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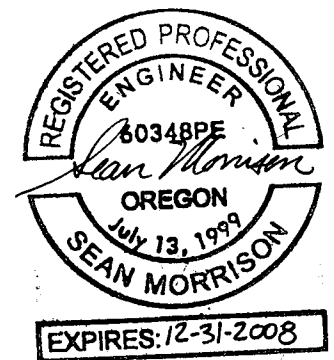
MACKENZIE

TRANSPORTATION
IMPACT ANALYSIS

**BENNION/FELLER
INDUSTRIAL
PROPERTY**

**PLAN AMENDMENT/
ZONE CHANGE**

Donald, Oregon



Prepared For
Sandorffy-Bennion
Development

Completed On
September 28, 2007

Submittal To
Marion County

Project Number
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I. INTRODUCTION

This transportation impact analysis (TIA) has been prepared to support the comprehensive plan amendment and zone change application for the Bennion/Feller Industrial Property. The analysis addresses the Transportation Planning Rule (TPR) requirements as outlined in Oregon Administrative Rule (OAR) 660-012-0060(1) stating, *“Where an amendment to functional plan, an acknowledged comprehensive plan, or a land use regulation would significantly affect an existing or planned transportation facility, the local government shall put in place measures... to assure that allowed land uses are consistent with the identified function, capacity, and performance standards (e.g. level of service, volume to capacity ratio, etc.) of the facility.”*

PROJECT DESCRIPTION

The subject property is approximately 30 acres in size and is bound by Butteville Road to the west and Donald city limits to the south. Figure 1 is a vicinity map showing project location. The current property zone designation is Exclusive Farm Use/Residential Single-Family (EFU/RS). The proposed Rural Marion County zone designation is Industrial (I).

This analysis supports a plan amendment and zone change application by addressing TPR requirements and impacts resulting from a reasonable “worst-case” development scenario in the proposed industrial zone designation. **For the proposed Industrial zone, the reasonable “worst-case” development is assumed to be general warehouse with 40% building area coverage. This is a change from the June 15, 2007 Group Mackenzie Revised Proposed Scope for Traffic Impact Analysis based on a review of allowed uses in the Marion County Industrial (I) zone. Of the allowed uses, Warehouse has the highest trip generation rate.** The list of allowed uses in the Industrial zone is included in the appendix.

SCOPE OF REPORT

This analysis conforms to the Marion County and ODOT requirements for a traffic study including a review of local intersection impact analysis. Based on review of the applicable standards and a discussion with staff, the study area for this analysis includes the following intersections.

TABLE 1 – STUDY INTERSECTIONS	
Intersection	Jurisdiction
Ehlen Road / Butteville Road	Marion County
Ehlen Road / Bents Court	Marion County
Ehlen Road / Bents Road	Marion County
Ehlen Road / I-5 SB Ramps	Marion County/ODOT
Ehlen Road / I-5 NB Ramps	Marion County/ODOT

To address TPR requirements, analyses must compare reasonable “worst-case” trip generation impacts of land uses allowed in the current and proposed zone designations and must evaluate impacts in the planning horizon year. The planning horizon of the Marion County Transportation System Plan (TSP) is 2025. Therefore, analysis scenarios include:

- 2007 Existing Conditions
- 2025 Current Zone Designation with Existing Infrastructure
- 2025 Proposed Zone Designation with Existing Infrastructure
- 2025 Current Zone Designation
- 2025 Proposed Zone Designation

II. EXISTING CONDITIONS

EXISTING SITE CONDITIONS

The 30-acre Bennion/Feller Industrial Property is currently undeveloped and is adjacent to the City of Donald Urban Growth Boundary. The current Marion County property comprehensive plan designation is Primary Agriculture. Current property zoning is Exclusive Farm Use/Residential Single-Family (EFU/RS). Property access is directly to Butteville Road.

TRANSPORTATION FACILITIES

The following table summarizes study area roadway classifications and descriptions as identified by Group Mackenzie staff:

TABLE 2 – ROADWAY CHARACTERISTICS						
Roadway	Classification	Posted Speed	Travel Lanes	Bike Lanes	On-Street Parking	Sidewalks
Ehlen Road	Arterial	35/55	2	No	No	No
Butteville Road	Major Collector	25/55	2	No	No	No
Bents Court	Collector	35	2	No	No	No
Bents Road	Collector	35	2	No	No	No
Interstate 5	Principal Arterial	65	6	No	No	No

All study intersections are currently unsignalized.

PLANNED TRANSPORTATION FACILITIES

The Marion County TSP identifies several projects in the study area. These include:

Ehlen Road/Butteville Road – Signalize intersection and construct necessary supporting roadway approach geometry. The project is unfunded, no construction timeline is identified, and the estimated project cost is \$750,000.

P&W Railroad crossing of Butteville Road – Install mechanical gate crossings, with possible roadway realignment. The project is identified on the 20-year financially constrained plan (5-10 year list) and is funded at \$200,000.

Bents Road/Ehlen Road – Realign Bents Road to the west to align with Bents Court, and signalize intersection. Project could be done concurrent with interchange improvements. The project is identified on the 20-year financially constrained list and is funded at \$1.1 million.

Ehlen Road/I-5 Interchange Ramp Terminal Intersections – Identified as a State Highway Safety Need. The TSP specifically identifies poor alignments, poor ramp turning radii, low capacity and high delay, and crash problems. It recommends widening Ehlen Road at the interchange, installing signals at the ramp terminal intersections, and realigning Bents Road or redesigning the interchange.

The Ehlen Road/I-5 Interchange Ramp Terminal Intersections project is not identified as funded TSP improvement; however, Marion County has established a funding mechanism in a sub-area plan to collect monies to construct interchange improvements. These improvements are currently identified as traffic signals at the two I-5/Ehlen Road ramps and the Ehlen Road/Bents Road intersection. Specific development contributions to these improvements are identified later in this analysis.

Large-scale improvements, such as ramp widening, are outside the scope of this funding mechanism and are the responsibility of ODOT.

Figure 3 depicts existing and planned (2025) intersection approach geometries with the planned infrastructure improvements.

CRASH ANALYSIS

When evaluating the relative safety of an intersection, consideration is given not only to the total number and types of crashes occurring, but also to the number of vehicles entering the intersection. This leads to the concept known as “crash rate,” which is usually expressed in terms of the number of crashes occurring per one million vehicles entering the intersection (mev). Intersections having a crash rate less than 1.0/mev are generally considered relatively safe. At crash rates higher than 1.0/mev, consideration may be given to correcting operational problems.

Crash data for the study area intersections were obtained from ODOT staff for the years 2002 through 2006. Annual traffic entering the intersections was estimated by multiplying the annual daily traffic (ADT) entering the intersection by 365. ADT was estimated by multiplying the intersection PM peak hour volumes by 10. Crash data and crash rates for the study area intersections is presented in the following table:

TABLE 3 – CRASH RATES								
Intersection	2002	2003	2004	2005	2006	Total	ADT	Rate
Ehlen Road / Butteville Road	4	6	2	5	2	19	7,990	1.30
Ehlen Road / Bents Road	0	0	0	1	0	1	10,620	0.05
Ehlen Road / I-5 SB Ramps	3	4	0	2	0	9	12,210	0.40
Ehlen Road / I-5 NB Ramps	2	2	6	2	6	18	10,860	0.91

Intersection Crash Summary

Crash rates at the Ehlen Road/Bents Road, Ehlen Road/I-5 Southbound Ramps and Ehlen Road/I-5 Northbound Ramps intersections are all below the threshold rate of 1.0/mev; therefore, it is concluded these intersections do not currently warrant further consideration for safety mitigation measures.

The Ehlen Road/Butteville Road intersection has a crash rate greater than 1.0/mev. As identified in the Marion County TSP, mitigation to correct deficiencies involves signalized intersection and construct necessary supporting roadway approach geometry.

EXISTING TRAFFIC COUNTS

Existing traffic counts were obtained in June 2007. The weekday traffic counts were obtained between 3:00 and 6:00 PM on a mid-week day. Count summaries are included in the appendix.

