CITY OF REDMOND
Community Development Department

411 SW 9th Street
Redmond, OR 97756
541-923-7724
www.redmondoregon.gov

REDMOND URBAN AREA PLANNING COMMISSION

411 SW 9th Street-COUNCIL CHAMBERS Redmond, OR 97756
Wednesday, May 20, 2026 5:30 PM

Oral comments can be provided in-person or virtually. For those who plan to provide oral comments virtually during the meeting, pre-register at planredmond@redmondoregon.gov (must pre-register before 3:00 PM on May 20, 2026)

Stream the meeting live at: www.redmondoregon.gov/PlanningCommissionLive

Agenda

RUAPC Members

Tobias Colvin, Chair

Mercedes Cook-Bostick, Vice-Chair

Heather DeWolf

Norman Schultz

Michael Rogers

Tom Kuhn

Ben Schimmoller

Ex-Officio Vacant

I. CALL TO ORDER / INTRODUCTIONS

II. CITIZEN COMMENTS FOR ITEMS NOT ON THE AGENDA

III. APPROVAL OF MINUTES
a. April 15, 2026

IV. PUBLIC HEARING
a. Redmond East Gateway: Zoning Map Amendment, Master Development Plan (File Nos.: 711-26-000038-ZMA, 711-26-000039-MD)

V. HOUSING CAPACITY ANALYSIS

VI. NEXT MEETING – June 17, 2026

VII. COMMISSIONER COMMENTS

VIII. ADJOURN

Please note that these documents are also available on the City's website www.redmondoregon.gov; click on City Government, hover on Commissions and Committees, click on Urban Area Planning Commission. You may also request a copy from City Recorders Office 541-923-7751 or email Kelly.morse@redmondoregon.gov

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Redmond Urban Area Planning Commission **April 15, 2026**

Regular Meeting Minutes
Council Chambers & Remote Video Conferencing
Link: https://www.redmondoregon.gov/

CALL TO ORDER/INTRODUCTIONS
Chair Colvin called the meeting to order at 5:30 pm.

ROLL CALL

Present:	Chair Tobias Colvin, Vice-Chair Mercedes Cook-Bostick, Heather DeWolf, Norman Schultz, Ben Schimmoller.
Excused:	Michael Rogers and Tom Kuhn
Staff Present:	Planning Director, Kyle Roberts; Senior Long-Range Planner, Cory Murray; and Planning Permit Coordinator, Jamie Buddenbohn

CITIZEN COMMENTS FOR ITEMS NOT ON THE AGENDA
None.

APPROVAL OF MINUTES
A. December 10, 2025
B. January 21, 2026
Commissioner DeWolf moved to approve the minutes of December 10, 2025 and January 21, 2026 as presented. Vice Chair Cook-Bostick seconded the motion, which passed 4 to 0. (Ayes: Colvin, Cook-Bostick, DeWolf, and Schultz. Nays: None)

Commissioner Schimmoller arrived at 5:32 pm.

PUBLIC HEARING
A. Redmond Development Code Amendment (File No. 711-26-000054-TA)

Chair Colvin read the rules of conduct and opened the public hearing.

Planning Director Roberts and **Senior Long-Range Planner Murray** presented the Staff report on a series of Code amendments focusing on townhouse standards, open space requirements, and a new formalized annexation process. To comply with State housing laws while addressing local livability, the amendments propose 20-foot townhouse setbacks for off-street parking and a new open space formula requiring 2.5% of developable land for large subdivisions. The report also introduced Article 5, which categorizes annexations as Type I large scale or Type II small scale to replace reliance on convoluted State statutes with clear local procedures. A key feature of the annexation update is the City's Best Interest criterion, intended to allow the City to negotiate for community priorities like infrastructure or childcare during development. Overall,

these updates aim to clarify developer expectations and preserve local control over Redmond's growth. Staff also noted that no public comments had been submitted.

Commissioner questions were addressed throughout Staff's presentation.

Chair Colvin confirmed there was no public comment and closed the public hearing.

The Commission's deliberation focused heavily on the tension between State-mandated housing laws and maintaining Redmond's unique local identity. Regarding the the subjective nature of the City's Best Interest criterion, Commissioners emphasized the need to balance municipal priorities with a fair and predictable environment for developers. The discussion on townhouse setbacks was driven by practical livability concerns, highlighted by the Chair's account of the extreme difficulty of parking multiple vehicles when limited to a five-foot setback. Several Commissioners expressed a strong desire for Redmond to make its own path rather than simply mimicking development codes used by larger Willamette Valley cities. While some concern remained regarding the potential for stonewalling applicants under the new annexation rules, the Commission largely supported the flexible negotiation allowed by formalizing annexation agreements. Maintaining consistent setbacks across various housing types is a critical component of fair housing and prevents disparate impacts on lower-income residents. Ultimately, the Commission concluded that the amendments move the City in the right direction for future growth while preserving community standards.

Commissioner Schultz moved to accept the Redmond Development Code Amendment File No. 711-26-000054-TA as proposed by Staff and recommend approval by the City Council. Commissioner Schimmoller seconded the motion.

Ayes: Colvin, Cook-Bostick, Schultz, and Schimmoller
Nays: None
Abstentions: DeWolf
Motion Carried: 5 to 0

The amendment would go before City Council at its May 26th hearing.

Next Meeting – May 20, 2026

COMMISSIONER COMMENTS
Commissioner Schultz noted that the discussion on setbacks is about a crucial livability issue that is now headed in the right direction.

Commissioner Schimmoller praised Planning Director Roberts for holding individual meetings with Commissioners. He also voiced frustration with one-size-fits-all State mandates, expressing a desire for more local control over Redmond's future. **Vice-Chair Cook-Bostick** echoed these sentiments, emphasizing the importance of keeping Redmond unique.

Commissioner Rogers announced two new potential conflicts of interest due to his roles with OnPoint Credit Union and the Fair Housing Council of Oregon. He emphasized that maintaining equal setbacks across different housing types is essential for fair housing and preventing disparate impacts on low-income individuals or minorities.

Chair Tobias Colvin thanked Staff and local vendors for their creativity and collaboration. He noted it was refreshing to see the parties come together to broker an agreement on the Code amendments rather than engaging in a political fight.

ADJOURNMENT
The meeting adjourned at 6:33 pm.

Prepared by ABC Transcription Services
Reviewed by Kyle Roberts, Planning Director

APPROVED by the Redmond Urban Area Planning Commission and SIGNED by the Chair this _20th__ day of __May__ 2026.

_____/s/ Tobias Colvin_____
Tobias Colvin
Chair

ATTEST:

_____/s/ Kyle Roberts_____
Kyle Roberts, staff
Planning Director

REDMOND EAST GATEWAY

Zoning Map Amendment and Master Development Plan

HEARING DATE:	May 20, 2026, at 5:30 PM in Redmond City Hall Council Chambers
HEARINGS BODY:	Redmond Urban Area Planning Commission
FILE NUMBERS:	711-26-000038-ZMA and 711-26-000039-MD
FILE NAME:	Redmond East Gateway
REQUEST:	Approval of a Zoning Map Amendment and Master Development Plan
LOCATION:	901 E Highway 126 (Taxlots: 1513150000101 & 1513150000102) in Redmond, OR 97756
APPLICANT:	Watson Development (**Primary Applicant**) Blackmore Planning & Development Services, LLC (**Planning Consultant**)
PROPERTY OWNER:	Redmond East Gateway, LLC
REVIEWING STAFF:	Landon Stevens, Long Range Planner
RECOMMENDATION:	Approve with Conditions

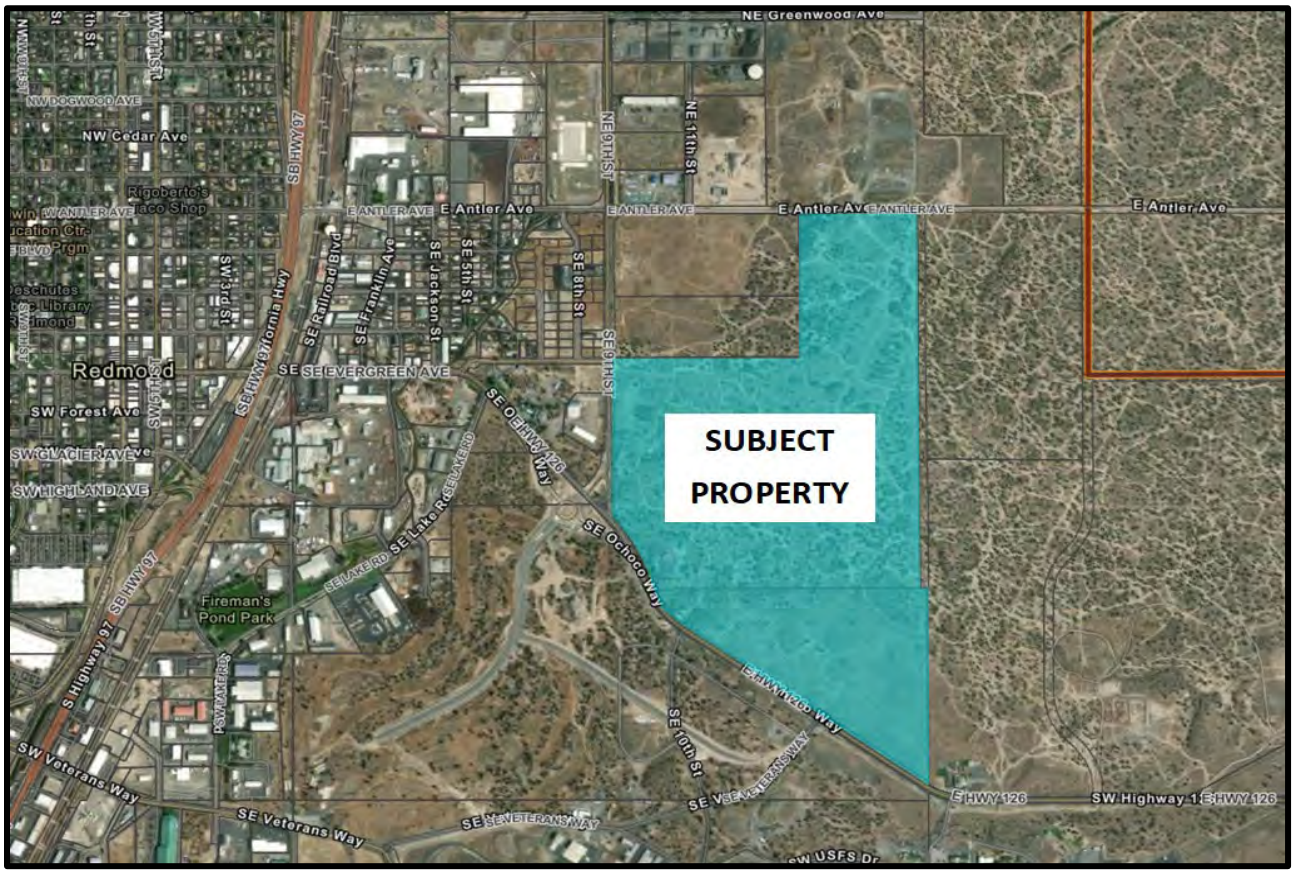


Figure 1 - Vicinity Map

I. BACKGROUND

Site Description:
The subject property is located in east Redmond and is within the city limits. The property is 204.56 acres in size and is comprised of two individual tax lots presently under the same ownership. The taxlot numbers are 1513150000101 (situs address 901 E Highway 126) and 1513150000102 (no situs address). The subject property is currently zoned with a mixture of Light Industrial (M-1) and Limited Service Commercial (C-4A). The M-1 zoning occupies 162.62 acres and the C-4A zoning occupies the remaining 41.94 acres. The property is essentially void of development aside from an Oregon Department of Transportation lease area in the southwest portion of the property, which consists of material storage and a small structure.

The subject property is comprised of two lawfully created units of land based upon a recorded Partition Plat from 2009, where they are defined as *Parcel 2 and Parcel 3 on Partition Plat No. 2009-21*, recorded with the Deschutes County Clerk on June 3, 2009.

Land Use History:
In 2008, Redmond adopted via Resolution a land use plan called the *Eastside Framework Plan* (referred to as the "EFP" in the remainder of this report). The EFP identified and studied approximately 1,800 acres of land on the east side of the city, north of Highway 126. At that time, certain portions of the 1,800 acres were located within the city limits and the Urban Growth Boundary (UGB), and certain portions were located outside the city limits and the UGB. The purpose of the EFP was to provide general guidance for future land uses, densities, neighborhood amenities, zoning designations, and the necessary public facilities and services to serve the area. The EFP envisioned areas identified for parks and/or open space, residential areas, mixed use areas, industrial areas, and commercial areas.

The subject 204.56 acres of land subject to this review were included in the 1,800 acres of land studied under the EFP. Based on the zoning designation map for the EFP, the subject property was identified to contain primarily Light Industrial (M-1) zoning, with smaller portions of Limited Service Commercial (C-4A) zoning, Central Business District Commercial (C-2) zoning, and a portion of Public Space designation.

In 2020, the City adopted the 2040 Greater Redmond Area Comprehensive Plan and Zone Map. This resulted in new zoning designations for the subject property, which no longer match the zones discussed in the EFP. Presently, the subject 204.56 acres of land being reviewed is made up of Limited Service Commercial (C-4A) and Light Industrial (M-1) zoning.

Proposal:
The applicant, Watson Development, submitted applications for the following land use actions:

1) Zoning Map Amendment; 2) Master Development Plan.

The applicant is proposing to change/reconfigure the current zoning to new designations, locations, and acreages, as well as establish a Master Development Plan for the sake of identifying and guiding future development on the site.

The current request does not include a land division of any kind. Future development and/or land divisions will be required to be reviewed at the time requested.

Existing Zoning Map:

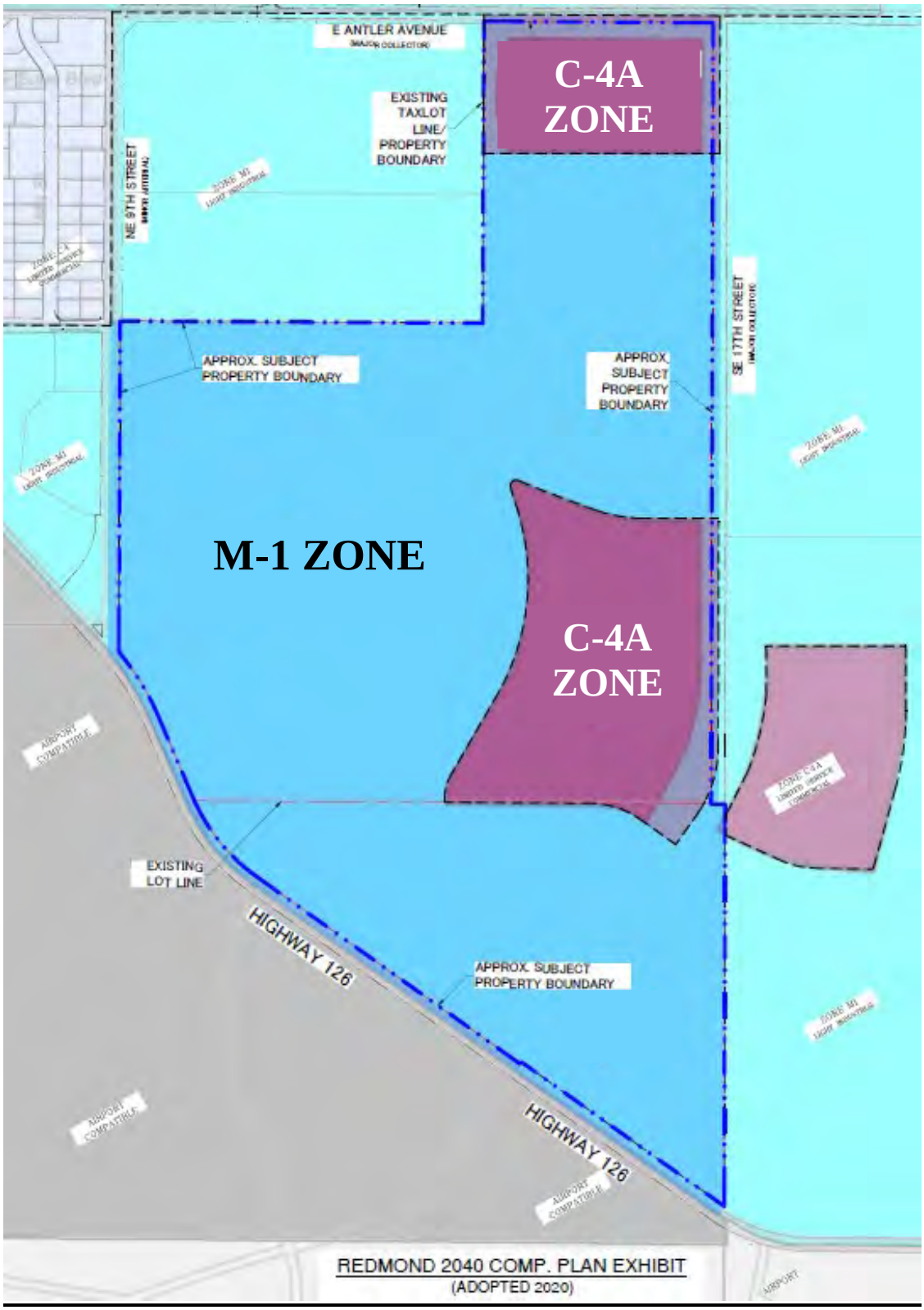


Figure 2 – Existing Zoning Map

Proposed Zoning Map:

