will be installed where clear vision and sight distances are identified as being compromised by the on-street parking to prevent parking.

Mitigation 8: ADA ramps that are compliant with the City of Bend and PROWAG standards will be constructed on the corners of NW Arizona Avenue and Sisemore Street. Where the ramps to the north of Arizona Avenue do not align with the new ramp along the frontage, the northern ramps must be removed and replaced to conform to City standards. A marked crosswalk on the west side of Sisemore Street crossing NW Arizona Avenue will be installed. A luminaire will be installed to illuminate the pedestrian painted cross walk.

Mitigation 9: Two access points will be allowed onto NW Arizona Avenue. One access point on the western parcel will align with the entrance to Market of Choice. A second access point will be permitted on the eastern parcel. Both accesses are required to be constructed to City of Bend driveway apron standards and comply with PROWAG standards.

Mitigation 10: The new subdivision will provide one shared access point to lot C for the benefit of lots A, B, and D. Lots A, B and D will not have direct access points to NW Arizona Avenue. A shared access isle, 20-feet wide, extended from the east property line to the west property line of lot C without a spite strip will be required. The shared access, isle and no access to NW Arizona Avenue from lots A, B and D will be recorded on the subdivision plat.


System Development Charges (SDCs):

The Trip Generation Rate and/or land use category used in this review may not directly relate to how the City determines the System Development Charges (SDCs) for the development. SDCs will be determined during permitting and is based on the current City fee structure.

Duration of Approval:

If a land use application is not filed within six (6) months from the date this memorandum was signed, this approval shall be void.

WRITTEN BY: Jill Clough, Associate Engineer
jclough@bendoregon.gov
(541) 388-5539

APPROVED BY:  **DATE: 7/12/2022**
Deedee Fraley, PE Assistant City Engineer