A seasonal adjustment factor of 3.4% was applied to the traffic volumes at ODOT facilities. The adjustment factor is based on the Seasonal Trend Table and reflects an average between the factors for the “interstate nonurbanized” and “agricultural” peak period seasonal factors. Figure 4 illustrates 2007 existing traffic with the adjusted design volumes.

It should be noted that a system wide peak hour for all the study intersection was used in the analysis. The peak hour factors and heavy vehicle percentages were adjusted for the system-wide peak hour.

III. CURRENT PLAN DESIGNATION CONDITIONS

BACKGROUND TRAFFIC GROWTH

Background growth is general growth in traffic not related to traffic from specific projects. An annual growth rate for each intersection was calculated and used based on future traffic volumes demand projections presented in Table 6-2 of the Marion County Rural Transportation System Plan. These annual growth rates for each intersection were applied to 2007 volumes to determine 2025 volumes. 2025 Background traffic growth is presented in Figure 5. Table 6-2 and growth calculations are included in the appendix.

IN-PROCESS TRAFFIC

In-process traffic is defined as traffic anticipated to be generated by approved projects not yet constructed. The purpose of determining in-process traffic is to identify near-term impacts resulting from development in excess of general planning growth assumptions. According to Marion County transportation staff there is no in-process traffic to include.

CURRENT ZONE DESIGNATION TRAFFIC VOLUMES

Current zone designation traffic volumes are the estimated future traffic volumes without the subject plan amendment and zone change application. 2025 Current Zone Designation traffic is the sum of 2007 existing traffic and 18 years of background growth and is illustrated in Figure 6.

IV. SITE DEVELOPMENT

DEVELOPMENT SCENARIO

The plan amendment and zone change application must address TPR requirements as outlined in OAR 660-012-0060. As such, planning horizon conditions need to be addressed which are identified by the Oregon Highway Plan (OHP) as, *“The greater of 15 years or the planning horizon of the applicable local and regional transportation system plans for amendments to transportation plans, comprehensive plans or land use regulations.”*

To address these requirements, analyses must compare reasonable “worst-case” trip generation impacts of land uses allowed in the current and proposed zone designations and must evaluate impacts in the planning horizon year. The Marion County TSP was adopted in 2005. Therefore, the planning horizon of the Marion County TSP is 2025.

TRIP GENERATION – CURRENT ZONE DESIGNATION

Current Marion County comprehensive plan designation for the property is Primary Agriculture. Current property zoning is Exclusive Farm Use/Residential Single-Family (EFU/RS). Development in this zone designation is not anticipated to generate a significant number of vehicle trips. Therefore, as a conservative assumption in this analysis, no additional trip generation is assumed to result from development in the current designation.

TRIP GENERATION – PROPOSED ZONE DESIGNATION

As previously identified, this analysis presents the “worst-case” development scenarios in the proposed Industrial zone designation. A review of allowed uses in Chapter 165 of the Marion County Rural Zoning Ordinance showed warehouses as the highest trip generating land use.

The assumed “worst-case” development necessary to meet TPR analysis requirements is warehouse development with 40% building area coverage.

The following table presents trip generation estimates for the “worst-case” development scenario in the Industrial (I) zone designation. Trip generation for industrial uses are based on information contained in the Institute of Transportation Engineers (ITE) *Trip Generation Manual*, Seventh Edition.

TABLE 4 – TRIP GENERATION – PROPOSED ZONE DESIGNATION						
Use Description and Building Coverage ¹	ITE Code	Size	PM Peak Hour			Daily
			Enter	Exit	Total	Total
Warehouse (ITE Code 150) (40% Building Area Coverage)	110	525,000 SF	62	185	247	2,604

¹ Reference: Oregon Economic and Community Development Department Industrial Development Profile Matrix, May 2003.

For purposes of this analysis, all trips are assumed to be vehicle trips. No additional reductions are made for trips made by alternate modes.

TRIP DISTRIBUTION AND TRAFFIC ASSIGNMENT

Trip distribution for the development scenario was determined based on existing roadway traffic volumes, anticipated trip origins and destinations, and engineering judgement. Trip distribution and resulting traffic assignment are shown in Figure 7.

2025 PROPOSED ZONE DESIGNATION TRAFFIC VOLUMES

Proposed Zone Designation traffic volumes are the sum of Current Zone Designation traffic volumes and worst-case development Proposed Zone Designation assigned traffic volumes. 2025 Proposed Zone Designation traffic volumes are presented in Figure 8.

V. INTERSECTION AND ROADWAY ANALYSIS

OPERATION ANALYSIS DESCRIPTION

Intersection operation characteristics are generally defined by two measurements: volume-to-capacity (v/c) ratio and level-of-service (LOS). ODOT uses v/c ratio to determine intersection performance and Marion County uses both v/c and LOS. Since both agencies have roadways within the project impact area, both measurements are included in the analysis.

Volume-to-capacity (v/c) ratio is a measurement of capacity used by a given traffic movement for an entire intersection. It is defined by the rate of traffic flow or traffic demand divided by the theoretical capacity. Based on the January 2001 revision to the 1999 Oregon Highway Plan (OHP), I-5 is a Statewide National Highway System (NHS) Freight Route. The OHP requires a maximum v/c ratio of 0.85 be maintained at all ramp terminal intersections. The Marion County v/c standard for signalized and unsignalized intersections is 0.85 or less.

LOS is a measure of the average control delay (in seconds) experienced by drivers at an intersection and is described by a letter on the scale from 'A' to 'F'. LOS 'A' represents optimum operating conditions and minimum delay. LOS 'F' indicates over capacity conditions causing unacceptable delay. Marion County considers LOS 'D' the acceptable minimum standard for signalized and all-way stop controlled intersections with individual movements operating at LOS 'E' or better. Other unsignalized intersections shall operate at LOS 'E' or better, although LOS 'F' may be allowed if the movement has a relatively low volume and there is no indication that a safety problem will be created.

OPERATION ANALYSIS

Operation analyses were performed for the weekday PM peak hour at the four study intersections for three different scenarios as follows:

- 2007 Existing Conditions
- 2025 Current Zone Designation with Existing Infrastructure
- 2025 Proposed Zone Designation with Existing Infrastructure
- 2025 Current Zone Designation
- 2025 Proposed Zone Designation

As previously identified, analyses contained in this report were prepared to support a plan amendment and zone change application, not a specific land use application. Therefore, analysis scenarios contemplate transportation impacts resulting from a reasonable worst-case development scenario at the end of the planning period (2025).

Analyses also assume projects identified in 20-year funded list of the Marion County TSP have been constructed. This includes improvements at the Ehlen Road/I-5 interchange ramp terminal intersections identified in the sub-area plan that are funded via a specific Marion County assessment policy.

The computer program Synchro, using Highway Capacity Manual (HCM) techniques, was used to calculate v/c ratios and LOS at the study intersections that are summarized in the following tables. Data output sheets from analyses can be found in the appendix.

The following table presents the results of the intersection operation analyses.

TABLE 5 – INTERSECTION OPERATION ANALYSIS – PM PEAK HOUR												
Intersection	Intersection Control	Movement	2007 Existing Conditions		2025 Current Zone Designation with Existing Infrastructure		2025 Proposed Zone Designation with Existing Infrastructure		2025 Current Zone Designation		2025 Proposed Zone Designation	
			v/c	LOS	v/c	LOS	v/c	LOS	v/c	LOS	v/c	LOS
Ehlen Rd / Butteville Rd	Two-Way Stop	NB	0.25	B	0.75	E	1.39	F				
		SB	0.17	C	0.64	F	1.03	F				
	All-Way Stop								0.57	C	0.61	E
Ehlen Rd / Bents Ct	Two-Way Stop	NB Left	0.02	B	0.06	C	0.08	C				
Ehlen Rd / Bents Rd	Two-Way Stop	SB	0.61	E	2.68	F	3.84	F				
Ehlen Rd / Bents Ct / Bents Rd	Signalized								0.79	B	0.83	C
Ehlen Rd / I-5 SB Ramps	Two-Way Stop	SB	0.78	E	2.46	F	3.13	F				
	Signalized								0.69	C	0.74	C
Ehlen Rd / I-5 NB Ramps	Two-Way Stop	NB	1.00	F	3.70	F	6.28	F				
	Signalized								0.71	D	0.81	D

The **Ehlen Road/Butteville Road** intersection currently meets performance standards for capacity and LOS but is anticipated to exceed standards for two-way stop-controlled intersections for LOS with or without the proposed plan amendment and zone change in 2025. With an all-way stop controlled intersection the standard is met in the 2025 current zone designation scenario but in the 2025 proposed zone designation scenario the LOS ‘D’ standard is exceeded. The LOS for the intersection exceeds Marion County standards due to the eastbound through approach, which operates at LOS ‘F’. The Bennion/Feller Industrial plan amendment/zone change ‘worst-case’ scenario does not add any trips to the eastbound through movement.