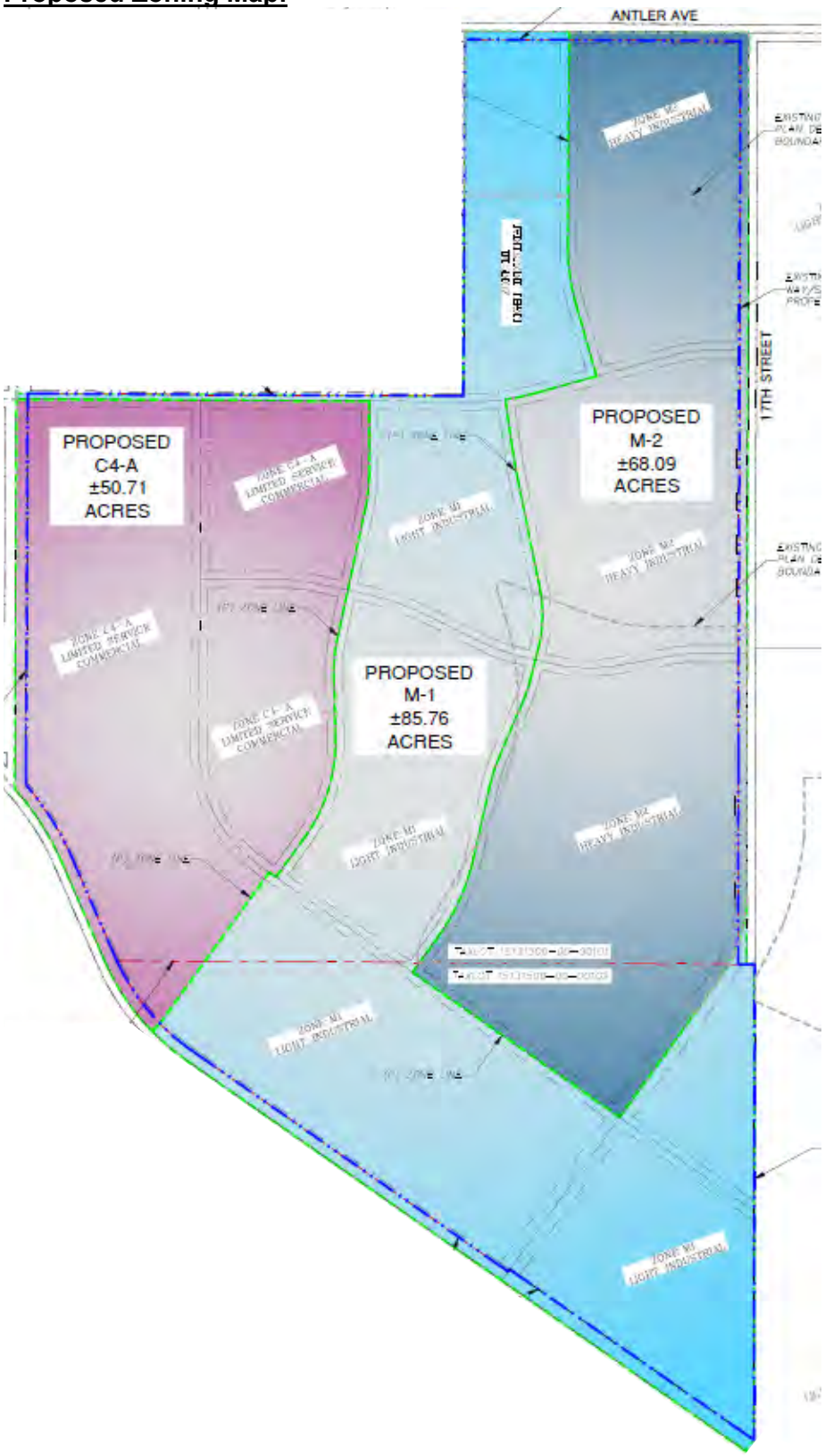


Figure 3 – Proposed Zoning Map

Zoning Designation Table:

ZONE DESIGNATION	EASTSIDE FRAMEWORK PLAN (ESFP)	REDMOND 2040 COMP PLAN	PROPOSED ZONING
C2 - CENTRAL BUSINESS DISTRICT COMMERCIAL	26.92 - AC	0.00 - AC	0.00 - AC
C4A - LIMITED SERVICE COMMERCIAL	22.98 - AC *	41.94 - AC	50.71 - AC
M1 - LIGHT INDUSTRIAL	144.04 - AC	162.62 - AC	85.76 - AC
M2 - HEAVY INDUSTRIAL	0.00 - AC*	0.00 - AC	68.09 - AC
PUB - PUBLIC SPACE	10.62 - AC**	0.00 - AC	0.00 - AC
TOTAL:	204.56 - AC	204.56 - AC	204.56 - AC

NOTES:

* - ADDITIONAL 12.5 ACRES OF C4A ON ADJACENT PARCEL TO NE IDENTIFIED IN EASTSIDE FRAMEWORK PLAN, CURRENTLY ZONED AS M-2. ADDITIONAL 18.3 ACRES OF M-2 ON ADJACENT PARCEL TO THE NW IDENTIFIED ON EASTSIDE FRAMEWORK PLAN, CURRENTLY ZONED M-1.

** - EASTSIDE FRAMEWORK PLAN DESIGNATED PUBLIC SPACES ADJACENT TO RIGHT OF WAYS ARE NOT DELINEATED OR INCLUDED IN AREA CALCULATIONS.

Adjacent Zoning & Land Uses:

	Zoning	Land Use
North	Heavy Industrial (M-2)	Vacant, undeveloped tracts of land
East	Light Industrial (M-1) & Limited-Service Commercial (C-4A)	Vacant, undeveloped tracts of land, supportive shelters
South	Airport Compatible	City of Redmond Airport property
West	Light Industrial (M-1)	Vacant, undeveloped tracts of land, as well as a non-profit job opportunity/recruitment campus

Comments:

At the time of completion of this staff report no written comments have been received from the public by the Planning Division concerning these applications.

Attachments:

Attachment A – Project Plans, dated December 2, 2025
Attachment B – Applicant Burden of Proof
Attachment C – City Department and Related Agency Comments
Attachment D – Letters Received from the Public
Attachment E – Transportation Impact Analysis, completed December of 2024

Application Timeline:

The following items are included herein by reference in this land use decision and are located in the record for this matter and are on file with the Community Development Department, Planning Division:

- Master Development Plan and Zoning Map Amendment applications, materials, and all required elements submitted by the applicant on March 16, 2026
- Application deemed incomplete on April 6, 2026, due to insufficient submittals
- Additional required submittals received on April 15, 2026
- Application deemed complete for review on April 15, 2026
- City department and related agency request for comments routed on April 20, 2026
- Notice to Department of Land Conservation and Development (DLCD) posted April 15, 2026
- Adjacent property owner notices of public hearing mailed on April 20, 2026
- Public Hearing Notice published in the *Redmond Spokesman* on May 7, 2026
- Final action 120-day deadline (ORS 227.178) is August 13, 2026

Applicable Criteria:

The following are the applicable sections from the Oregon Revised Statues, Oregon Administrative Rules, the City of Redmond Urban Area Comprehensive Plan, and the Redmond Development Code:

- City of Redmond Comprehensive Plan 2040
- City of Redmond Eastside Framework Plan
- City of Redmond Transportation System Plan
- City of Redmond Public Facility Master Plans
- City of Redmond Parks Master Plan
- Oregon Revised Statutes (ORS), Chapter 197
- Oregon Administrative Rules (OAR), Chapter 660:
  - Division 12, Transportation Planning Rule – OAR 660-012-0000
  - Division 15, Statewide Planning Goals and Guidelines – OAR-660-015-0000
  - Division 18, Post-Acknowledgement Amendments – OAR-660-018-0010
- City of Redmond Development Code (last amended by Ord. 2025-22)
  Article I – Zoning Standards
  - Section 8.065: Establishment of Zones and Districts
  - Section 8.070: Location of Zones
  - Section 8.080: Zone Boundaries
  - Section 8.165: Limited-Service Commercial (C-4A) Zone
  - Section 8.180: Light Industrial (M-1) Zone
  - Section 8.185: Heavy Industrial (M-2) Zone
  - Section 8.190: Table C, Uses Permitted
  - Section 8.270: Master Development Plans
  - Section 8.385: Neighborhood Meeting
  - Section 8.750-8.770: Amendments

II. FINDINGS & CONCLUSIONS

Findings:
The Redmond Development Code (RDC) used to evaluate these applications is the code in effect on March 16, 2026, which was last amended by Ordinance 2025-22. RDC Article I – Zoning Standards: Sections 8.065, 8.165, 8.180, 8.185, 8.190, 8.195, 8.270, 8.385, and 8.750-8.770; set forth the procedure and standards for approval. Staff findings for all applicable standards are presented below.

ARTICLE I – ZONING STANDARDS > INTRODUCTORY PROVISIONS
RDC Section 8.065, 8.070, 8.080

Sec. 8.065. Establishment of Zones and Districts:

[…]

M-1 Light Industrial Zone*: To provide for light industrial uses such as light manufacturing, research, transportation facilities and similar uses which have a limited impact on surrounding properties and are compatible with clean non-polluting industries along with limited office and commercial activities which support these light industrial uses. Furthermore, uses associated with the M-1.5 General Industrial Zone can possibly be permitted.*

C-4A Limited-Service Commercial Zone*: Limited strip type commercial and to provide for a lower intensity of heavily auto-related business. A mix of limited service commercial and limited residential uses are intended to serve large industrial tracts/employment areas and reduce crosstown vehicular trips*

FINDING: The property is 204.56 acres in size and currently zoned with 162.62 acres of M-1 zoning and 41.94 acres of C-4A zoning. The property is absent of development beyond a small ODOT lease site with a minor amount of storage.

M-2 Heavy Industrial Zone*: To promote the economic diversification by allowing a wide range of industrial and heavy commercial uses and providing sufficient land for industries that have a more pronounced impact on the urban environment because of noise, smoke, air, and other emissions or because of traffic and other operating characteristics associated with these industries. The M-2 zone also allows for heavy commercial uses in areas where previous subdivisions of land and current ownership patterns have resulted in separate ownerships of smaller M-2 zoned parcels and, therefore, challenged to be readily used for industrial purposes. Furthermore, uses associated with the M-2 Heavy Industrial Zone can possibly be permitted*.

FINDING: The applicant is proposing a master development plan and zoning map amendment to the subject 204.56-acre property, which will introduce 68.09 acres of M-2 zoning where the site currently does not have M-2 zoning.

Sec. 8.070 – Locations of Zones:

The boundaries of the zones listed in these standards shall be as indicated on the most recent City of Redmond Zone Map, as amended, which is hereby adopted by reference. The boundaries shall be modified in accordance with Section 8.750 et seq. (Amendments).

FINDING: The property has existing zoning consistent with the most recent zone maps, which were adopted in 2020 as part of the update to the Redmond Comprehensive Plan. The proposed project is to adjust the locations of the existing zoning, while also introducing a new zone and amending the net acreages of the current zoning, which is being reviewed in accordance with RDC Section 8.750 (Amendments).

Sec. 8.080 – Zone Boundaries:

Unless otherwise specified, Zone Boundaries are section lines, subdivision lines, lot lines, center lines of streets, alleys, canal, or rights-of-way, water courses, ridges or rimrocks, other readily recognizable or identifiable natural features, or such lines extended. Whenever any uncertainty exists as to the boundary of a zone as shown on the Zoning Map or amendment thereto, the following regulations shall control:

1. Where a boundary line is indicated as following a street, alley, canal, or right-of-way, it shall be construed as following the center line of such right-of-way.
2. Where a boundary line follows or approximately coincides with a section, lot, or property ownership line, it shall be construed as following such line.
3. When a lot is divided by a zone boundary and the property owner disputes the location of the boundary, the owner may file a declaratory ruling to determine the exact location of the zone boundary. In this case, the determination shall be made by the Hearings Body, subject to appeal by the City Council.
4. Where a public street, alley, canal, or railroad right-of-way is officially vacated, the zoning regulations applicable to abutting property on each side of the center line of such right-of-way is officially vacated, the zoning regulations applicable to abutting property on each side of the center line of such right-of-way on each respective side thereof. If the right-of-way is vacated in total to one property owner, the zoning of that abutting property shall apply to the total vacated property.

FINDING: This project is proposing the establishment of a Master Development Plan as well as a Zoning Map Amendment. Currently, the present-day zoning (as shown in *Figure 2* of this report) does not have zone boundary lines consistent with Section 8.080. The request for the Zoning Map Amendment is in conjunction with a Master Development Plan which depicts future lot lines and zone lines consistent with both property ownership as well as right-of-way infrastructure. A purpose of the proposed Master Development Plan is to plan for future zoning boundaries which are consistent with Section 8.080.

Sec. 8.190: Table C, Commercial & Industrial Zones, Uses Permitted.