The **Ehlen Road/Bents Court** intersection meets standards for capacity and LOS with or without the proposed plan amendment/zone change.

The **Ehlen Road/Bents Road** intersection currently does not meet Marion County standards for capacity and LOS, and will not meet the County standard in the plan year with the existing infrastructure.

The **Ehlen Road/Bents Court/Bents Road** realigned and signalized intersection will meet standards for capacity and LOS for the 2025 current and proposed zone designations.

The **Ehlen Road/I-5 SB Ramps** intersection currently meets standards for capacity and LOS but will not meet the ODOT standard in the plan year with existing infrastructure. With the planned Marion County improvements funded by the sub-area plan, the ramp terminal intersection will meet ODOT standards in 2025 with and without the proposed plan amendment and zone change.

The **Ehlen Road/I-5 NB Ramps** intersection currently does not meet ODOT standards for capacity and LOS and will continue to do so with the existing infrastructure. With the planned Marion County improvements funded by the sub-area plan, the ramp terminal intersection is anticipated to meet ODOT standards in 2025 with and without the proposed plan amendment and zone change.

QUEUING ANALYSIS

Analyses were performed at the study intersections to determine the existing and anticipated 95th percentile queue lengths during the weekday PM peak hour. SimTraffic software was used with a queue storage assumption of 25 feet per vehicle. Queuing calculation worksheets are located within the appendix. The existing and anticipated queue lengths at the study intersection approaches for the weekday PM peak hour are listed in the tables below.

TABLE 6 – QUEUE LENGTHS (FEET) – PM PEAK HOUR							
Intersection	Lane Group	Movement	2007 Existing Conditions	2025 Current Zone Designation with Existing Infrastructure	2025 Proposed Zone Designation with Existing Infrastructure	2025 Current Zone Designation	2025 Proposed Zone Designation
Ehlen Rd / Butteville Rd	EB	Lt	25	25	25	50	75
	WB	Lt	75	75	75	150	175
	NB	Lt	75	125	425	50	150
		Rt				75	200
	SB	Lt	50	75	75	75	75
		Rt				75	75
Ehlen Rd / Bents Ct	NB	Lt	25	25	50	50	50
		Rt	50	75	75	75	75
Ehlen Rd / Bents Rd	SB	Lt	150	>999	>999	150	150
		Rt				150	150
Ehlen Rd / Bents Rd / Bents Ct	EB	Lt	150	150	150	150	200
		Th	925	925	925	925	>999
		Rt	925	925	925	925	>999
	WB	Lt	50	50	50	50	50
		Th	700	700	700	700	775
		Rt	700	700	700	700	775
	NB	Lt	25	25	25	25	50
		Th	100	100	100	100	125
		Rt	100	100	100	100	125
	SB	Lt	350	350	350	350	400
Th		550	550	550	550	>999	
Rt		550	550	550	550	>999	

TABLE 6 – QUEUE LENGTHS (FEET) – PM PEAK HOUR

Intersection	Lane Group	Movement	2007 Existing Conditions	2025 Current Zone Designation with Existing Infrastructure	2025 Proposed Zone Designation with Existing Infrastructure	2025 Current Zone Designation	2025 Proposed Zone Designation
Ehlen Rd / I-5 SB Ramps	EB	Th	100	125	125	>999	825
		Rt				250	250
	WB	Lt	125	250	350	225	225
		Th				425	450
	SB	Lt	350	400	400	300	450
						Th	325
Rt							
Ehlen Rd / I-5 NB Ramps	EB	Lt	125	200	275	225	175
		Th				425	350
	WB	Lt	25	25	125	>999	>999
		Th				150	150
	NB	Lt	400	425	425	325	475
						Th	275
Rt							

The proposed plan amendment and zone change will not significantly affect queue lengths.

MITIGATION

The identified mitigation is consistent with the recommended improvements to the study area and the planned infrastructure improvements identified in the Marion County TSP. The following are the recommended improvements for the study intersections:

Based on our understanding of the TPR, if a transportation facility does not meet the applicable jurisdiction operating standard in the plan year, then mitigation must be identified that will accommodate the proposed plan amendment without further degrading the intersection. If the intersection meets operating standards in the plan year with the current zone designation, but not with the proposed zone designation, then the operating standard must be met.

Our analysis indicates that with the existing infrastructure, with or without the proposed plan amendment and zone change, the study area intersections will not meet ODOT or Marion County operating standards in the plan year.

Accounting for the projects that either have a County funding source or have been identified on the Fiscally Constrained project list of the TSP, we have identified one intersection that will require additional mitigation.

The Ehlen Road/Butteville Road intersection is anticipated to exceed Marion County standards in the PM peak hour for all-way stop controlled intersections in the 2025 Proposed Zone Designation scenario. To meet Marion County standards for the 2025 Proposed Zone Designation, the intersection requires a traffic signal. This mitigation is consistent with the findings associated with the 2005 Specht Development study. The signalization project is identified in the Marion County TSP, but is not on the Fiscally Constrained funded list. The County estimated cost of improvement is \$750,000.

The following table shows the results of the added mitigation to the Ehlen Road/Butteville Road intersection, Synchro analysis worksheets are located within the appendix.

TABLE 7 – IDENTIFIED MITIGATION – PM PEAK HOUR						
Intersection	Intersection Control	Mitigation	2025 Proposed Zone Designation (Pre-Mitigation)		2025 Proposed Zone Designation (Post-Mitigation)	
			v/c	LOS	v/c	LOS
Ehlen Road / Butteville Road	Two-Way Stop	Signal	0.61	E	0.59	B

VI. IMPROVEMENTS TIMING AND FUNDING

Consistent with TPR requirements, analyses in this TIA assume projects that are identified in the 20-year funded list of the Marion County TSP have been constructed. This includes improvements at the Ehlen Road/I-5 interchange ramp terminal intersections and the realignment of the Bents Road/Ehlen Road intersection. Both projects are identified in the sub-area plan and are funded via a specific Marion County assessment policy.

It is important to note, approval of the comprehensive plan amendment and zone change application for the Bennion/Feller Industrial Property does not itself generate trips. Rather, a specific land use, approved via a specific development application, generates trips. As shown in this TIA, with the planned improvements, the worst-case land use assumption for the proposed plan amendment and zone change results in intersections operating at acceptable standards in the plan year. Therefore, with any future land use application the intersections are also anticipated to operate at acceptable standards in the plan year.

The following section, provided for illustrative purposes only, identifies the specific Marion County assessment policy established to fund future infrastructure relative to the worst-case development scenario presented in this TIA. As previously stated, approval of the comprehensive plan amendment and zone change application does not itself generate trips; therefore, fees should be assessed based on a future specific development application.

MARION COUNTY TRANSPORTATION IMPACT FEE – AURORA/DONALD INTERCHANGE

To address increasing congestion issues in the Fargo interchange area, Marion County prepared a sub-area plan. This plan has several recommendations including access management, bicycle/pedestrian improvements, and an impact fee mechanism to collect funds for interim improvements. Improvements include future traffic signals, additional traffic lanes and/or other capacity improvements, specifically at the Ehlen Road/I-5 NB ramp terminal intersection, the Ehlen Road/I-5 SB ramp terminal intersection, and at the realigned Bents Road-Bents Court/Ehlen Road intersection.

Future development is assessed based on the percentage of traffic added to each intersection during an average day. According to Marion County, the average entering daily traffic volumes are 11,500 at the Ehlen Road/I-5 NB Ramps intersection, 14,500 at the Ehlen Road/I-5 SB Ramps intersection, and 11,500 at the realigned Bents Road-Bents Court/Ehlen Road intersection. The improvement costs at each intersection is estimated to be \$500,000 in 2004 dollars and will be adjusted according to the Seattle Cost of Construction Index as published annually in the December issue of "Engineering News Record."

In addition to the improvements identified in the Marion County sub-area plan, Group Mackenzie has identified in the 2025 proposed zone designation scenario the need for a traffic signal at the Ehlen Road/Butteville Road intersection. The traffic signal and necessary supporting roadway approach geometry is identified in the Marion County TSP; however, it is not funded. The Marion County TSP estimated cost of the improvements is \$750,000.

To determine the potential proportional assessment for the Bennion/Feller Industrial Property the previously identified “worst-case” development scenario was evaluated. The sub-area plan methodology states the fee is based on the percentage of traffic added by the development at each intersection during an average day. Trip distribution for the development scenarios is presented in Figure 7.

With trip distribution known, trip percentages and resulting daily trips at each intersection were calculated and are shown in the following table.

Land Use Designation	Total Daily Trips	Ehlen Rd/ NB Ramp		Ehlen Rd/ Butteville Rd and Bents Rd/Bents Ct and SB Ramp	
		%	Trips	%	Trips
Warehouse	2,604	65%	1,693	90%	2,344

With the number of trips known at the individual intersections, the proportionate share of the intersection improvement costs was calculated based on a percentage of the measured existing daily intersection volumes. The following table shows the proportionate costs based on the “worst case” scenario.

Land Use Designation	Intersection	Established Intersection Volume	Daily Development Trips	% of Total Volume	Proportional Assessment ¹
Warehouse	Ehlen Rd/Butteville Rd	7,150	2,344	24.69%	\$185,170
	Bents Rd/Bents Ct	11,500	2,344	16.93%	\$84,660
	Ehlen Rd/SB Ramp	14,500	2,344	13.91%	\$69,580
	Ehlen Rd/NB Ramp	11,500	1,693	12.83%	\$64,165
	Total				

¹ Assessment in 2004 dollars and may be adjusted according to the Seattle Cost of Construction Index.

As illustrated in the previous tables, the worst-case development scenario’s proportionate share costs for the improvements are estimated to be \$403,575.

This calculation has been provided for illustrative purposes only. Approval of this comprehensive plan amendment and zone change application does not itself generate trips; therefore, fees should not be assessed based on this analysis. Rather, via conditions of approval for this application, **fees should be assessed based on daily trip generation resulting from a specific land use identified in a future specific development application.**

VII. SUMMARY

This analysis has been prepared to address Transportation Planning Rule requirements. Oregon Administrative Rule (OAR) 660-012-0060(1) states, “Where an amendment to functional plan, an acknowledged comprehensive plan, or a land use regulation would significantly affect an existing or planned transportation facility, the local government shall put in place measures... to assure that allowed land uses are consistent with the identified function, capacity, and performance standards (e.g. level of service, volume to capacity ratio, etc.) of the facility.” As identified in this analysis, the proposed change in plan designation can be approved with implementation of the identified mitigation.

The following conclusions and recommendations are specifically based on materials contained in this analysis:

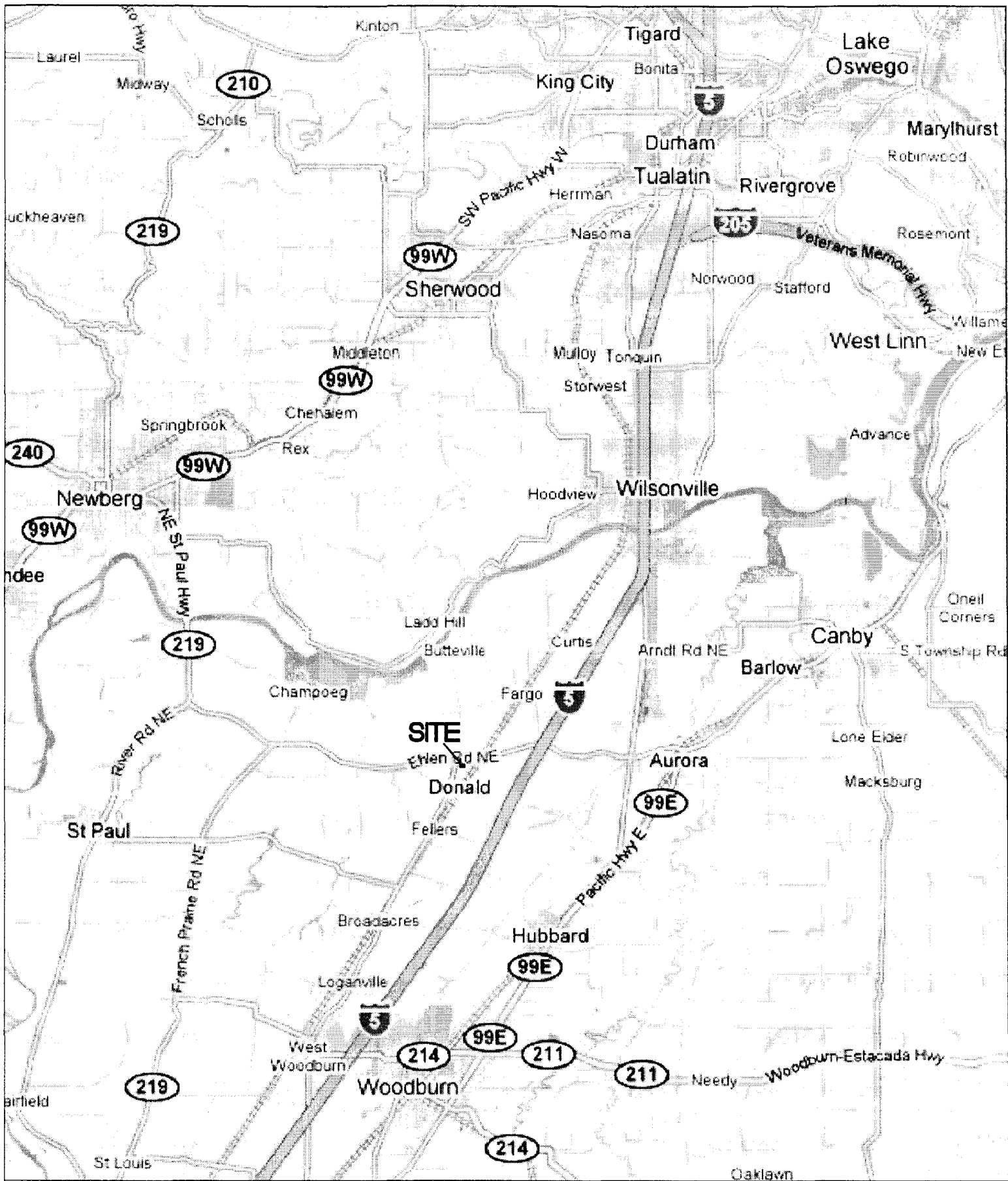
1. The reasonable “worst-case” development scenario for the 30-acre Bennion/Feller property in the proposed Rural Marion County Industrial (I) zone designation is a 525,000 SF Warehouse (40% lot coverage) generating 2,604 daily and 247 PM peak hour trips.
2. Planned infrastructure improvements identified in the Marion County TSP and the sub-area plan include improvements at the Ehlen Road/Butteville Road intersection, the P&W Railroad crossing of Butteville Road, Bents Road/Ehlen Road realignment, and Ehlen Road/I-5 Interchange Ramp Terminal intersections. All improvements are assumed constructed in the plan year (2025) except the identified but unfunded traffic signal at the Ehlen Road/Butteville Road intersection.
3. Crash rates at all but one study area intersection (Ehlen Road/Butteville Road) are below the threshold rate of 1.0/mev. Mitigation identified in the Marion County TSP to signalize the intersection and improve the supporting roadway approach geometry are anticipated to correct existing safety deficiencies.
4. Background growth and seasonal volume adjustments were added to the existing traffic volumes to establish traffic volumes for the 2025 Current Zone Designation. The existing EFU/RS zoning was not assumed to generate any trips.
5. The 2025 Proposed Zone Designation traffic volumes were presented as the sum of the 2025 Current Zone Designation and the worst-case development scenario for the Industrial (I) zoning.
6. With the planned and funded infrastructure improvements identified in the Marion County sub-area plan, in the 2025 Proposed Zone Designation scenario, all intersections will operate at acceptable LOS and v/c performance standards except for the Ehlen Road/Butteville Road intersection.
7. The Ehlen Road/Butteville Road intersection will operate at LOS ‘E’ in the 2025 Proposed Zone Designation scenario due to the eastbound through traffic on Ehlen Road. The Bennion/Feller property does not add trips to this movement. Consistent with the Marion County TSP, the intersection will require a traffic signal to operate at an acceptable level of service in the 2025 Proposed Zone Designation scenario. Based on the “worst-case” development scenario in the proposed zone, the estimated proportionate share of the estimated costs of improvements is approximately \$185,000.