The following table outlines each use contemplated in the subject zones. The green columns are the C-4A and M-1 zones which are currently in place and applicable to the subject property, and the orange column is the M-2 zone which is being proposed for the subject property. Each use is identified with the following code:

"O" means Permitted Outright
"C" means Permitted Conditionally
"N" means Not Allowed

	C4A	M-1	M-2	RESTRICTIONS AND REQUIREMENTS
Commercial/Industrial:				
Assisted Living Facility	O	N	N	
Affordable Housing, containing 100 percent affordable dwelling units	O	N	N	*Only if also allowed by the underlying zone district.
Bed and Breakfast	N	N	N	
Boarding House	C	N	N	
Caretaker	N	C	O	Must live on site.
Dairy	N	N	N	
Homeless Shelter	N	O	N	
Manufactured Home Park	N	N	N	
Mixed Use Workforce Housing, containing ground floor commercial and 100 percent workforce or affordable dwelling units	O	N	N	*Only if also allowed by the underlying zone district.
Multi-Family Complex	O	N	N	*Residential Use on ground floor restricted to <25 percent and shall not be in front of building.
Planned Unit Development	C	C	C	
Public-Owned Affordable Housing Development	O	O	N	See Section 8.145
Residential Use above ground floor	O	N	N	
Residential Use on ground floor <25 percent	N	N	N	Not in front of building.
Residential Use on ground floor >25 percent	N	N	N	
Residential Care Facility	N	N	N	
Residential Care Home	N	N	N	
Residential Conversion of Existing Commercial Structure	O	O	N	See Section 8.144. *Only if also allowed by the underlying zone district.
Single Family Detached Dwelling (including ADUs)	N	N	N	*Only permitted for those uses pre-dating the adoption of the C-2 Zone

and Duplexes on ground floor				Amendments and Downtown Overlay District on August 12, 2008.
Attached Single Family and triplex and quadplex above ground floor	O	N	N	
Resumption of a residential use	O	N	N	Only as previously established.
Triplex, Quadplex	N	N	N	
Eating and Drinking:	**C4A**	**M-1**	**M-2**	**RESTRICTIONS AND REQUIREMENTS**
Bakery (retail/sit-down)	O*	O	O	
Bar, Lounge, Tavern, Nightclub	O*	O	O	
Café, Restaurant (sit-down), Diner, Brew Pub	O*	O	O	Deli's are listed under "retail uses."
Café, Restaurant, Espresso (drive-through)	O*	O	O	Deli's are listed under "retail uses."
Mobile Food Pod	O	O	O	Permitted through Site and Design Review. Not allowed on lots with dwelling unit(s).
Mobile Food Unit	O	O	O	Permitted through a Temporary Use Permit, Section 8.380. Not allowed on lots with dwelling unit(s).
Mobile Food Vendor on private property	O	O	O	Permitted through Business Licensing provisions in City Code, Section 7.005 et seq. Can only operate between 8 AM and 9 PM for no more than two consecutive days within a 90-day period and must be located on real property in association with an event.
Mobile Food Vendor on public property	O	O	O	Permitted through Special Events provisions in City Code, Section 7.350 et seq. or Parks Reservation Permit.
Entertainment:	**C4A**	**M-1**	**M-2**	**RESTRICTIONS AND REQUIREMENTS**
Amusement Park	O	N	N	
Arena for Indoor Sports Events	O	N	N	Larger than indoor commercial recreational use.
Driving Range	N	N	N	
Golf Course	N	N	N	
Indoor Commercial Recreation	O	C	C	
Miniature Golf, "Pitch & Putt"	N	N	N	
Outdoor Commercial Recreation	O	N	N	
Walk-in Movie Theater	O	N	N	
Automobile, Trucks, RVs:	**C4A**	**M-1**	**M-2**	**RESTRICTIONS AND REQUIREMENTS**

Auto Detailing	O*	O	N	No auto body work permitted as "detailing". **Exempted as a Conditional Use for existing businesses prior to August 12, 2008.
Auto Painting, Auto Body Work	O*	O	O	
Auto Repair	O*	O	O	Defined in part by some on-site auto storage. **Exempted as a Conditional Use for existing businesses prior to August 12, 2008.
Auto Sales (new and used); Auto Rentals	N	N	N	**Exempted as a Conditional Use for existing businesses prior to August 12, 2008.
Auto Service	O*	N	O	Includes auto lube shops ('same day' service). **Exempted as a Conditional Use for existing businesses prior to August 12, 2008.
Recreational Vehicle or Boat Sales and Service	C	C	N	Includes motorcycles, ATVs, other recreational vehicles.
Car Wash	O	O	O	Steam cleaning permitted in the industrial zones. **Exempted as a Conditional Use for existing businesses prior to August 12, 2008
Gas Stations Including Card Lock	O	O	O	**Exempted as a Conditional Use for existing businesses prior to August 12, 2008
Tire Sales and Service	O	N	N	
Truck Stop	O	O	O	
Truck Terminal	N	O	O	
Automobile and Recreational Vehicle Storage/ Towing Yard	N	C	C	Includes impound yards, auto fleets.
Industrially Related Uses:	**C4A**	**M-1**	**M-2**	**RESTRICTIONS AND REQUIREMENTS**
Aircraft/Airport Service, Parking Lot, Maintenance	N	O	O	
Auto Wrecking, Recycling	N	C	O	
Bakery, Wholesale Distribution	N	O	O	
Batch Plants (Asphalt/Concrete)	N	N	O	

Commercial Manufacturing (Retail Support, Craftsmen)	O	O	O	Must be fully enclosed in "C" zones that permit this use.
Concrete & Concrete Products, Stone-cutting	N	C	O	
Distribution Center	O	O	O	
Dump, Landfill	N	N	C	
Enclosed Warehousing and Manufacturing	N	O	O	Up to 50 percent retail allowed in Industrial Zones.
Junkyard	N	N	O	Auto Wrecking Yard' is a separate category.
Landscaping Supply (Bulk)	N	O	O	Outdoor storage of bulk landscaping material.
Lumber Mill	N	N	O	
Manufacturing (Heavy Industrial)	N	N	O	
Manufacturing (Light Industrial)	N	O	O	Subject to DEQ requirements and neighborhood compatibility.
Medical Research Facility	O	O	O	Excludes research using biohazardous material
Precision Machine Shop	N	O	O	Must be fully enclosed in "C" zones that permit this use
Retail Uses in support of primary Industrial Use	N	O	O	Must be less than 50 percent of the gross floor area
Rock Crushing/Recycling	N	C	O	
Slaughterhouse	N	N	O	
Tanning, Curing, Storing of Hides	N	N	O	
Wholesale Printing and Distribution	N	O	O	
Wood Product Manufacturing and Assembly	N	O	O	
Offices and Office Products:	**C4A**	**M-1**	**M-2**	**RESTRICTIONS AND REQUIREMENTS**
Office	O	C	N	
Office Service and Supplies	O*	N	N	
Offices related to Industrial Use	N	O	O	
Printing, Publishing	O	O	N	
Telemarketing, Call Center	O	C	N	

Public and Semi Public Uses:	**C4A**	**M-1**	**M-2**	**RESTRICTIONS AND REQUIREMENTS**
Agricultural Uses	N	N	N	
Churches, Religious Institutions	C	C	N	
Convention Center	N	N	N	
Emergency Shelter	O	O	O	Reviewed under ORS 197.782. Emergency shelters for natural disaster response are not subject to review.
Hospital	N	N	N	
Lodge, Club, Non-profit/frat. Org.	C	C	N	
Park, Public or Private	O	O	O	
Parking Garage, Public or Private	O	O	O	
Public Transportation Station	O	O	O	
RV Park, Public or Private	N	C	N	Refer to Section 8.615(14.)
Police or Fire Station: Public Safety or Emergency Services	O	O	C	
Schools, Public or Private	C	C	N	
Supportive Shelter	O	O	N	See Section 8.370, Supportive Shelter Standards.
City Owned Utility or Public Facility	O	O	O	
Retail Uses:	**C4A**	**M-1**	**M-2**	**RESTRICTIONS AND REQUIREMENTS**
Bicycle Sales and Service	O*	N	N	
Bulky Retail (including furniture)	O	N	N	Excludes equipment and heavy equipment.
Contractor Supplies (enclosed)	O	O	O	Also called Building Supplies (non-landscaping).
Contractor Supplies (outdoors)	O	N	N	
Delicatessen	O*	C	N	
Drug Store, Pharmacy	O*	N	N	
Equipment Sales, Service & Rental	O	N	N	Excludes Heavy Equipment Sales and Service.
Florist	O*	N	N	
Gallery, Studio	O	N	N	

General Retail	O*	N	N	
Gift/Card Shop	O*	N	N	
Grocery Store, Market	O**	N	N	
Hardware Store	O*	N	N	
Heavy Equipment Sales	N	O	O	Only permitted w/ primary service use in M Zone.
Heavy Equipment Service	N	O	O	
Heavy Equipment Storage (outdoor)	N	N	O	
Marijuana Business	N	N	N	See Section 8.900, Marijuana Businesses Standards
Medical Supplies (Retail)	O	N	N	
Mobile/Manufactured Home Sales & Service	N	N	N	
Novelty, Specialty, Variety Store	O*	N	N	Includes music, art supply, electronic equipment, sporting goods.
Outdoor Merchandise Display, Other	O	N	N	Non storage related; for retail sales.
Pet Shop	O	N	N	
Plant Nursery	O	N	N	
Thrift Store	N	N	N	
Service Commercial Uses:	**C4A**	**M-1**	**M-2**	**RESTRICTIONS AND REQUIREMENTS**
Appliance and Computer Repair	O*	N	N	Includes stereos, electronic equipment, residential appliances.
Bank, Financial Institution	O	N	N	
Beauty & Barber Shops & Salons (Including spas)	O*	N	N	
Contractor Service	O	O	O	Enclosed within a building (except in M-2 zone); includes equipment rentals and sales.
Contractor's Yard	N	C	O	Includes outdoor storage of equipment and building supplies.
Child Care Facility	O	C	N	If a facility is part of an industrial development and within the manufacturing structure, a conditional use permit is not required.
Dry Cleaner (drop-off only)	O*	N	N	
Dry Cleaner (full service)	O*	N	N	
Kennel	N	O	O	

Laundromat	O	N	N	
Mini Storage	N	C	N	See Section 8.615(17.).
Mortuary, Funeral Home	N	N	N	
Motel, Hotel	O	C	N	
Printing and Copying Store	O*	N	N	
Veterinarian Services	O	O	O	Fully enclosed in C zones; no outdoor kennels.

O* Maximum size = 10,000 square feet
O** Maximum size = 20,000 square feet

FINDING: The applicant is proposing a master development plan along with a zoning map amendment for the subject property. The request does not include any land divisions or specific proposed uses. Future land divisions and establishment of uses will require review at the time they are requested.

ARTICLE I – ZONING STANDARDS > MASTER DEVELOPMENT PLANS AND PLANNED UNIT DEVELOPMENTS
RDC Section 8.270

Sec. 8.270. Master Development Plans.

A Master Development Plan is required as a condition of annexation, or after annexation, but prior to or concurrent with rezoning from Urban Holding-10 to other City zoning districts. The specific requirements for a Master Development Plan are:

Section 8.270(3)(B) provides the review and approval criteria for Master Development Plans:

a. Whether the proposed Plan is generally consistent with the Framework Plan, adopted Area Plan, and Comprehensive Plan in terms of land use, density, transportation systems and networks, adequacy of infrastructure and open space.

FINDING: Staff has examined the applicant's plan set and response to this criterion and concurs that the proposed Redmond East Gateway master development plan is generally consistent with the Eastside Framework Plan (EFP), and Comprehensive Plan in terms of land use, density, transportation systems and networks, adequacy of infrastructure and open space. Additionally, although no annexation or rezoning from UH-10 is occurring, the applicant has the ability to request a master development plan in order to guide and direct future development of the site.

The Eastside Framework Plan designated the subject property as a mixture of Light Industrial, Central

Business District Commercial, Limited Service Commercial, and Public Space. As identified in the Transportation System Plan (TSP), the subject 204 acres is bordered to the west by SE 9th street, which is identified as a minor arterial. Adjacent to the north is East Antler Avenue, which is identified as a major collector. Adjacent to the east is a future proposed road named SE 17th Street, which is proposed for classification as a major collector. The property is bordered on the south side by State Highway 126. Identified in the TSP is a proposed buffered bike lane along the western edge of the property where it adjoins SE 9th Street, along the eastern property boundary where it fronts the future SE 17th Street, and along the northern edge of the property where the property currently abuts E Antler Ave. A proposed separated bike path is identified in the TSP along the southern border, which is the Highway 126 corridor. As required by the Water Master Plan, the applicant will be required to construct a 12-inch water main along and through the property frontage along the future SE 17th Street at the time of subdivision and development. The current proposal does not include a request to subdivide. This standard is met.

b. Whether the proposed Plan is generally suitable for the area in which it is proposed, considering existing and planned neighborhoods, shopping and employment areas, and natural resources and hazards.

FINDING: Staff has examined the applicant's plan set and response to this criterion and concurs that the proposed Redmond East Gateway master development plan is generally suitable for the area. The proposed master development plan is consistent with the vision contemplated by the City's various long-range plans as elements of the Eastside Framework Plan were adopted and incorporated into the Comprehensive Plan and its supporting plans (e.g., Transportation System Plan, Public Facility Plans, Parks Master Plan). The proposed development will extend the existing commercial and industrial development pattern and existing infrastructure in an orderly fashion, as well as allow for consistency with the Economic Opportunities Analysis regarding the need for commercial and industrial lands and corresponding employment needs. This standard is met.

c. Whether the proposed Plan is functionally integrated with developed or planned areas.

FINDING: The proposed Redmond East Gateway master development plan functionally integrates into the vicinity of the east side of Redmond. This is demonstrated by the fact that elements of the proposed master development plan such as zoning, land uses, public facilities, and amenities align with the Eastside Framework Plan, the Redmond Comprehensive Plan, and various supporting plans such as the Public Facility Plans, and Transportation System Plan. Said plans are the long-range planning documents that established the vision for how the area would develop. The proposed master development plan achieves consistency with the goals of the surrounding area and maintains an emphasis on commercial and industrial related uses and associated infrastructure. This standard is met.

d. The proposed Plan meets the applicable Great Neighborhood Principles.

FINDING: Staff has examined the applicant's plan set and response for this criterion. Staff concurs with the applicant's responses. Compliance with each Great Neighborhood Principle is addressed below.

a. *Transportation.* Connect people and places through a complete grid street network and trail system that invites walking and bicycling and provides

convenient access to parks, schools, neighborhood service centers, and possible future transit stops. Traffic calming techniques and devices may be required to slow vehicles. Curved streets are encouraged to provide interest and variety in neighborhood design. Trails shall be provided to link with existing or planned pedestrian facilities.

The applicant response to this Great Neighborhood Principle states the following:

Adopted documents that can assist with understanding conformance with this provision include the City of Redmond Transportation System Plan Map, the Eastside Framework Plan, and the City Development Code (including required street spacing and design standards). The City Transportation System Plan Map identifies Hwy 126 as an ODOT facility, SE 9th Street as a "Minor Arterial", E Antler Avenue as a "Major Collector", and SE 17th Street as a "Proposed Major Collector". The Eastside Framework Plan shows a general street grid, but it does not identify specific street classifications. Furthermore, the Eastside Framework Plan identifies "Public Space" corridors. As depicted on the Master Development Plan Exhibit, the Master Development Plan, plans for all transportation elements that are identified on the TSP, and the majority of the features of the Eastside Framework Plan. The one deviation between the planned street grid and the street grid that is noted on the EFP is the connection of SE Forest Avenue to SE 9th Street. The reason for this deviation (lack of connection) is because, through the design and development of the City's SE 9th Street Eastside Arterial Project, additional connection to SE 9th Street (including the connection noted on the Eastside Framework Plan) have been removed (by the City). City Staff has informed the Applicant that a connection to SE 9th Street south of SE Evergreen Avenue will not be authorized.

The proposal plans for improvements along Hwy 126 in accordance with ODOT requirements, including a pedestrian walkway along Hwy 126 and a single lane roundabout at the SE 17th Street / Hwy 126 intersection. Arterial street improvements are planned along SE 9th Street, and Collector Street Improvements are planned along E Antler Avenue and SE 17th Street. Furthermore, the project plans for a well-connected grid of local streets, and trails as described on the Eastside Framework Plan.

In addition to the features depicted on the long term plans, the Master Development Plan includes a mix of internal streets, bicycle routes, sidewalks, and trails that conform the City of Redmond spacing and design standards. The transportation system connects to Hwy 126 at 2 points (the existing SE 9th Street and the planned SE 17th Street). Two connections to SE 9th Street (to the west) are planned, at SE Evergreen Avenue and SE Antler Avenue. Two connections are planned to SE Antler Avenue (to the north), and 4 connections are planned to NW 17th Street (to the east), E Antler Avenue, SE Evergreen Avenue, SE Forest Avenue, and SE Glacier Avenue. The widths, locations, and designs depicted on the Master Development Plan are consistent with City of Redmond design standards for local, collector, and arterial streets. Furthermore, bicycle routes are proposed higher order streets, and sidewalks are proposed along all local street rights-of way, in conformance with City street design standards. As designed, each of the transportation components of the Master Development Plan connect to a broader system, which connects to the remainder of the City as prescribed in the EFP, thus in conformance with this standard. Public improvements will occur with subsequent development Subdivision or Site Plan Review

FINDING: The proposed master development plan will provide a complete framework for a future transportation network, including extending existing local grid streets and providing additional right-of-way improvements to the Highway 126 corridor along the subject property. The local grid streets will be designed and built to City standards, and will include sidewalks, curbs and gutters, and appropriate street widths based on classification. All transportation improvements will connect to existing

transportation infrastructure adjacent to the proposed master development plan, as well as tie into specific elements of the Transportation Master Plan.

b. *Housing.* A mix of housing unit types and densities shall be integrated into the design of new neighborhoods consistent with zone requirements unless a variance or other planning permit is approved.