8. Queuing is not significantly impacted by the proposed plan amendment and zone change.
9. Based on the “worst-case” development scenario in the proposed zone, the estimated contribution to the Marion County sub-area plan totals approximately \$218,400. Approval of this comprehensive plan amendment and zone change application does not itself generate trips; therefore, fees for planned infrastructure improvements should not be assessed based on this analysis. Rather, via conditions of approval for this application, fees should be assessed based on daily trip generation resulting from a specific land use identified in a future specific development application.

VIII. APPENDIX

- A. Figures
- B. Traffic Count Summaries
- C. Crash Data
- D. Background Growth
- E. Capacity Calculations
- F. Queuing Calculations
- G. Scope Letter & Requirements

APPENDIX A
Figures



GROUP
MACKENZIE

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 503.224.9560 360.695.7879 206.749.9993

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VICINITY MAP

BENNION/FELLER INDUSTRIAL PROPERTY
 DONALD, OREGON

FIGURE

1



NOT TO SCALE

EHLEN RD NE

STRUCURE
PARKING/DELIVERY
AREA

APPROXIMATE
STRUCUTURE
FOOTPRINT

BUTTEVILLE RD NE

SITE
ACCESS
DRIVEWAY

GROUP

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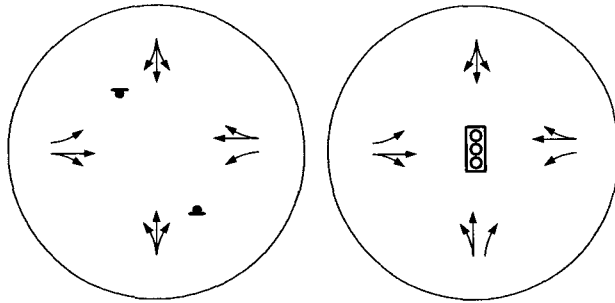
SITE PLAN

**BENNION/FELLER INDUSTRIAL PROPERTY
DONALD, OREGON**

FIGURE

2

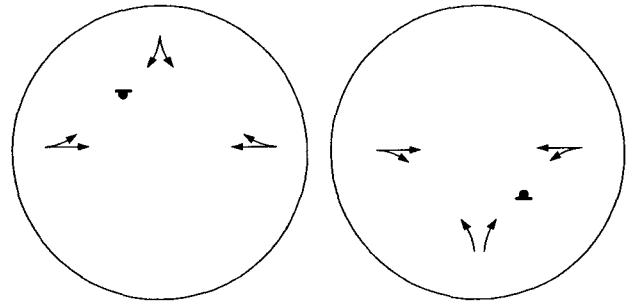
EHLEN ROAD / BUTTEVILLE ROAD



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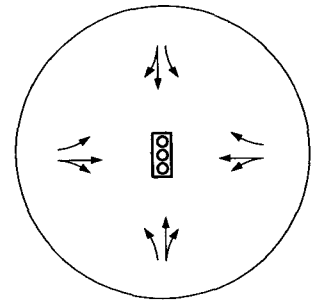
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EHLEN RD / BENTS RD / BENTS CT

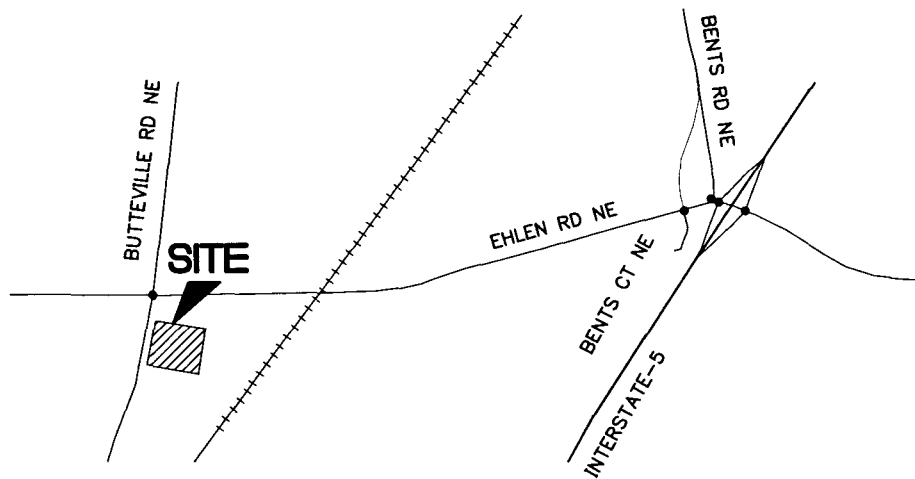


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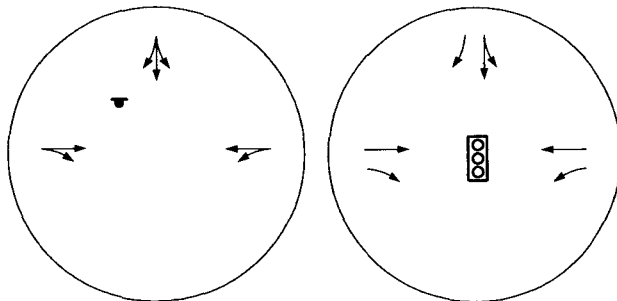
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PLANNED GEOMETRY