The applicant response to this Great Neighborhood Principle states the following:

The subject property does not contain any lands that are zoned for Residential uses or planned for Residential uses on the EFP; therefore the plan does not need to provide for any housing. Also, it is noted that housing is allowed in the C-4A Zone and it is expected that some of the C-4A zoned land in the Master Development Plan may be developed with Residential uses. The C-4A Zoned area on the plans is located near the center of the property and near SE 9th Street, a major arterial that is adjacent to the site. The locations of the planned zones and the potential for Residential uses on the C-4A Zoned land has been thoroughly considered and integrated into the site in a useful and efficient manner. While not required, the area of potential Residential use conforms to this provision.

FINDING: This Master Development Plan is being proposed in conjunction with a zoning map amendment. The requested zoning is reflected in the submitted site plans, which are included at as attachments to this report. There are three zones requested, which are Limited-Service Commercial (C-4A), Light Industrial (M-1), and Heavy Industrial (M-2). The land uses allowed in each of these zones are described in the land use table beginning on page 5 of this report. Although no specific land uses are contemplated at this time, it is anticipated that the future land uses situated on the subject 204 acres will predominately be commercial and industrial uses based on the land uses allowed in each of the requested zones. Residential options are limited for both the current zoning as well as the proposed zoning, and the character of the area is heavily industrial and commercial.

FINDING: The applicant is not proposing specific development or land uses at the time of this Master Development Plan. The proposed Master Development Plan and subsequent Zoning Map Amendment will set up the property for future development with regard to necessary infrastructure, land division, and land use. The Master Development Plan does not specify a variety of housing types, however future residential use will be dictated by zoning.

c. *Open spaces, greenways, recreation.* All new neighborhoods shall provide open spaces with recreation amenities that are useable to the public and are integrated to the larger community via trails or pathways. Parks and plazas shall be developed in accordance with Redmond's Parks Master Plan, or otherwise should be centrally located in the neighborhood and capable of supporting public gathering places. New neighborhoods should retain and incorporate significant geological features such as rock outcroppings or stands of clustered native trees into the design and lot layout.

The applicant response to this Great Neighborhood Principle states the following:

While the Eastside Framework Plan, included a rectangular area that appears to have been a park on the subject property, this area was previously zoned OSPR. With the 2020 Comprehensive Plan

Update, the City determined that a park is not needed in this area and this OSPR designated area was removed from the subject property. Aside from the noted open space element, the Eastside Framework Plan identifies linear Public Spaces, one that traverses the subject property in a north/south orientation.

As detailed on the Plan Set, the proposed Master Development Plan includes linear Public Spaces that will be 50 feet wide and contain multi-use paths along SE 13th Street and a relocated (to the south) east/west Public Space, along Hwy 126. The planned open spaces and multi-use trails are depicted on the Master Development Plan and noted in the planned cross sections. Given that only the linear open spaces are needed on the subject property and given the fact that the Master Development Plan provides for linear open spaces, the design conforms to this provision.

FINDING: Both the Eastside Framework Plan and City's Park Master Plan did not identify the subject property as a future site for a neighborhood or community park. The Eastside Framework Plan designated an area of approximately 10.6 acres classified as "Public Space"; however, this designation was abandoned with the adoption of the Redmond 2040 Comprehensive Plan. The applicant is proposing a total of 3.74 acres of land labeled "landscape buffer" which will run along the Highway 126 boundary as well as extend north into the interior of the 204 acres. This land will serve as a pedestrian access easement and will be intended for a low stress multi use trail, as well as buffer between the commercial zones, which could allow for future residential uses, and the industrial zones. There are no significant geological features or stands of native trees on-site to incorporate into the design and lot layout.

d. *Integrated design elements.* Streets, civic spaces, signage, and architecture shall be coordinated to establish a coherent and distinct character for the MDP. MDPs may integrate design themes with adjacent developed or planned areas.

The applicant response to this Great Neighborhood Principle states the following:

"The location of streets, parks and civic spaces are detailed on the Master Development Plan Exhibit. Furthermore, be a large lot / industrial / business park theme is planned to be used throughout the development. Colors are anticipated to be mild and sustainable designs will be encouraged, through the use of CC&Rs. Furthermore, development will encourage the preservation and integration of significant vegetation where practical (to be reviewed with subsequent Subdivision and/or Site Plan review), as will the maintenance of views where practical and the preservation of resources. In an effort for a consistent theme, signage is planned to be coordinated and correlated to a general architectural theme, to be finalized with future development applications (Subdivision or Site Plan). Furthermore, the developer will encourage the enhancement of usable areas, open spaces, and providing art where practical for the Commercial and Industrial use areas.

The planned design features will be incorporated into CC&Rs and will be recorded with Subdivisions and/or Site Plan applications, prior to development, which will provide a distinct and coherent character, as required by this section.

The way that the area is planned to be developed has been established by the City through the Comprehensive Plan and the Eastside Framework Plan. The referenced long-range planning

documents establish zones, use areas, densities, amenities and transportation systems that result in fully integrated planning areas. The currently proposed Master Development Plan is consistent with the adopted long-range plans.

In addition to the design, the proposal will extend water and sewer facilities, along with all franchise utilities to and throughout the site. By extending all required utilities and facilities to and through the property in a manner that is consistent with the adopted long range plans (Comprehensive Plan and Eastside Framework Plan), the proposal will sufficiently integrate them into the surrounding area. As planned, the proposal is fully integrated to adopted plans and known developments, thus in conformance with the standards of this section."

FINDING: According to the application submittals and site plans, the applicant intends to provide a coherent design which will allow for future development geared toward commercial and industrial use and enhancing and connecting transportation and utility elements for the city. Additionally, the specific uses will be required to undergo a City site and design review in order to demonstrate design and architectural compliance with the associated city standards.

e. *Diverse mix of activities.* A variety of uses are encouraged in order to create vitality and bring many activities of daily living within walking and biking distance or a short drive of homes. Amenities including, but not limited to, trails, recreation areas, and open spaces, shall be constructed before occupancy of any residential unit, unless a phasing plan is approved. Commercial service areas must be supported by a market analysis and phasing program which will be used by the City to determine construction timing.

The applicant response to this Great Neighborhood Principle states the following:

"The proposed Master Development Plan accommodates "Employment lands" and is consistent with the Eastside Framework Plan, which establishes an intent for the following activities on the property:

- *The property is planned for a mix of Commercial and Industrial uses.*
- *NW 17th Street traverses the property's eastern edge in a north/south orientation and it intersects with Hwy 126.*
- *A park type "Public Space" is identified.*
- *Public space is identified as traversing the property in a north/south orientation and extending to the park areas.*

As detailed on the Master Development Plan exhibit, the proposal includes the following features that carry out the items referenced on the Eastside Framework Plan:

- *The proposal provides a mix of Commercial and Industrial land.*
- *With the exception of a Forest Avenue connection to SE 9th Street, the street grid is generally consistent with the EFP.*
- *The design includes a Public Space that traverses the site in a north/south orientation.*
- *The design includes a Public Space that traverses the site in an east/west orientation.*
- *Right-of-way improvements that conform to the City of Redmond Arterial Street and/or ODOT Standards (travel lanes, curbs, walkways, planter strips) are planned along SE 9th Street and*

Hwy 126. At time of development (Land Division and/or Site Plan as warranted), the improvements will be constructed.

- *Right-of-way improvements that conform to the City of Redmond Collector Street standards (travel lanes, curbs, walkways, planter strips) are planned along SE 17th Street. At time of development (Land Division and/or Site Plan as warranted), the improvements will be constructed.*
- *Internal grid and non-grid streets improvements that conform to the City of Redmond Street standards (travel lanes, curbs, walkways, planter strips) are planned along the internal streets. At time of development (Land Division and/or Site Plan as warranted), the improvements will be constructed.*
- *Trails are planned along 13th Street and Hwy 126.*
- *Water is planned to be provided to and through the site in conformance with City Standards.*
- *Wastewater is planned to be provided to and through the site in conformance with City Standards.*

The couple areas of deviation include 1) a central park area is not planned within the Master Development Plan Area and 2) SE Forest Avenue does not extend through to connect to SE 9th Street to the east.

The reason for the park deviation is due to the fact that the Park and Open Space Zone has been removed from the site, a City recognition that parks are more appropriately located in Residential and/or Commercial areas (rather than a primarily Industrial area); in locations where nearby residents and/or patrons (in more compact spaces) can use park open spaces areas. Industrial uses are typically larger size and have fewer employees, on larger units of land. Access to park areas from Industrial Zoned land would require greater distances of travel for fewer people, and would be an inefficient use of land.

Regarding the residential uses that can occur on the C-4A Zoned land, these are likely to be higher density multi-family complexes. The Redmond Development Code requires that multi-family complexes provide for 15% open space or 3,000 sf, whichever is greater (RDC 8.3035.E.9). As such, open space would be provided for residents in the area, if developed for that use.

Overall, providing park and/or open space in this area would be an inefficient use of land in this Master Development Plan; parks and open spaces will be provided for residents and/or more efficiently located (near higher density uses) in other parts of the City.

Regarding a SE 9th Street connection south of SE Evergreen Avenue, while this is shown on the Eastside Framework Plan, through the design and development of the SE 9th Street Eastside Arterial Project, additional connection to SE 9th Street (including the connection noted on the Eastside Framework Plan) have been removed (by the City). City Staff has informed the Applicant that a connection south of SE 9th Street will not be authorized.

As detailed above, the proposal complies with the all of the notes and the overall intent of the Eastside Framework Plan, given that planned uses and City changes that have occurred since 2008; therefore the proposal complies with this section. The project is generally consistent with the Eastside Framework Plan and the Comprehensive Plan in terms of providing a specific mix of activities; the proposed mix of uses conforms to the standards of this section."

FINDING: The purpose of this master development plan is to create a framework to guide future development as it relates to commercial and industrial uses. Page 5 of this report marks the beginning of a land use table which shows the uses typically found in the commercial and industrial zones.

Residential development is anticipated to be limited and secondary to commercial uses, as described in the land use table. As previously mentioned, there is a proposed 3.74 acres of landscape buffer which will also be dedicated as a pedestrian access easement. The master development plan, in conjunction with the requested zoning map amendment, will offer three different zones, and although residential uses are not expected to be prevalent, the design is considered to include a diverse mix of activities and possible uses.

f. *Public Art or Artistic Feature.* Places for the installation of public art or artistic feature is required to provide focal points, preferably, at the gateways to neighborhoods, in and around the center of neighborhoods, or trailheads.

The applicant response to this Great Neighborhood Principle states the following:

The proposal identifies potential public art locations at 4 locations:

- *SE 15th Street / SE Antler Avenue*
- *SE 9th Street / SE Evergreen Avenue*
- *SE 9th Street / Hwy 126*
- *SE 17th Street / Hwy 126*

Public art details will be finalized with subsequent development applications (Subdivision and/or Site Plan).

FINDING: The applicant shall provide for a location for the potential installation of public art, preferably at the predominate entry points to the master development plan area, in and around the center of the master development plan area, or along the multi-use pathway as indicated on the site plans.

g. *Scenic Views.* Identify and preserve scenic views and corridors of the Cascade Range, Ochoco Mountains, and Smith Rock, such as in street view sheds or park areas. Streets and common, or public, open spaces should be located and oriented to capture and preserve scenic views for the public. Minimize visual clutter from signs and utilities within scenic corridors.

The applicant response to this Great Neighborhood Principle states the following:

The subject property does not contain any adopted view corridors or view restrictions. As detailed on the Plan Set, the design extends 3 internal streets in an east/west orientation, to the edges of the property. These street connections will provide mountain view corridors throughout the property, at a size and scale, and at locations that are appropriate for a development of this size. The proposed design conforms to these provisions to a reasonable extent.

FINDING: The proposed master development plan does not include a request for development. It does provide a future design for street and infrastructure layout in relation to the proposed zoning designations, which the zoning map amendment request involves. The street design is relatively open and should allow for unobstructed views of the Cascade Range to the west. Each proposed zone has design standards and includes a maximum allowable building height of 60 feet. Although not

subdividing at this time, the master development plan also includes schematics of future development tracts. These conceptual development tracts are large enough to allow for views to the west, north, and east to remain even with future construction of commercial and industrial buildings.

h. *Urban-Rural Interface.* Residential development adjacent to areas outside of the Urban Reserve Area (URA) shall provide buffering to manage the transition from urban to rural intensities by meeting at least one of the following standards:

   i. Provide 100-foot-wide landscaped buffers, exclusive of rights-of-way, for the entire length that the urban development is adjacent to lands outside of the URA. The buffers shall be landscaped with native vegetation characteristic of the local ecosystem; or

   ii. Locating lower density development at the urban-rural interface; or

   iii. Other appropriate and equivalent transitional elements as approved by the Review Authority.

FINDING: This Great Neighborhood Principle directly relates to master development plan requests involving residential uses in proximity to the Urban Reserve Area. The current master development plan being reviewed is not a residential project, but rather a plan to establish a guide and framework for future commercial and industrial uses on the subject property. Additionally, the subject property is not located at the Urban-Rural Interface. Therefore, this standard is not applicable.

i. *Pocket Parks/Tot Lots.* Fully developed "pocket parks" or "tot lots" shall be incorporated into medium and high density zoned residential subdivisions and site plans. These areas shall be developed for every 25 lots/units, a minimum of 3,000 square feet and privately maintained. Examples of amenities include: turf areas, benches, deciduous shade trees, irrigation, shrubs, natural or decorative features, and adequate trash receptable(s) and lighting.

FINDING: This Great Neighborhood Principle directly relates to master development plan requests involving subdivisions and residential uses in areas with medium and high-density residential zoning. The current master development plan being reviewed is not a residential project, but rather a plan to establish a guide and framework for future commercial and industrial uses on the subject property. The proposed C-4A zoning areas will allow for a small element of residential uses in conjunction with businesses; however, the project does not include explicit residential zoned areas. Therefore, this standard is not applicable.

j. *Canal Trails.* If canals or laterals are present, multi-use trails at least ten feet wide shall be provided, subject to the Central Oregon Irrigation District's review and approval. Pedestrian amenities such as benches and trash receptacles shall be provided at appropriate locations (e.g., every 500 feet, at trailheads or intersections with public streets).

FINDING: The subject property does not contain canals or laterals. Therefore, this Great Neighborhood Principle does not apply.

k. *Green Design.* Land divisions and site plans shall incorporate principles of sustainable design befitting the natural ecosystem of Central Oregon. These principles may be incorporated through the layout of individual lots and the configuration of neighborhoods and include energy efficient siting and construction of buildings, water-wise and native landscaping, and amenities to provide for walkability via shade and priority access for pedestrians, or other such similar design strategy.

The applicant response to this Great Neighborhood Principle states the following:

This section generally applies to site development elements. The proposal includes Master Development Plan themes and concepts that are included as Exhibits to this application. Future building designs and/or site designs will be reviewed for conformance to Development Code requirements, which will implement this provision.

FINDING: The applicant has stated that the master development plan will include design elements such as separated bicycle and pedestrian pathways connecting employment areas with commercial and residential areas. Additionally, the design includes internal transportation modes in the way of street systems, which encourages local travel within the boundaries of the plan area. Potential future land uses within the plan area vary to a significant degree based on the proposed zoning, allowing the plan area to incorporate a variety of uses, resulting in a more efficient destination as it relates to vehicle and pedestrian traffic.

C. Master Development Plan (MDP) or Partial Master Development Plan (PMDP) Submittal Requirements and Approval Process. An application for approval shall include the submittal requirements set forth in the City's Land Use Review application form as well as the elements described below.

1. Narrative. A narrative shall set forth the goals and objectives of the plan and describe the urban characteristics of the planned area.

2. Neighborhood Meeting. Proof a neighborhood meeting was conducted to provide an opportunity for the applicant to meet with surrounding property owners discuss the proposal. See Section 8.0385 for meeting requirements.

3. Development Plan Map. A map of the plan area and surrounding vicinity shall indicate planned land uses for each land parcel in the area, including plans for park and open space and community facilities, if known. The plan shall show proposed comprehensive plan map designations and zoning. The plan shall include a list of all affected properties with tax lot numbers, current ownership, parcel size, and other information that is pertinent to the plan.

4. Land Use Diagram. The land use diagram shall generally indicate the distribution and location of planned land uses for the master plan area, including plans for park and open space and

community facilities, if known. The plan shall show proposed comprehensive plan designations, zoning, and density.