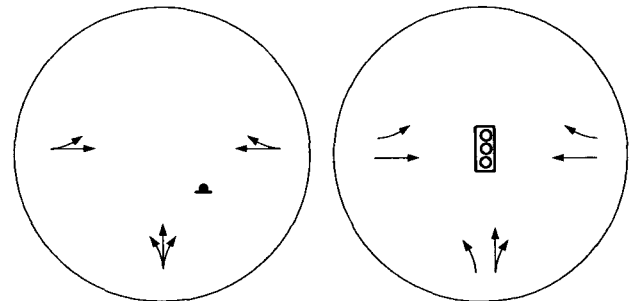
EHLEN ROAD / I-5 SB RAMPS



EXISTING GEOMETRY

PLANNED GEOMETRY

EHLEN ROAD / I-5 NB RAMPS



EXISTING GEOMETRY

PLANNED GEOMETRY

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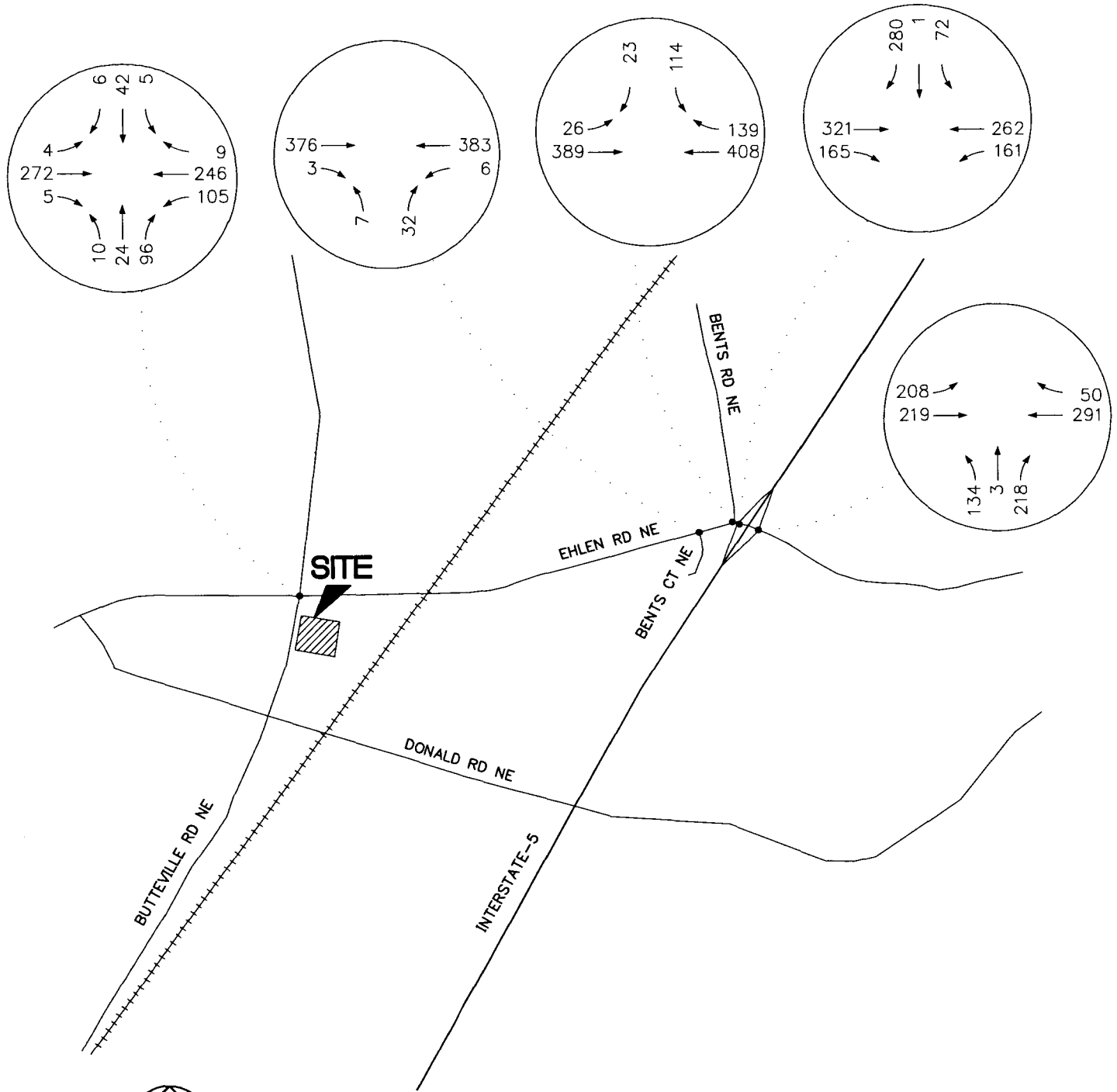
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EXISTING AND PLANNED
INTERSECTION GEOMETRIES

BENNION/FELLER INDUSTRIAL PROPERTY
DONALD, OREGON

FIGURE

3



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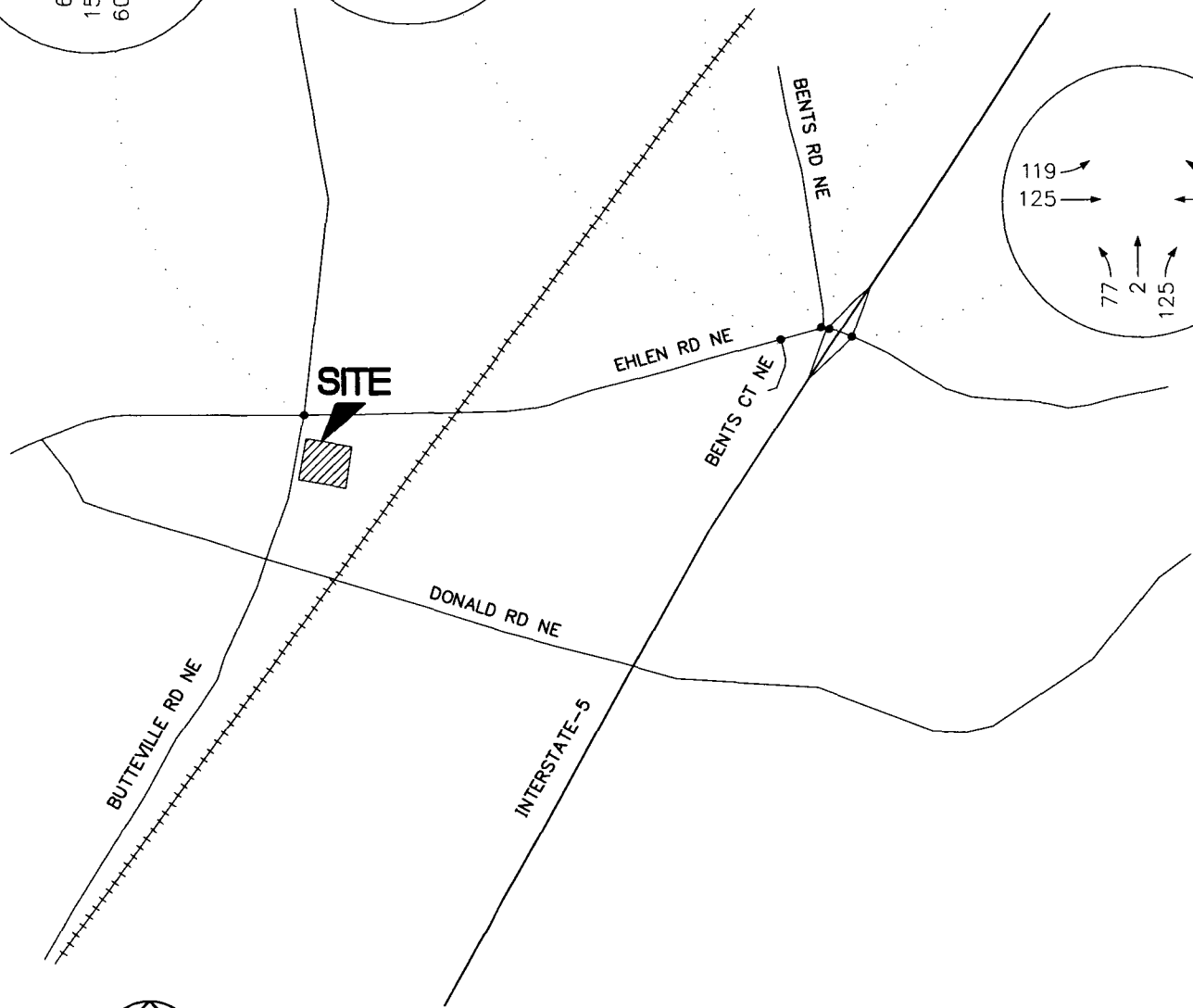
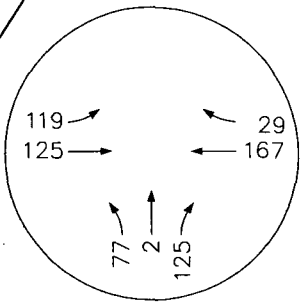
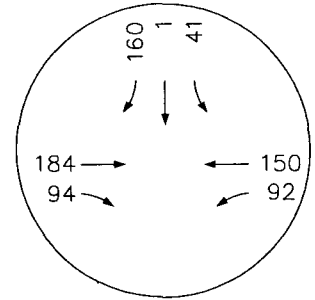
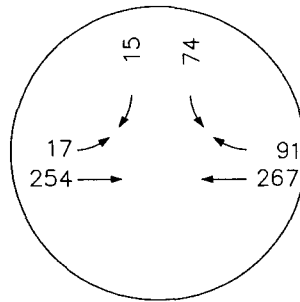
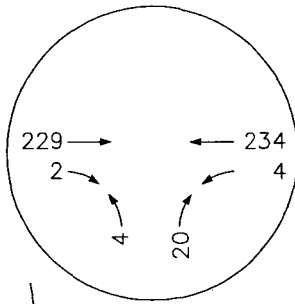
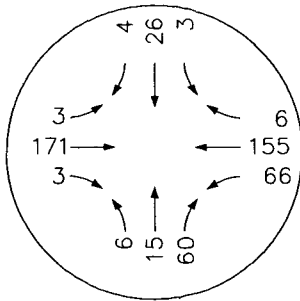
2007 EXISTING TRAFFIC INTERSECTION VOLUMES