5. Significant Resources Inventory. An inventory of significant natural resources, scenic and historic resources, and open space areas including those identified on the City's adopted inventory and those that have the potential to qualify for protection under Redmond's Goal 5 resource protection program. When significant resources are present, the proposed plan shall include a management plan to protect resource sites.

6. Parks and Open Space. Identify land suitable for park and recreation use in accordance with the needs analysis in the City of Redmond Park Master Plan (Park Plan) and an adopted Area Plan. In particular, where the Park Plan indicates there is a need for neighborhood or community park, the master plan shall identify sites that may be suitable for park development using the design and location criteria from the Park Plan or an adopted Area Plan. Density transfers, SDC credits, dedication, and other value consideration may be identified in the planning process to compensate property owners for land dedicated to public use.

7. Air, Noise, and Water Resources. Review air, noise and water resources that may be impacted by planned development and address how adverse impacts will be avoided or mitigated in compliance with applicable local, state, and federal regulations. The analysis may use City public facility plans, technical studies, and policies to meet this requirement when those plans address how urban development in the plan area can be served. In these instances, the Master Development Plan must show that the envisioned land uses in the plan area are consistent with the land use assumptions in the public facility plans. This requirement is particularly important for storm water management.

8. Natural Hazard Areas. Inventory areas subject to natural hazards, particularly steep slopes, and program urban development that is suitable for the identified hazard areas.

9. Residential Uses. Identify areas planned for housing development, if any, and the proposed zoning districts to be applied. The housing plan must identify a mix of housing types and densities so that the overall density in the area meets or exceeds the housing density objectives for the area that are identified in the Redmond Urban Framework Plan, adopted Area Plans, and the Comprehensive Plan. The Framework Plan and adopted Area Plans provide general guidance on housing densities that need to be achieved in order to meet future housing needs. Where proposed residential land uses differ from those shown in the Redmond Urban Framework Plan or adopted Area Plans, the master plan shall demonstrate how it meets the overall housing objectives of the Redmond Urban Framework Plan or adopted Area Plans. Applicants may propose new zoning districts when the proposed district(s) in total achieve the housing densities envisioned in the Redmond Urban Framework Plan or adopted Area Plans.

10. Employment Uses. Identify areas planned for employment use and/or mixed uses and the proposed zoning for these areas. Applicants may propose new zoning districts in cases where existing districts are not suitable for the planned development provided the proposed district(s) achieve similar land improvement values and/or employment densities envisioned in the Redmond Urban Framework Plan or adopted Area Plans.

11. Transportation Analysis and Diagram. Prepare a Transportation Impact Analysis (TIA) including a grid street plan that is consistent with street spacing and connectivity guidelines in the Redmond Transportation System Plan (TSP) and adopted Area or Framework Plans. The TIA shall identify and show:

a. The proposed classification for all streets.

b. The location of approved TSP improvement projects.

c. Any capital improvements that may need to be added to the TSP in order to serve the plan area.

d. Proposed bicycle pedestrian, and trail routes.

e. Demonstrate how planned transportation facilities will connect to transportation facilities in adjacent urban areas.

12. Public Facilities Analysis and Diagram. The plan shall include a conceptual layout of public facilities, (including sanitary sewer, water, and storm drainage) needed to support the planned uses. The Public Facilities Analysis must be consistent with the city's adopted Public Facility Plan (PFP) and related facility master plans, including improvements related to the adopted Area Plan that may require amending the PFP.

13. North Redmond US 97 Interchange Area Management Plan (IAMP) Compliance. The master plan shall comply with the following policies, if applicable:

a. Any property newly annexed within the IAMP area shall have:

i. Direct Access to a local public street other than a state highway consistent with the Local Street Connectivity Plan; and,

ii. Any property to be annexed to the City shall relinquish all direct access rights to a state highway as a condition of development approval (when a legal alternative access exists).

14. Great Neighborhood Principles. MDPs shall address applicable Great Neighborhood Principles below. In instances where the property proposed for a MDP is located within the boundary of an adopted Area Plan, the MDP shall also address the Great Neighborhood Principles according to the specificity provided in the Area Plan.

FINDING: The subject tract does not contain any inventoried significant resources or natural hazards, has not been designated for residential uses or for neighborhood or community parks, and is not located within the North Redmond US 97 Interchange Area Management Plan area. The applicant's plans (attachment A) include a public facilities diagram, a conceptual lot layout plan map, an infrastructure installation and improvement map, and a proposed zoning map. The applicant has also submitted a narrative addressing the Great Neighborhood Principles and other applicable criteria (attachment B), neighborhood meeting materials, and a transportation impact analysis (TIA) associated with the proposal, which culminated in the issuance of a Transportation System Analysis (TSA) Approval Memo (attachment D). These criteria have been met.

D. Implementation. Upon approval, all subsequent development located within the MDP boundaries shall be consistent with the approval.

E. Amendment/Modification to Master Development Plan. Any modifications to the approved MDP shall be subject to the standards and procedures in Article II, "Modifications", and subject to the review criteria contained in this section.

F. Expiration of Master Development Plan. An approved MDP or PMDP shall be subject to the requirements of Section 8.1605 concerning expiration, unless a specific timeline is approved through the land use review process.

FINDING: A standard condition of approval shall be included for this project stating that implementation, amendments/modifications, and expiration to/of the approved master development

plan shall be consistent with the requirements of sections **D, E,** and **F** within Section 8.270 of the Redmond Development Code.

ARTICLE I – ZONING STANDARDS > SUPPLEMENTARY PROVISIONS
RDC Section 8.385

Sec. 8.385. Neighborhood Meeting.

1. *Purpose and Intent.* The purpose of the neighborhood meeting is to provide a forum for the applicant, surrounding neighbors, and interested members of the community to meet and consider a proposed land use application, and to discuss issues/concerns regarding the proposal prior to application submittal. Neighborhood meetings encourage citizen participation early in the development process, and an opportunity to revise the land use application to address the issues prior to application submittal.
2. *Applicability.* Neighborhood meetings are encouraged prior to submitting any land use application. The following application types or development proposals shall be subject to the neighborhood meeting requirements:
    A. Master Development Plans.
    B. Residential or mixed use development proposals that generate 200 or more daily trip ends, or 20 or more p.m. peak hour trip ends, where a Transportation Impact Analysis (TIA) is required.
    C. Wireless and Broadcast Communications Facilities.
3. *Requirements and Procedures.* The neighborhood meeting must be held after a pre-development meeting with City Staff, but before submittal of a land use application. The applicant shall be required to hold only one meeting prior to submitting an application for a specific site but may hold more if desired. If the development proposal is revised after the neighborhood meeting, and a major modification is requested, a second neighborhood meeting with a new notice shall be required before the revised application is submitted.
    A. *Location and Time.* Neighborhood meetings shall be held in person at a location in reasonable proximity to the subject site. The meeting shall be held at a location open to the public., City Staff, and at a facility that is ADA accessible. The meeting shall be held on a weekday evening, or weekends at any reasonable time. Applicants may provide a virtual component for participants to join in the meeting. The virtual component shall not be done in lieu of the in-person requirements. ADA accommodations when requested by attendee must be provided.
    B. *Notice - Mail.* Mailed notice of the meeting shall be provided by the applicant to the neighboring property owners (within 750 feet outside city limits and 250 feet within city limits) and the Community Development Department between ten and 30 calendar days prior to the meeting. Notices must be sent first class and shall include the date, time, and location of the meeting, as well as a brief description of the development proposal and property location. The description shall take into consideration information provided by City staff at the pre-development meeting, include project contact information, a copy of the tax map or a GIS map that clearly identifies the location of the proposed development, and a conceptual site plan.
    C. *Notice - Signage.* The applicant shall also post notice of the neighborhood meeting on the subject site or on an access easement to the site within clear view of a public street at least

seven days in advance of the meeting. The sign must display the meeting date, time, and address as well as project contact information.

D. *Meeting Requirements.* The developer must provide a sign-in sheet for attendees to provide their name, address, telephone number, and email address. At the meeting, the applicant shall provide a conceptual site plan and describe the major elements of the proposal. Depending on the type and scale of the particular application, the applicant should be prepared to discuss proposed land uses and densities; traffic impacts; proposed building size and height; proposed access and parking; and proposed landscaping, buffering and/or protection of natural resources as applicable. Attendees will have an opportunity to speak at the meeting and may identify any issues that they believe should be addressed. If no one arrives within 30 minutes of the scheduled start time for the meeting, the applicant may close the meeting and this requirement will be considered met upon the applicant's submittal of the documentation to that effect.

E. *Materials Submitted with Application.* The neighborhood meeting notes that identify the major points discussed about the development, list of parties notified, signed affidavits of mailing and posting notices, copies of all materials provided by the applicant, and a signature sheet of attendees shall be included with the development application upon submittal.

F. *Validity Period.* The land use application shall be submitted to the City within 180 days of the neighborhood meeting. If an application is not submitted in this timeframe, the applicant shall be required to hold a new neighborhood meeting.

G. *Denial.* Failure of the applicant to hold a neighborhood meeting in accordance with these provisions prior to submittal of a land use application shall result in an incomplete application and the application may be rejected.

FINDING: As this land use proposal includes a Master Development Plan, a neighborhood meeting is required. The applicant held two neighborhood meetings on July 21, 2025, and March 10, 2026, and submitted this land use application package within 180 days of the most recent neighborhood meeting. The applicant has submitted documentation that demonstrates compliance with this standard.

ARTICLE I – ZONING STANDARDS > AMENDMENTS
RDC Sections 8.750 and 8.760

8.750 Authorization to Initiate Amendments. An amendment to the text of this chapter (Redmond Development Code), to the Comprehensive Plan, or an amendment to the Comprehensive Plan Map may be initiated by City Council, Planning Commission, or Community Development Director. A property owner may initiate a request for a map or text amendment by filing an application with the Community Development Department.

FINDING: The applicant has submitted a Comprehensive Plan and Zoning Map amendment application with the Community Development Department, requesting an amendment to reconfigure the current Zoning Map's layout of the M-1 and C-4A zoning districts on the subject properties, as well as introduce M-2 zoning. The process is being reviewed as a "Zoning Map Amendment", since no changes to the Comprehensive Plan Map are being proposed.

8.760 Criteria for Amendments. The burden of proof is upon the applicant. The applicant shall show the proposed change is:

1. In conformity with all applicable State statutes;

FINDING: Staff has determined the following State statutes that directly apply to this application include:

ORS 197.610: *Submission of proposed comprehensive plan or land use regulation changes to Department of Land Conservation and Development* – with regard to this statutory noticing requirement, notice of the applicant's proposed amendment to the Zoning Map has been provided to the Department of Land Conservation and Development; the public hearings advertised in the local newspaper; and notice mailed to adjoining landowners, as required by the Redmond Development Code and State Statute.

ORS 197.250: *Compliance with Goals Required* – compliance with all applicable Statewide Planning Goals is addressed in criterion #2 below.

ORS 197.797: *Local Quasi-Judicial Land Use Hearings* - the applicable Redmond Development Code standards (sections 8.0750 to 8.0775, *Amendments,* and sections 8.1010 through 8.1035, and 8.1300 through 8.1380, *Land Use Procedures*) were developed in compliance with this statute regarding noticing and public hearings. This proposed amendment is subject to Sections 8.1300 through 8.1380 of the Redmond Development Code, which implement the quasi-judicial Statutory requirements. The Planning Commission and City Council's public hearings and review processes meet the statutory requirements for the purpose of the review.

Based on the above discussion and finding, the applicant's proposed amendment to the Zoning Map is determined to comply with the applicable State statutes and therefore complies with criterion #1.

2. In conformity with the State-wide planning goals whenever they are determined to be applicable;

FINDING: Conformance with each State-wide planning goal are addressed below:

Goal 1 – Citizen Involvement - calls for the opportunity for citizens to be involved in all phases of the planning process. The Redmond Urban Area Planning Commission serves as the City's formal citizen advisory commission to fulfill Goal 1 and is made up of Redmond area residents. The applicant's proposed amendment to the Zoning Map will be reviewed in public hearings with both the Planning Commission as well as City Council in accordance with the Redmond Development Code (RDC). Additionally, the RDC required the applicant to conduct a neighborhood meeting prior to submitting their land use application package, which allowed for citizen input very early in the planning process.

Public notices and agendas for Planning Commission and City Council public hearings are provided in accordance with the RDC. All documents are available for public review. The public notice advertising the May 20th public hearing with the Planning Commission was published in the *Redmond Spokesman*.

Goal 2 – Land Use Planning – requires establishing a land use planning process and policy framework as a basis for all decisions and actions related to use of land and to assure an adequate factual base for such decisions and actions. The applicant's proposed amendment to the Zoning Map will be reviewed in accordance with the planning processes and policy framework that have been established in the adopted Redmond Development Code.

Goal 3 – Agricultural Lands – is not applicable because there are no agricultural lands in the city limits.

Goal 4 – Forest Lands – is not applicable because there are no forest lands in the city limits.

Goal 5 – Natural Resources, Scenic and Historic Areas, and Open Spaces – is not applicable because the subject properties do not contain any inventoried open spaces, scenic areas, historic resources, or natural resources.

Goal 6 – Air, Water, and Land Resources Quality –

Applicant Response: *"Goal 6 is not directly applicable to the Map Amendment, because the proposed Comprehensive Plan Map Amendment and Zoning Map Amendment only modify the amounts and locations of zones on a map, the proposal will not have any direct impacts on air, water or land resources. Also, air and water quality are regulated by the Oregon Department of Environmental Quality, procedures that fall outside of the local land use review process."*

The applicant also provided a breakdown of the different zones relating to land uses and demonstrated that the proposed zoning and correlating locations is consistent with the EFP, the 2040 Comprehensive Plan, and will result in a more diverse site for business and commerce. Additionally, the applicant is aware that future development of the plan area will require site and design review. Statewide Planning Goal 6 is met.

Goal 7 – Areas Subject to Natural Hazards – is not applicable because the subject properties are not located within an area of identified natural hazards.

Goal 8 – Recreational Needs – is not applicable because the subject area is not located within an area identified for recreational use.

Goal 9 – Economic Development – requires the City to plan and zone enough land to meet the community's projected commercial and industrial needs. The City adopted an Economic Opportunities Analysis (EOA) in 2020. This document serves as the City's compliance document under Goal 9, OAR 660-009-0015, and ORS 197.712. Strategies identified in the EOA carried over as economic development goals and policies outlined in Chapter 9 of the City's Comprehensive Plan. This goal is relevant to the proposed Zoning Map amendment because the land involved in this request is entirely designated as commercial and industrial.

The applicant response to this goal states the following:

"*This proposal includes a refinement to Employment lands, in order to facilitate and entitle a 204.56 acre property, so that it can provide for economic development. The Comprehensive Plan Map Amendment and Zone Change will add 12.5 acres of Commercial Zoned land (and decrease in the amount of Industrial Zoned Land of an equivalent amount) and it will provide a mix of Light (M-1) and Heavy (M-2) Industrial Land, instead of M-1 only. The proposal will place Commercial lands closer to existing development in the City, the City's Eastside Arterial, and density in generally. Furthermore, the amendment will allow for greater diversity in Industrial uses in the area, by adding M-2 lands to the development area.*

All of the existing and planned zones are economic development ("Employment") zones. The planned configuration adds Commercial zoned lands (which the City EOA identifies as being at a deficit), only sacrificing Industrial Zone land (which the EOA identifies as being at a surplus). Furthermore, the planned configuration places the C-4A Zoned lands in locations where they are efficient and can be developed in the near-term, in an orderly fashion. Also, introducing the M-2 Zone into the site allows for a greater variety of Industrial uses, which, when combined with the associated Master Development Plan, will provide for timely and orderly development, and accommodate current market demands.

The planned changes provide for efficient urban style development, accommodating an associated Master Development Plan that the applicant is ready to execute; the planned Map Amendments will allow for the realization of the economic potential of the subject property. Additional steps for development of the site include the associated Master Development Plan, in addition to future Subdivision(s) and Site Plan Review(s). The proposal and associated steps will ultimately result in efficient development occurring on the site; development that is generally consistent with the Eastside Framework Plan. For the aforementioned reasons, the proposal will improve economic opportunities to the City in conformance with this goal.