BENNION/FELLER INDUSTRIAL PROPERTY DONALD, OREGON

FIGURE

4

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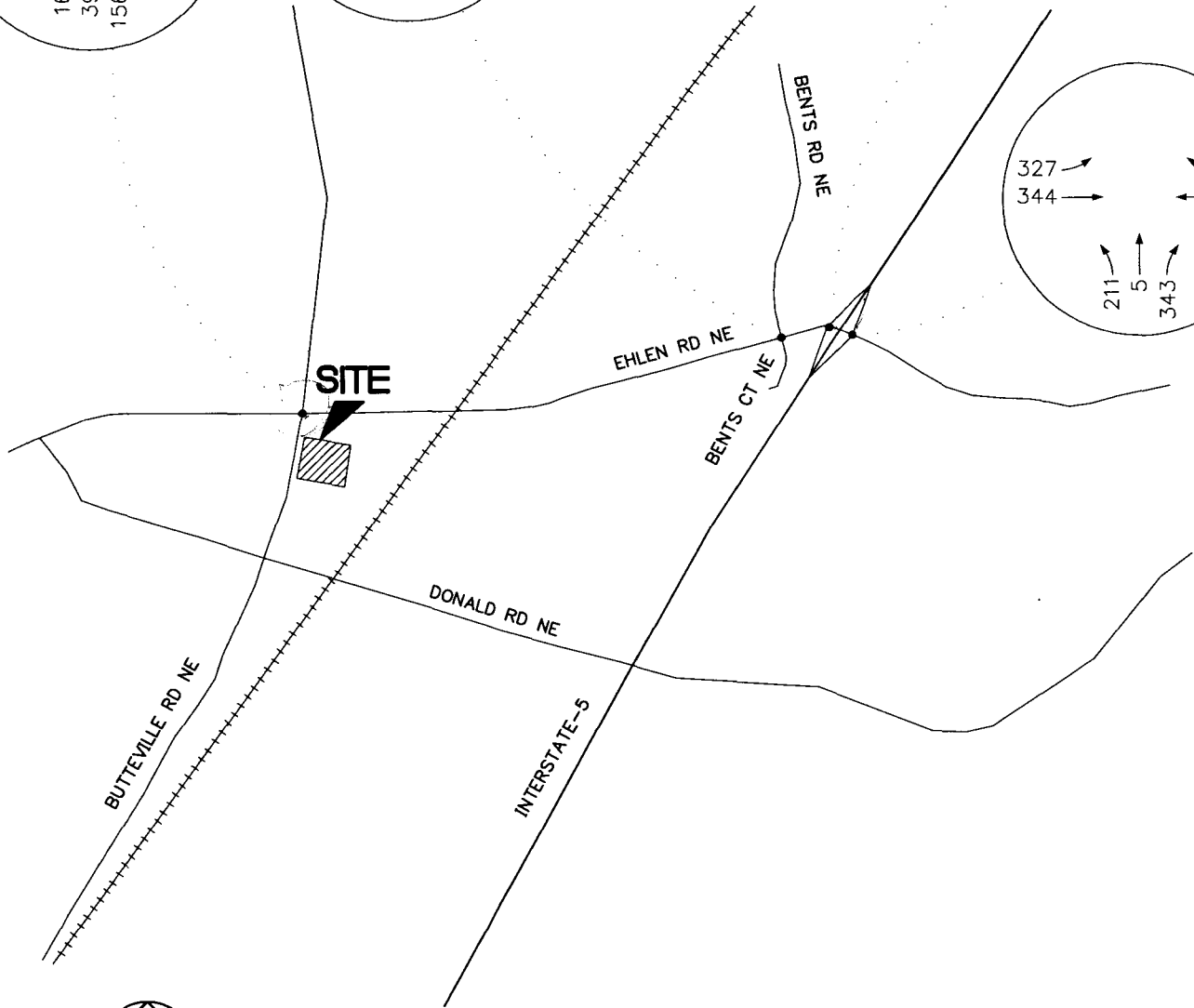
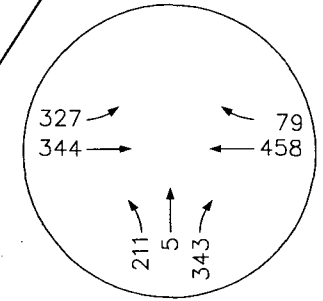
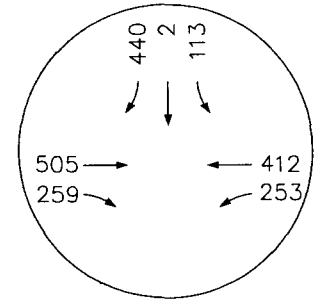
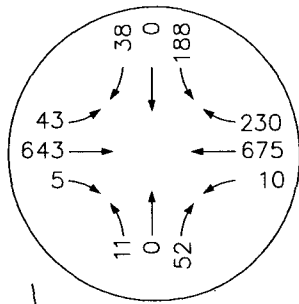
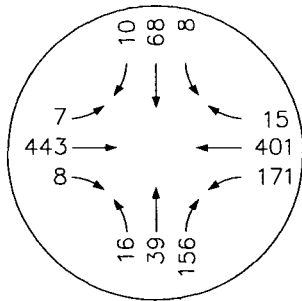
JOB NO:
2070204.00

**2025 BACKGROUND GROWTH
INTERSECTION VOLUMES**

**BENNION/FELLER INDUSTRIAL PROPERTY
DONALD, OREGON**

FIGURE

5



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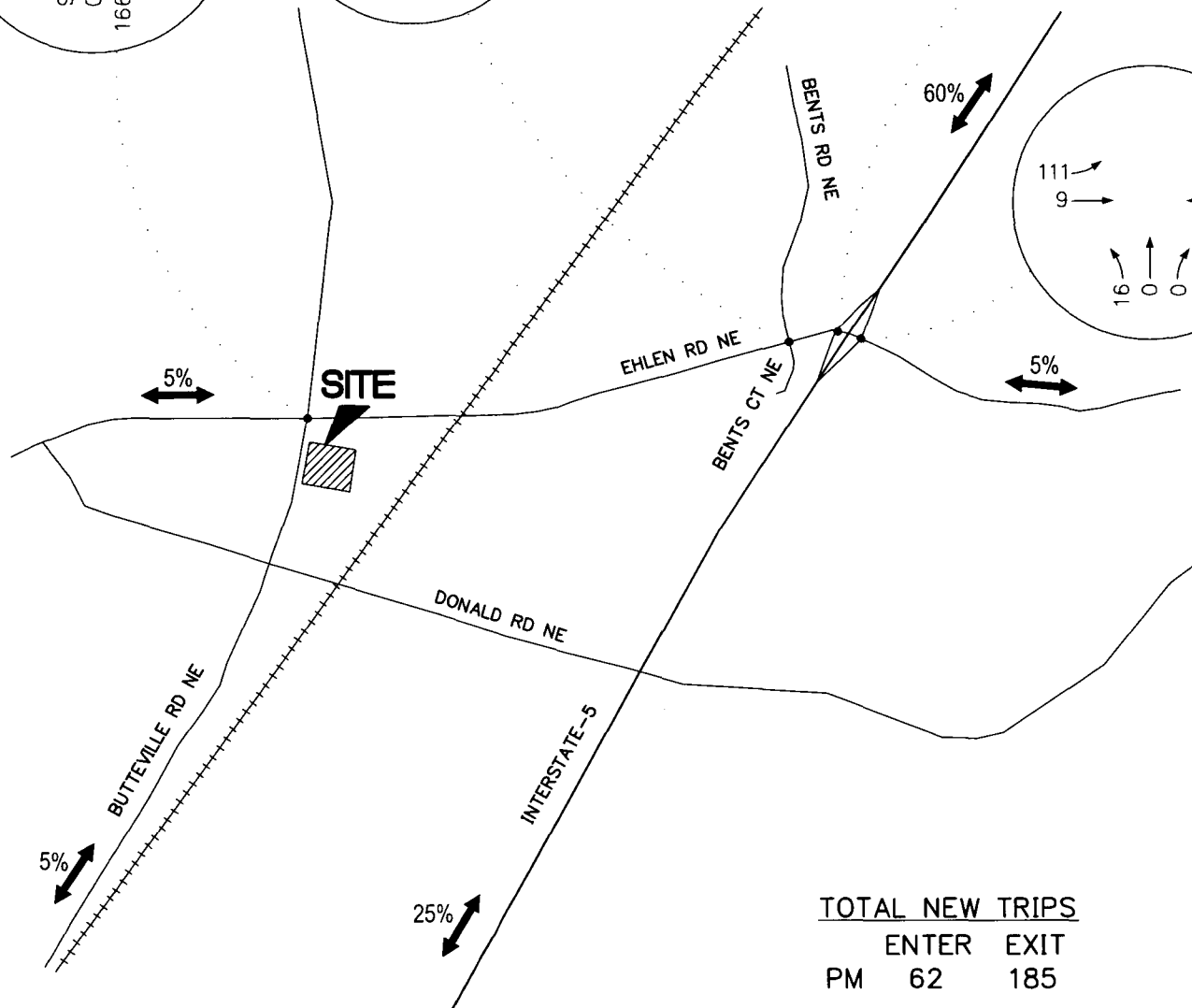
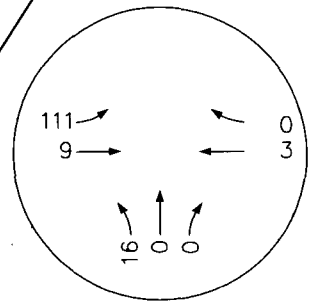
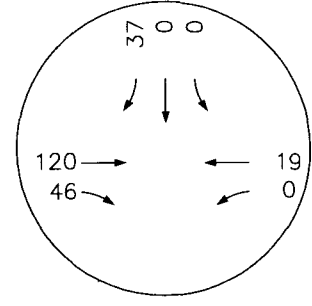
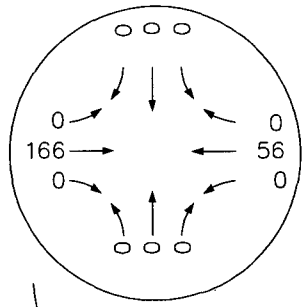
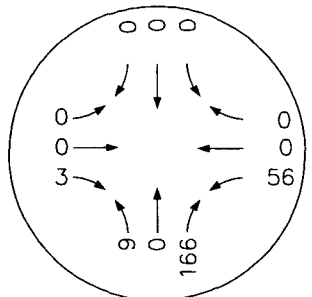
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2025 CURRENT ZONE DESIGNATION
INTERSECTION VOLUMES