Ultimately, the proposal will improve economic opportunities on the property and in the City, which will contribute to economic development consistent with Goal 9."

The Redmond Economic Opportunities Analysis states the following:

"*Redmond has a deficit of about 159 gross acres of land for commercial office, services, and retail uses. This deficit can be accommodated through development in the UH-10, as part of a master planning process, or through redevelopment of the South Highway 97 corridor. Redmond's commercial businesses may locate in existing built spaces or on sites smaller than 5 acres. In addition, Redmond should consider planning for one or more new commercial centers (e.g., neighborhood or community center) for larger-scale commercial development. In addition, Redmond should plan for smaller village centers with new residential development." (*Page vi, 2020 Redmond EOA, prepared by ECONorthwest)

Based on the current state of the Redmond Economic Opportunities Analysis as it related to employment lands and zones, Statewide Planning Goal 9 is met with this request because the request will add commercial land where a deficit currently exists, and it will provide a greater variety of employment lands with the introduction of M-2 zoning.

Goal 10 – Housing – provides for the housing needs of citizens of the state. The property does not currently contain any lands designated for residential use, and the proposed zoning does not include any lands designated for residential use. Neither the EFP nor the Redmond 2040 Comprehensive Plan contemplates the subject land for residential use. Therefore, Goal 10 is not applicable.

Goal 11 – Public Facilities and Services –

The applicant response to this goal states the following:

"OAR 660-11 implements Goal 11, and notes, "Cities or counties shall develop and adopt a public facility plan for areas within an urban growth boundary containing a population greater than 2,500 persons…" The City of Redmond exceeds 2,500 people and has adopted water, wastewater, and transportation master plans. The City PFPs detail long-range infrastructure needs, along with a path to completion and financing mechanisms. The water and sewer extensions that are planned with the associated Master Development Plan (which includes the map amendments) are consistent with the City PFPs.

Collectively, the adopted local land use regulations (PFPs, the Development Code, and City Standards and Specification) provide a framework that ensures that timely, orderly, and efficient arrangement of public facilities and services are achieved throughout the City. The adopted provisions establish that needed public facilities improvements are made concurrent with development. Because the Map Amendments maintain the same amount of Employment land with mostly the same acreages

(Commercial and Industrial), the planned improvements will be consistent with the City PFPs, additional improvements or right-of-way dedications are not needed at this time. Ensuring conformance with the adopted Development Code regulations will provide consistency with Goal 11."

Goal 11 requires the City to plan and develop a timely, orderly, and efficient arrangement of public facilities and services to serve as a framework for urban and rural development. As growth occurs, frequent updates are made to public facility master plans, pertinent reports, and documents. The applicant's proposed Zoning Map amendment changes acreages of the subject properties' two zoning districts, as well as introduces a third zoning district, and therefore has potential to impact the public facilities and services that have already been planned for in the area with the City's Public Facility Plans. In conjunction with this zoning map amendment request, the applicant has also requested a Master Development Plan (reviewed earlier in this report), which discusses the impact to public facilities and infrastructure and adequately plans and designs for the needed upgrades to these facilities. Additionally, the applicant has submitted an Infrastructure Allocation Analysis as a requirement for Master Development Plans.

Goal 12 – Transportation –

The applicant response to this goal states the following:

"Goal 12 is implemented through the Transportation Planning Rule and OAR 660-12-0060, in addition to local land use regulations. As detailed in the Traffic Report, the changed zones only impact employment lands, and maintain similar acreages of Commercial and Industrial Lands. As detailed in the Traffic report, with the planned improvement, the proposal will adequately mitigate impacts to the transportation facilities and the proposal is consistent with the TPR. Furthermore, the current proposal includes a Traffic Impact Study, detailed findings of which are included in the attachment (also discussed immediately above).

Goal 12 requires the City to provide and encourage a safe and convenient and economic transportation system. This goal is implemented through the Transportation Planning Rule (TPR) and OAR 660-012-0060 as well as local regulations (i.e., the City's Transportation System Analysis requirement). The applicant's proposed amendment to the Zoning Map triggered the TPR and required the applicant's traffic impact analysis determine whether the modification to the subject properties' zoning districts would significantly affect an existing or planned transportation facility. As detailed in the applicant's traffic impact analysis, the zoning modification will not significantly affect any transportation facility and as such, the proposal is consistent with the TPR.

Goal 13 – Energy Conservation – is not applicable because the applicant's proposed amendment to the Comprehensive Plan Map will not have any direct impacts on energy. As the applicant has stated, through the Eastside Framework Plan and the Redmond 2040 Comprehensive Plan, the City has determined how land will be most efficiently used within the anticipated commercial and industrial areas. The proposed change in zoning would result in slightly higher acreages of C-4A zoning which could lend to future commercial development on the east side of Highway 97 where commercial uses are generally scarce. This is anticipated to reduce cross-town travel for commercial needs and serve the residential areas to the north in a commercial capacity.

Goal 14 – Urbanization – requires the City to provide for an orderly and efficient transition from rural to urban land use, to accommodate urban population and urban employment inside urban growth boundaries, to ensure efficient use of land, and to provide for livable communities. The applicant's proposed amendment does not modify the location of the Comprehensive Plan Map's zoning designation, but rather the lands already within the UGB and City Limits. The proposed amendment will

not alter the area of the UGB and conforms with the intent of the EFP and Redmond 2040 Comprehensive Plan.

Goal 15 – Willamette River Greenway – is not applicable to lands within the city of Redmond.

Goal 16 – Estuarine Resources – is not applicable to lands within the city of Redmond.

Goal 17 – Coastal Shorelands – is not applicable to lands within the city of Redmond.

Goal 18 – Beaches and Dunes – is not applicable to lands within the city of Redmond.

Goal 19 – Ocean Resources – is not applicable to lands within the city of Redmond.

Based on the above discussion and findings, the applicant's proposed amendment to the Redmond Zoning Map is determined to comply with the statewide planning goals and therefore complies with criterion #2.

3. In conformity with the Redmond Comprehensive Plan, land use requirements and policies; and

FINDING: Staff has examined the applicant's response to this criterion and concurs that the applicant-selected Comprehensive Plan policies are applicable and that the response to each respective policy is sufficient. Staff, therefore, finds that the applicant's proposed amendment to the Redmond Zoning Map conforms to the Comprehensive Plan.

4. That there is a change of circumstances, further studies justifying the amendment or mistake in the original zoning.

FINDING: The applicant has provided the following statement explaining the reasoning for the proposed amendment to the Zoning Map's zoning designations of the subject properties:

"*The reason for the Map Amendments is because Watson Development has acquired the land and has established a comprehensive set of plans to implement the Eastside Framework Plan, based upon current market trends and land supply needs. Given the topography of the site, the necessary street and walkway layouts, the water and sewer design, desired use types, and intent to move the Commercial Zone (with the potential for mixed-use and/or residential uses) nearer to existing urban development, improvements and amenities, the proposed design is the best fit for timely and comprehensive development. While the original design (identified in the Eastside Framework Plan and the Comprehensive Plan) was a high level assessment, the current project is more granular, detailed, and responsive to current market demands. The process of thoroughly assessing a property and developing it with product types of to meet current market demands, constitutes a change of circumstances, which is sufficient for compliance with this approval criterion*."

As stated in the applicant narrative, the reason for the requested change in zoning is driven by market demands, land usability, needed infrastructure improvements, and increased efficiency for future land use. Due to the fact that the Redmond Economic Opportunities Analysis indicates a deficiency of commercial lands and a surplus of industrial lands, and given that this request will slightly increase the supply of commercial lands while slightly decreasing the supply of industrial lands, staff supports the applicant's rationale for the proposed amendment and believes the change of circumstances is sufficient for compliance with this criterion.

Conclusion:

Based upon the submitted plans, materials, and the proposed findings and conditions of approval included herein, staff believes that all requirements can be fulfilled to support the Redmond East Gateway Master Development Plan and Zoning Map Amendment, consistent with all applicable City policies, rules, and regulations.

III. RECOMMENDATION & CONDITIONS OF APPROVAL

Recommendation:
Based on the submitted plans, staff findings and conclusions, staff recommends the Planning Commission make a recommendation to the City Council to approve the Redmond East Gateway Zoning Map Amendment and Master Development Plan applications (File Nos. 711-26-000038-ZMA and 711-26-000039-MD), subject to the conditions of approval below.

Conditions of Approval:
The following conditions of approval shall be required:

1. Any substantial alteration to the approved plans, except as modified by the following conditions of approval, shall be subject to the standards and procedures in RDC Section 8.270(14)(E), *Amendment/Modification to Master Development Plan*.

2. To ensure compliance with the Public Art or Artistic Feature Great Neighborhood Principle, the proposed master development plan shall provide for a location for the potential installation of public art or artistic feature, preferably at the neighborhood gateway, in and around the center of the area, or along the multi-use pathway bordering Highway 126.

3. Upon approval of this Master Development Plan and Zoning Map Amendment, the developer/applicant shall dedicate to the City of Redmond major collector right-of-way width for the entirety of SE 17th Street as shown in the application materials and the TSP. The street dedication must be in conformance with the requirements of the City Engineering Department.

4. Upon approval of this Master Development Plan and Zoning Map Amendment, the developer/applicant shall dedicate right-of-way to the City of Redmond for any portion of proposed street, which separate zoning districts as depicted in the schematics reviewed in this report and shown in *Figure 3* of this report. The street dedications must be in conformance with the requirements of the City Engineering Department. The specific rights-of-way to be dedicated are as follows:

- SE 17th Street in its entirety (identified as a Major Collector)
- SE 15th Street from intersection with E Antler and traveling south to terminus/intersection with Evergreen Ave (SE 15th Street identified as Local Industrial)
- Evergreen Ave from intersection with SE 15th Street and traveling west to intersection with SE 14th Street (Evergreen Ave identified as Local Industrial)
- SE 14th Street from intersection with Evergreen Ave and traveling south to terminus/intersection with SE Glacier Ave (SE 14th Street identified as Local Industrial)
- SE Glacier Ave between SE 14th Street and SE 17th Street (SE Glacier Ave identified as Local Industrial)
- SE 13th Street in its entirety (identified as a Local Industrial)

5. Future land division or development of this site shall be required to complete the necessary review process and shall conform to this Master Development Plan as it relates to zoning boundaries, planned street improvements and installations, planned utility improvements, and dedication of streets and pathways.

6. Future land division or development of this site shall be required to conform to applicable areas of the Redmond 2040 Comprehensive Plan.

7. The applicant shall coordinate directly with the Central Oregon Irrigation District (COID) for all COID-related issues.

8. Redmond East Gateway (REG) shall provide a Transportation Impact Analysis (TIA) compliance memo at each phase of development demonstrating individual phase/development impacts, cumulative phase/development impacts compared to total approved trips through approved Transportation System Analysis Application (TSAA).

9. Future development or land division on the subject property shall conform to the required infrastructure improvements as detailed in the submitted Development Agreement.

10. Future development or land division on the subject property shall conform to the standards and requirements of the City of Redmond Sewer Collection System Master Plan, the Water Master Plan, and the Transportation Master Plan.

// **END OF CONDITIONS** //

Prepared by:
Landon Stevens
Long Range Planner

ATTACHMENT A

Redmond East Gateway
Master Development Plan

EXISTING CONDITIONS

Redmond, OR
December 2025

TAXLOT: 1513000000131
DESCHUTES COUNTY
NO SITUS ADDRESS
±135.9 - ACRES
(ZONE: M1)

N

0 100' 200' 400'
SCALE: 1" = 200'

LEGEND (EXISTING)

- SECTION LINE
- RIGHT-OF-WAY
- RIGHT-OF-WAY CENTERLINE
- SUBJECT PROPERTY LOT LINE
- APPROX. ADJACENT TAXLOT LINE
- EASEMENT
- BUILDING
- CURB
- EDGE OF GRAVEL
- MAJOR CONTOUR
- MINOR CONTOUR
- FENCE, AS NOTED
- WATER PIPE, SIZE AS NOTED
- SEWER PIPE, SIZE AS NOTED
- STORM PIPE, SIZE AS NOTED
- OVERHEAD POWER
- UNDERGROUND FIBER OPTIC
- GAS MAIN
- COMMUNICATIONS
- CONCRETE, AS NOTED
- FOUND MONUMENT- ALUMINUM CAP
- FOUND MONUMENT- BRASS CAP
- FOUND MONUMENT- 5/8" IRON ROD
- FOUND MONUMENT NUMBER
- BENCHMARK
- SANITARY SEWER MANHOLE
- STORM DRYWELL
- CURB INLET CATCH BASIN
- FIRE HYDRANT
- WATER VALVE, AS NOTED
- UTILITY POLE, AS NOTED
- MAILBOX

TAXLOT: 1513100000100
CITY OF REDMOND
1495 E ANTLER AVE
±55.0 ACRES
(ZONE: M2)

PARCEL 1 (PP2025-21)
TAXLOT: 1513150000100
DIAMOND P HOLDING COMPANY LLC
1050 E ANTLER AVE
+/-26.11 ACRES
(ZONE: M1)

PARCEL 2 (PP2025-21)
TAXLOT: 1513150000103
DIAMOND P HOLDING COMPANY LLC
1350 E ANTLER AVE
+/-19.44 ACRES
(ZONE: M1)

PARCEL 2 (PP2009-21)
TAXLOT: 1513150000101
CENTRAL OREGON IRRIGATION DISTRICT
901 E HWY 126
±147.8 - ACRES
(ZONE: M1 AND C4-A)

PARCEL 3 (PP2009-21)
TAXLOT: 1513150000102
CENTRAL OREGON IRRIGATION DISTRICT
NO SITUS ADDRESS
±48.9 - ACRES
(ZONE M1 AND C4-A)

TAXLOT: 151315BD00200
HEART OF OREGON CORPS INC
±3.44 ACRES
(ZONE: M1)

TAXLOT: 151315BD00100
OPPORTUNITY FOUNDATION OF CEN ORE
±15.11 ACRES
(ZONE: M1)

TAXLOT: 1513150000300
CITY OF REDMOND
411 SW 9TH ST
±188.9 - ACRES
(ZONE: AIRPORT COMP)

TAXLOT: 1513000000103
DESCHUTES COUNTY
1002 NE 17TH ST
±1,556.9 - ACRES
(ZONE: M1 AND C4-A)

NE 9TH STREET (MINOR ARTERIAL)
SE 8TH STREET
SE 9TH STREET (MINOR ARTERIAL)
E ANTLER AVENUE (MAJOR COLLECTOR)
SE EVERGREEN AVE (LOCAL INDUSTRIAL)
HIGHWAY 126
VETERANS WAY (MAJOR COLLECTOR)

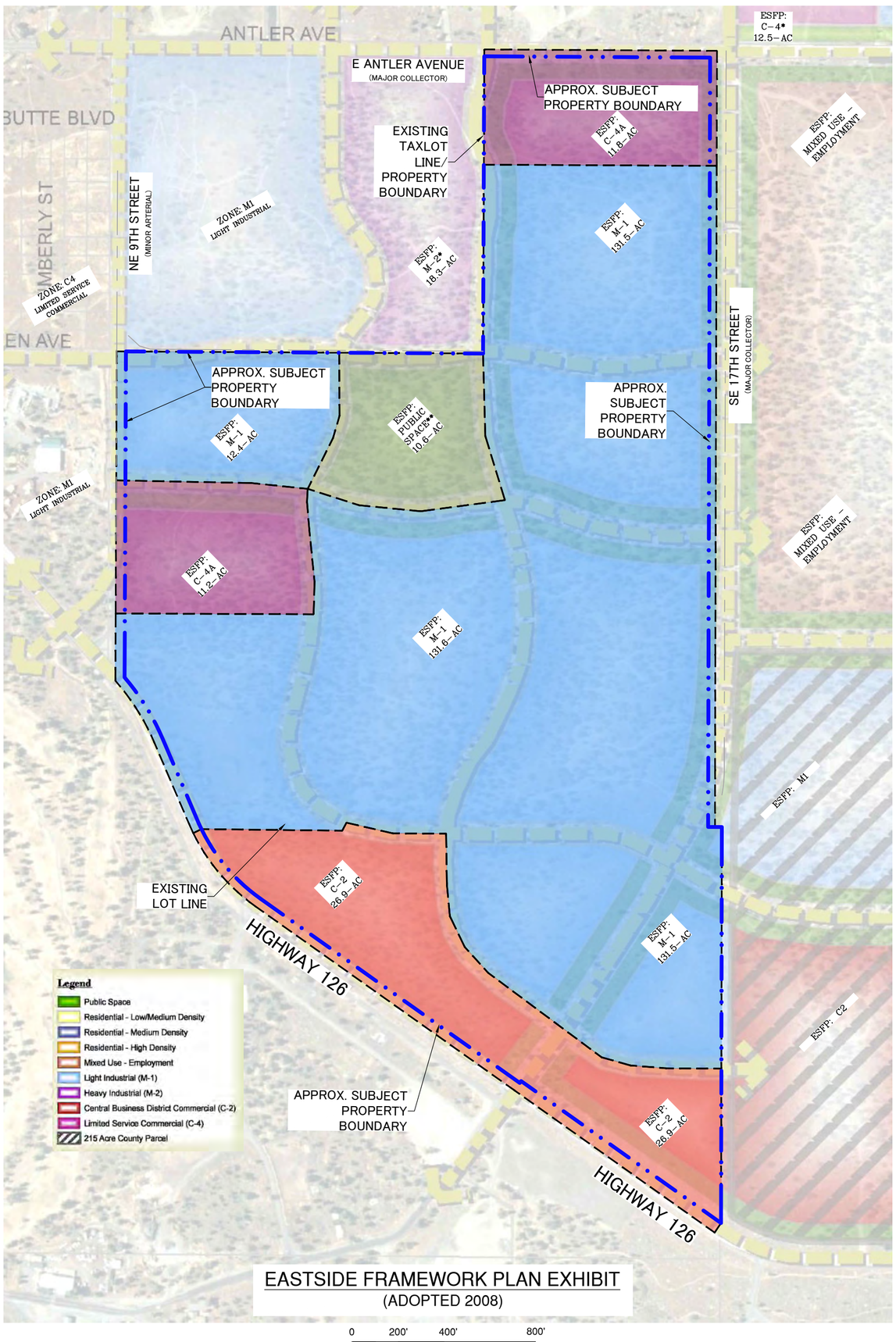
FH1199 FH1200 FH1210 FH1211 FH1212 FH1213 FH1214 FH1215 FH1216 FH1670

APPROX. END OF PAVEMENT AND LOCATION OF 8-INCH SEWER MAIN (PER 711-25-00011PW)
APPROX. LOCATION OF 12" COR WATER MAIN STUB (PER 711-25-00011PW)
±40' PAVED WIDTH
±23' - 28' PAVED WIDTH (DEGRADED)
±277'
OVERHEAD POWER
POWER EASEMENT
PACNWBELL EASEMENT
10' CNG EASEMENT
50' CNG CONSTRUCTION EASEMENT
60' RIGHT-OF-WAY
BARBED WIRE FENCE
S89° 39' 34"E 987.59'
TAXLOT LINE/ SUBJECT PROPERTY BOUNDARY
POWER POLE, TYP
50' PPL EASEMENT
10' ROW DEDICATION WITH PP2025-21
S89° 39' 26"E 1561.58'
18" COR WATER MAIN STUB
±25.5' PAVED WIDTH
80' RIGHT-OF-WAY
N0° 14' 17"E 1309.68'
(E) 18" COR WATER MAIN
(E) 12" COR SEWER MAIN
UNDERGROUND FIBER OPTIC
±26.5' PAVED WIDTH
N0° 14' 20"E 1300.00'
S0° 09' 22"W 2608.91'
SUBJECT PROPERTY BOUNDARY
SECTION LINE
N0° 18' 59"E 115.80'
±623.3'
ODOT RIGHT-OF-WAY
L=316.89 R=1040.00
±31' PAVED WIDTH
ODOT MATERIAL SITE RIGHT-OF-WAY ±326,740 SF (±7.5-AC)
±661.6'
N23° 06' 15"W 369.00'
ODOT MAINTENANCE BUILDING
±340.8'
L=16.03 R=810.00
(E) LOT LINE
S89° 39' 26"E 60.00'
S0° 06' 55"W 755.39'
S0° 07' 02"W 1731.93'
FIBER OPTIC
COMMUNICATIONS LINE
12" COR SEWER MAIN
18" COR WATER MAIN
L=429.32 R=810.00
PNWBELL (LUMEN) EASEMENT
±32.5' PAVED WIDTH
1390.12' N54° 36' 28"W
SUBJECT PROPERTY BOUNDARY (R.O.W. DEDICATION TBD)
GAS MAIN
COMMUNICATIONS LINE
OVERHEAD POWER
S35° 23' 31"W 10.00'
18" COR WATER MAIN
FH1215
18" COR WATER MAIN STUB
18" COR WATER MAIN
±48' PAVED WIDTH
±24.5' PAVED WIDTH
N54° 36' 28"W 1055.58'
±33' PAVED WIDTH
L=16.85 R=675.00
(E) 16" COR WATER MAIN

KNOW LEDGE ENGINEERING, LLC
901 NW Carlon Ave., Suite 3
Bend, OR 97703
541.728.6347
adam@kl-engineering.com

PLOT DATE: December 2, 2025

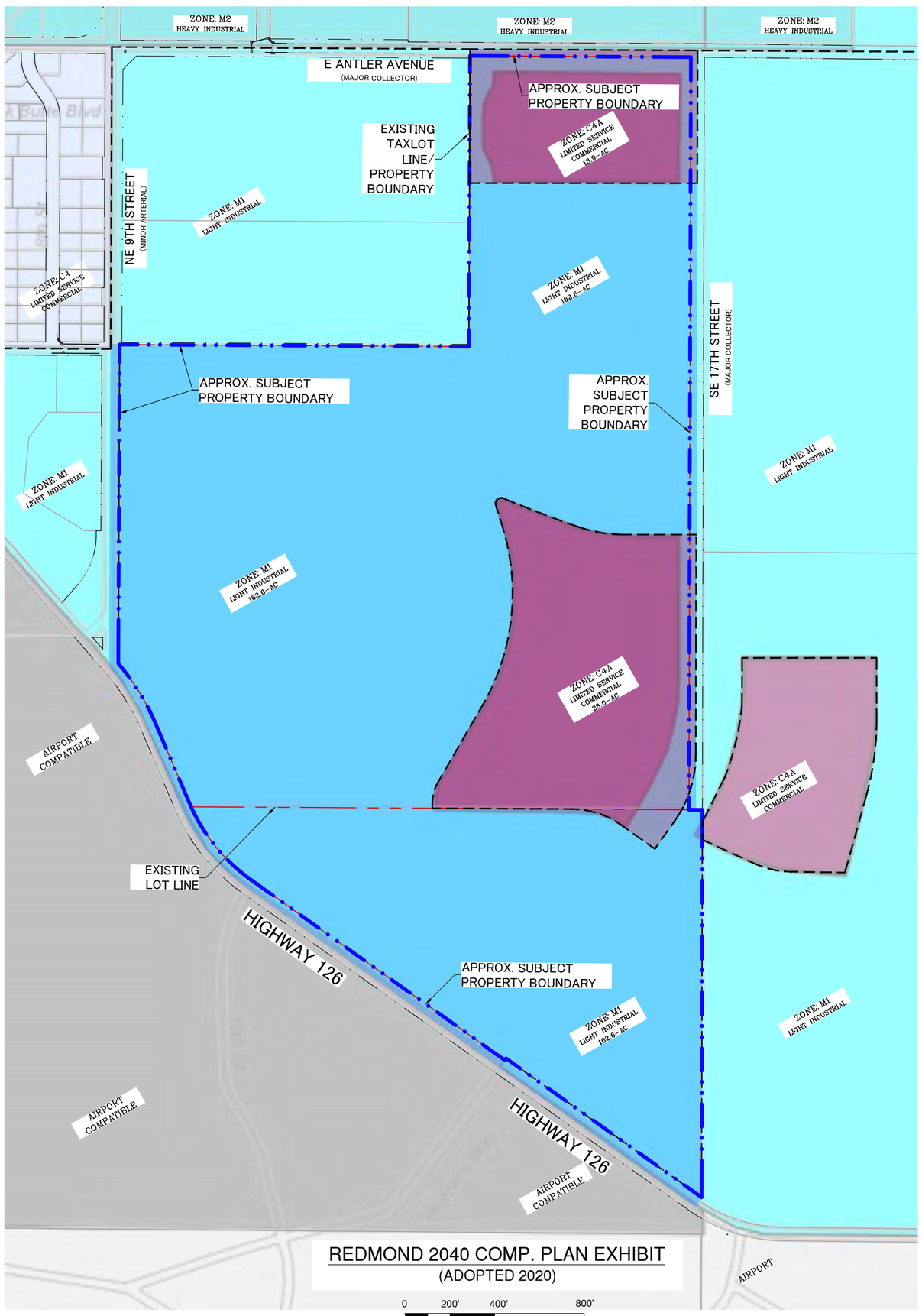
EXISTING CONDITIONS — 1 / EX-A
SCALE: 1" = 200'



EASTSIDE FRAMEWORK PLAN EXHIBIT
(ADOPTED 2008)

0 200' 400' 800'

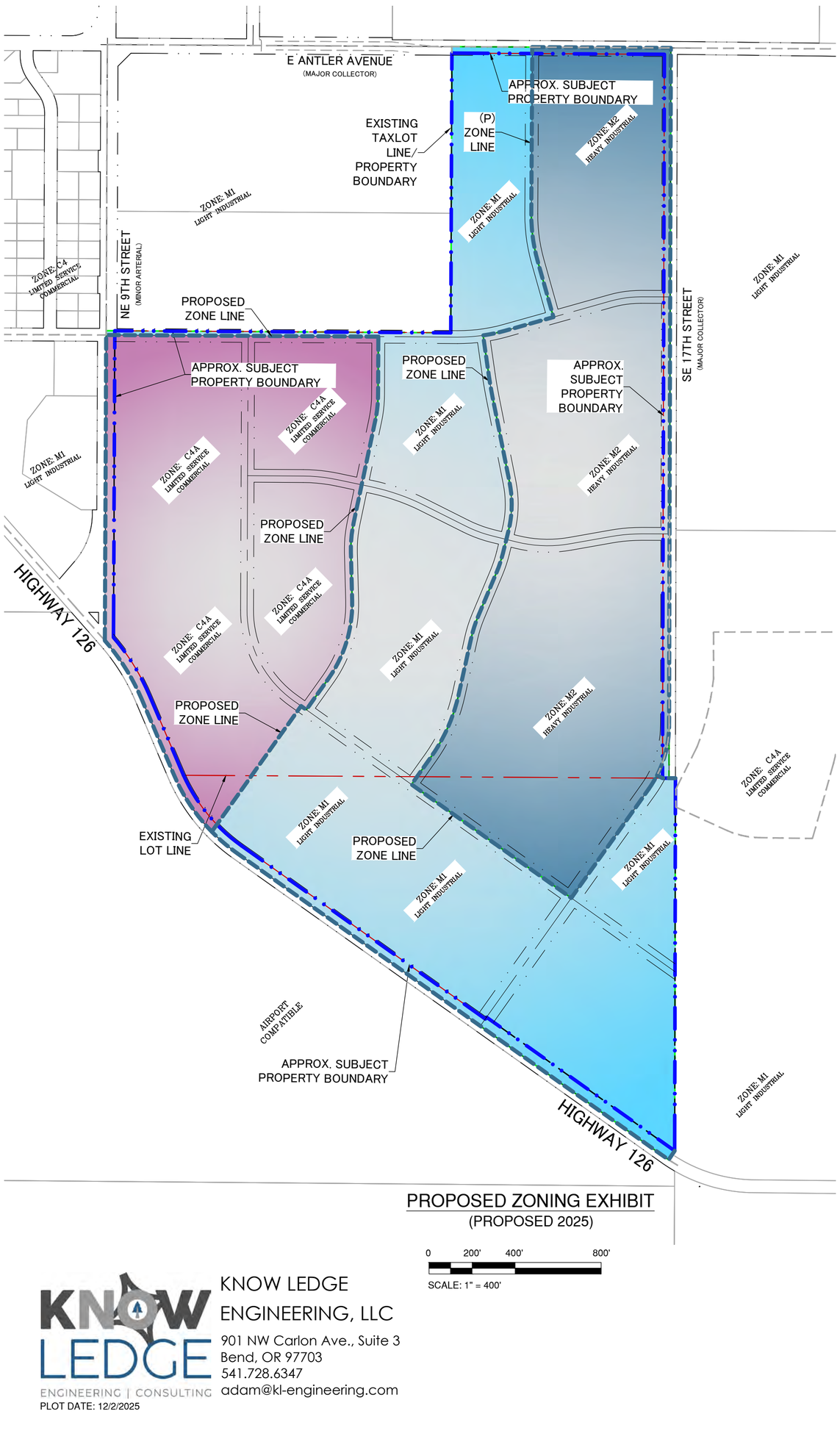
SCALE: 1" = 400'



REDMOND 2040 COMP. PLAN EXHIBIT
(ADOPTED 2020)

0 200' 400' 800'

SCALE: 1" = 400'



PROPOSED ZONING EXHIBIT
(PROPOSED 2025)

0 200' 400' 800'

SCALE: 1" = 400'

GROSS ZONING HISTORY & COMPARISON TABLE

ZONE DESIGNATION	EASTSIDE FRAMEWORK PLAN (ESFP)	REDMOND 2040 COMP PLAN	PROPOSED ZONING
C2 - CENTRAL BUSINESS DISTRICT COMMERCIAL	26.92 - AC	0.00 - AC	0.00 - AC
C4A - LIMITED SERVICE COMMERCIAL	22.98 - AC *	41.94 - AC	50.71 - AC
M1 - LIGHT INDUSTRIAL	144.04 - AC	162.62 - AC	85.76 - AC
M2 - HEAVY INDUSTRIAL	0.00 - AC*	0.00 - AC	68.09 - AC
PUB - PUBLIC SPACE	10.62 - AC**	0.00 - AC	0.00 - AC
TOTAL:	204.56 - AC	204.56 - AC	204.56 - AC

NOTES:

* - ADDITIONAL 12.5 ACRES OF C4A ON ADJACENT PARCEL TO NE IDENTIFIED IN EASTSIDE FRAMEWORK PLAN, CURRENTLY ZONED AS M-2. ADDITIONAL 18.3 ACRES OF M-2 ON ADJACENT PARCEL TO THE NW IDENTIFIED ON EASTSIDE FRAMEWORK PLAN, CURRENTLY ZONED M-1.

** - EASTSIDE FRAMEWORK PLAN DESIGNATED PUBLIC SPACES ADJACENT TO RIGHT OF WAYS ARE NOT DELINEATED OR INCLUDED IN AREA CALCULATIONS.