BENNION/FELLER INDUSTRIAL PROPERTY
DONALD, OREGON

FIGURE

6



TOTAL NEW TRIPS		
	ENTER	EXIT
PM	62	185



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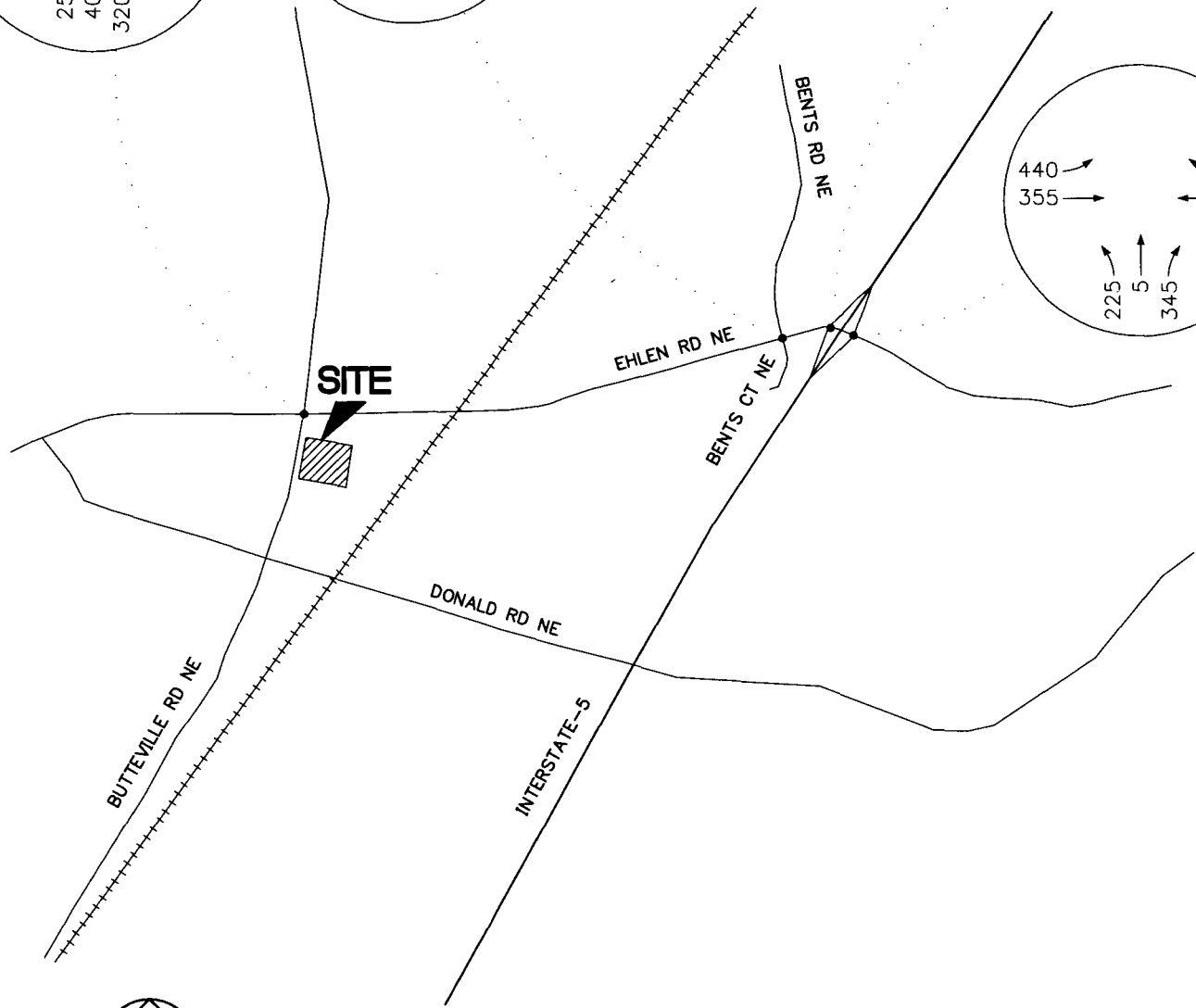
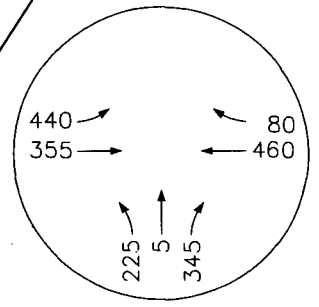
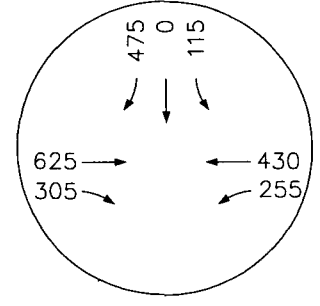
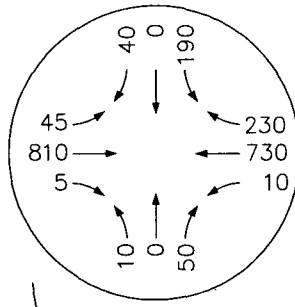
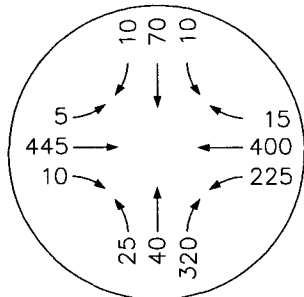
**TRIP DISTRIBUTION AND
TRAFFIC ASSIGNMENT**

**BENNION/FELLER INDUSTRIAL PROPERTY
DONALD, OREGON**

FIGURE

7

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**2025 PROPOSED ZONE DESIGNATION
INTERSECTION VOLUMES**

**BENNION/FELLER INDUSTRIAL PROPERTY
DONALD, OREGON**

FIGURE

8