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PLOT DATE: 12/2/2025

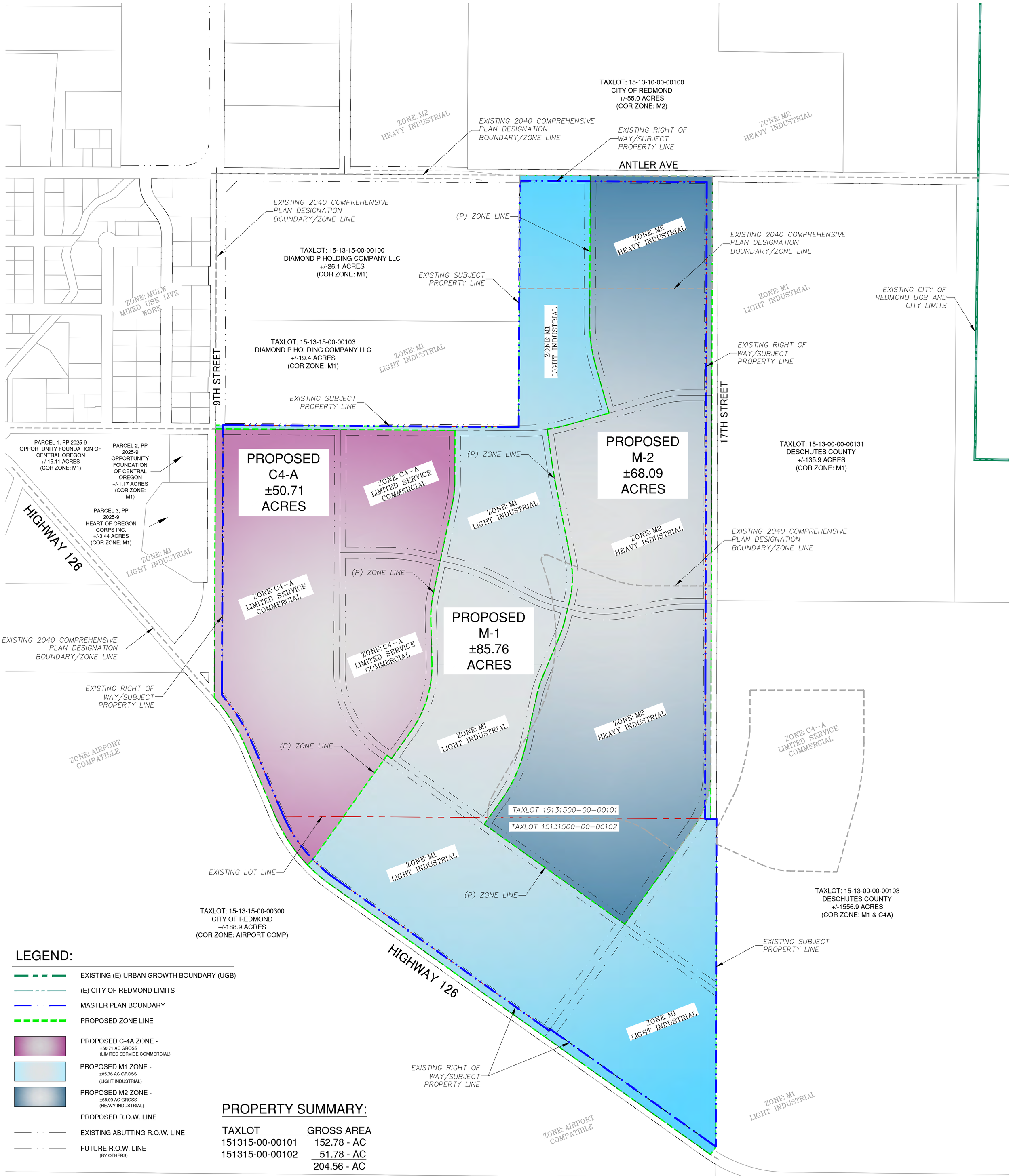
REDMOND EAST GATEWAY PLAN DESIGNATION HISTORY AND COMPARISON EXHIBIT

SCALE: 1" = 400'

1
EX-B1

Redmond East Gateway
Proposed Zoning Exhibit

Redmond, OR



LEGEND:

- EXISTING (E) URBAN GROWTH BOUNDARY (UGB)
- (E) CITY OF REDMOND LIMITS
- MASTER PLAN BOUNDARY
- PROPOSED ZONE LINE
- PROPOSED C-4A ZONE - ±50.71 AC GROSS (LIMITED SERVICE COMMERCIAL)
- PROPOSED M1 ZONE - ±85.76 AC GROSS (LIGHT INDUSTRIAL)
- PROPOSED M2 ZONE - ±68.09 AC GROSS (HEAVY INDUSTRIAL)
- PROPOSED R.O.W. LINE
- EXISTING ABUTTING R.O.W. LINE
- FUTURE R.O.W. LINE (BY OTHERS)

PROPERTY SUMMARY:

TAXLOT	GROSS AREA
151315-00-00101	152.78 - AC
151315-00-00102	51.78 - AC
	204.56 - AC

PROPOSED ZONING SUMMARY

ZONE	ACREAGE
C4-A	50.71-AC
M-1	85.76-AC
M-2	68.09-AC
TOTAL	204.56-AC

0 125' 250' 500'

SCALE: 1" = 250'

NOTE: SEE EXHIBIT B-1 FOR EXISTING ZONING AND COMPREHENSIVE PLAN AMENDMENT SUMMARY OF MODIFIED ZONING

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PLOT DATE: 12/2/2025

REDMOND EAST GATEWAY
PROPOSED ZONING EXHIBIT

SCALE: 1" = 250'

1
EX-B2

Redmond East Gateway

Master Development Plan

Redmond, OR

E ANTLER AVENUE
(MAJOR COLLECTOR)

NE 9TH STREET
(MINOR ARTERIAL)

APPROX. SUBJECT PROPERTY BOUNDARY

(P) ZONE BOUNDARY LINE TO FOLLOW R.O.W. CENTERLINE

EXISTING TAXLOT LINE/ PROPERTY BOUNDARY

TAXLOT: 1513150000100

TAXLOT: 1513150000101

SE 15TH STREET
(LOCAL INDUSTRIAL)

M2-1
±14.52 ACRES
LOT SIZE(S) TBD
(190 KSF IP)

M1-1
±10.35 ACRES
LOT SIZE(S) (TBD)
(±180 KSF IP)

EXISTING TAXLOT LINE/ PROPERTY BOUNDARY

EVERGREEN AVE
(LOCAL INDUSTRIAL)

TAXLOT: 1513150000103

TAXLOT: 1513150000101

SE 17TH STREET
(MAJOR COLLECTOR)

(P) LANDSCAPE BUFFER AND PEDESTRIAN ACCESS EASEMENT (±0.72-AC)

C4A-1
±8.41 - AC
50% MFC / 50% SP
(±100 D.U.
& ±45 KSF COMMERCIAL)

C4A-3
±7.25 ACRES
(6.53-AC)
100% MFC
(±160 D.U.)

SE 9TH STREET
(MINOR ARTERIAL)

SE 13TH STREET
(LOCAL INDUSTRIAL)

M1-2
±9.06 ACRES
LOT SIZE(S) (TBD)
(±160 KSF IP)

SE 14TH STREET
(LOCAL INDUSTRIAL)

M2-2
±16.68 ACRES
LOT SIZE(S) TBD
(±220 KSF IP)

APPROX. SUBJECT PROPERTY BOUNDARY

SE FOREST AVE
(LOCAL INDUSTRIAL)

APPROX. ROADWAY REALIGNMENT AND R.A.B. AT HWY 126/9TH STREET (WITH COR EASTSIDE ARTERIAL PROJECT)

HIGHWAY 126

C4A-2
±18.79 ACRES
(16.94-AC)
65% MFC / 35% SP
(±265 D.U. AND
±65 KSF COMMERCIAL)

SE 11TH STREET
(LOCAL STREET)

C4A-4
±8.65 ACRES
(7.48-AC)
100% MFC
(±180 D.U.)

(P) ZONE BOUNDARY LINE TO FOLLOW R.O.W. CENTERLINE

(P) LANDSCAPE BUFFER AND PEDESTRIAN ACCESS EASEMENT (1.18-AC)

(P) ZONE BOUNDARY LINE TO FOLLOW R.O.W. CENTERLINE

M1-3
±14.10 ACRES
LOT SIZE(S) TBD
(±245 KSF IP)

M2-3
±27.79 ACRES
LOT SIZE(S) TBD
(±360 KSF IP)

(P) 50-FOOT WIDE LANDSCAPE BUFFER AND PEDESTRIAN ACCESS EASEMENT

CONCEPTUAL LANDSCAPE BUFFER WITH LOW STRESS MULTI-USE TRAIL TO PROVIDE SEPARATED PEDESTRIAN ACCESS ACROSS PROJECT FROM EASTERN BOUNDARY TO 9TH STREET

OWNER TO COORDINATE WITH ODOT TO RELOCATE AND VACATE EXISTING ODOT MATERIAL SITE RIGHT OF WAY (DETAILS TBD)

(E) LOT LINE

TAXLOT: 1513150000101

TAXLOT: 1513150000102

(P) LANDSCAPE BUFFER AND PEDESTRIAN ACCESS EASEMENT (±1.85-AC)

SE GLACIER AVE
(LOCAL INDUSTRIAL)

(P) ZONE BOUNDARY LINE TO FOLLOW R.O.W. CENTERLINE

M1-4
±22.38 ACRES
(±20.65-AC)
LOT SIZE(S) TBD
(±360 KSF IP)

M1-5
±4.51 ACRES
LOT SIZE(S) TBD
(±75 KSF IP)

(P) 50-FOOT WIDE LANDSCAPE BUFFER AND PEDESTRIAN ACCESS EASEMENT (±1.72-AC)

SE 17TH STREET
(MAJOR COLLECTOR)

M1-6
±11.94 ACRES
(±10.78-AC)
LOT SIZE(S) TBD
(±190 KSF IP)

(P) 50-FOOT WIDE LANDSCAPE BUFFER AND PEDESTRIAN ACCESS EASEMENT (±1.16-AC)

APPROX. SUBJECT PROPERTY BOUNDARY
(P) 10-FOOT ROW DEDICATION FROM 9TH TO VETERANS WAY

VETERANS WAY
(MAJOR COLLECTOR)

HIGHWAY 126

CONCEPTUAL LANDSCAPE BUFFER WITH LOW STRESS MULTI-USE TRAIL TO PROVIDE SEPARATED PEDESTRIAN ACCESS ACROSS PROJECT FROM EASTERN BOUNDARY TO 9TH STREET

ZONE: M2 HEAVY INDUSTRIAL

ZONE: M1 LIGHT INDUSTRIAL

ZONE: MULW MIXED USE LIVE/WORK

ZONE: C4A LIMITED SERVICE COMMERCIAL

ZONE: AC AIRPORT COMPATIBLE

OHP

N

LEGEND

- SUBJECT PROPERTY BOUNDARY
- EXISTING TAXLOT LINE
- EXISTING R.O.W. LINE
- PROPOSED ZONE LINE
- PROPOSED R.O.W. LINE
- PROPOSED R.O.W. CENTERLINE
- FUTURE RIGHT OF WAY LINE
- PROPOSED C-4A ZONE - ±43.1 AC NET (LIMITED SERVICE COMMERCIAL)
- PROPOSED M1 ZONE - ±72.3 AC NET (LIGHT INDUSTRIAL)
- PROPOSED M2 ZONE - ±58.99 AC NET (HEAVY INDUSTRIAL)
- PROPOSED LANDSCAPE BUFFER AND PED. ACCESS EASEMENT
- OPPORTUNITY FOR PUBLIC ART INCORPORATED WITHIN ROUNDABOUTS AND AT ENTRY GATEWAYS

BLOCK DESIGNATION KEY

A-B	-ZONE-BLOCK #
±C.CC ACRES	-NET BLOCK AREA
(D.DD-AC)	-NET DEVELOPMENT AREA
EE% ---	-EST. USE PERCENTAGE
(FF D.U. / GG KSF)	# OF D.U. / KSF OF FLOOR AREA

ABBREVIATIONS:

DU	-	DWELLING UNITS
(E)	-	EXISTING
FAR	-	FLOOR AREA RATIO
IP	-	INDUSTRIAL PARK
KSF	-	THOUSAND SQUARE FEET OF FLOOR AREA
MFC	-	MULTI-FAMILY COMPLEX
(P)	-	PROPOSED
RAB	-	ROUNDABOUT
ROW	-	RIGHT OF WAY
SP	-	SHOPPING PLAZA
TBD	-	TO BE DETERMINED (WITH FUTURE DEVELOPMENT APPLICATION)

ESTIMATED DEVELOPMENT SUMMARY

ESTIMATED C4-A DEVELOPMENT SUMMARY/NOTES:

C4A-1:	50% SP, 50% MFC
C4A-2:	35% SP, 65% MFC
C4A-3 :	0% SP, 100% MFC
C4A-4:	0% SP, 100% MFC

FAR FOR SHOPPING PLAZA= ±0.25 (±110 KSF TOTAL)
MFC DENSITY= ±24 DU/AC (±705 DU TOTAL)

ESTIMATED INDUSTRIAL DEVELOPMENT NOTES:

- M1 - FAR=±0.40 (±1,215 KSF)
- M2 - FAR=±0.30 (±770 KSF)

TOTAL INDUSTRIAL PARK: ±1,985 KSF

MASTER PLAN DEVELOPMENT SUMMARY:

GROSS LAND AREA	-	204.56 ACRES
RIGHT OF WAY AREA	-	(30.16 ACRES)
NET DEVELOPMENT BLOCK AREA	-	*174.40 ACRES*

DEVELOPMENT AREA SUMMARY:

C4-A NET BLOCK AREA:	*43.09-ACRES*
LANDSCAPE BUFFER:	*3.74-ACRES*
C4-A NET DEVELOPABLE:	*39.35-ACRES*
M-1 NET BLOCK AREA:	*72.32-ACRES*
LANDSCAPE BUFFER:	*2.89-ACRES*
M-1 NET DEVELOPABLE:	*69.43-ACRES*
M-2 NET BLOCK AREA:	*58.99-ACRES*
LANDSCAPE BUFFER:	*TBD*
M-2 NET DEVELOPABLE:	*TBD*

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PLOT DATE: 12/2/2025

MASTER DEVELOPMENT PLAN
SCALE: 1" = 200'
1
EX-C

0 100' 200' 400'
SCALE: 1" = 200'

Redmond East Gateway
Transportation System Diagram
Redmond, OR

N

TO N.B. US-97

NE 9TH STREET (MINOR ARTERIAL)

TO HEMLOCK/N.B. US-97 AND MAPLE OVERPASS

NE 11TH STREET

PLANNED COLLECTOR ROAD (S19) AND BUFFERED BIKE LANE (B38) PROJECTS ALONG ANTLER AVENUE TO WESTERN BOUNDARY. PENDING FINAL DEVELOPMENT TIMELINES, THIS SECTION WILL BE BUILT BY OTHERS AS FRONTAGE IMPROVEMENTS OR BY REG DEVELOPER AS SDC CREDITABLE IMPROVEMENT.

E ANTLER AVENUE
(MAJOR COLLECTOR)

APPROX. SUBJECT PROPERTY BOUNDARY

(F)10' ROW DED. (BY OTHERS)
70'
(E)60' ROW
(P)10' ROW DED.
40'
±277'
645'

ZONE: M2
HEAVY INDUSTRIAL

RAB AT 9TH STREET/ ANTLER.
SDC CREDITABLE (I17).
FINAL LOCATION, CONFIGURATION,
AND RIGHT-OF-WAY TBD

SE 9TH STREET (MINOR ARTERIAL)

TAXLOT: 1513150000100
TAXLOT: 1513150000101

EXISTING TAXLOT LINE/ PROPERTY BOUNDARY

SE 15TH STREET (LOCAL INDUSTRIAL)

SE 17TH STREET (MAJOR COLLECTOR)

M2-1

1157'

373'
60'
30'
30'
(E)60' ROW
(P)10' ROW DED.
40'
70'
(F)10' ROW DED. (BY OTHERS)

SE CASCADE AVE

SE 8TH STREET

SE 7TH STREET

ZONE: MULW
MIXED USE LIVE/WORK

EXISTING RIGHT OF WAY / PROPERTY BOUNDARY

M1-1

ZONE: M1
LIGHT INDUSTRIAL

ADD'L ROW DEDICATIONS AND TEMPORARY DETOUR EASEMENT(S) TBD DURING FUTURE ROUNDABOUT DESIGN

660'
605'
551'
60'

TAXLOT: 1513150000103
(E) 10' ROW

SE EVERGREEN AVE
(LOCAL INDUSTRIAL)

SE EVERGREEN AVE

CONCEPTUAL SINGLE LANE RAB AT 9TH STREET/ EVERGREEN. FINAL LOCATION, CONFIGURATION, AND RIGHT-OF-WAY DEDICATION(S) TBD DURING FUTURE DESIGN STAGE.

PENDING RIGHT OF WAY DEDICATION (BY OTHERS) ALTERNATIVE ACCESS CONTROL MAY BE REQUIRED FOR EVERGREEN CONNECTION TO NINTH STREET (POTENTIAL RIGHT IN/RIGHT OUT)

(P) 50' ROW DED.
TAXLOT: 1513150000101

ADD'L ROW DEDICATIONS AND TEMP. DETOUR EASEMENTS TBD DURING FUTURE ROUNDABOUT DESIGN

487'
338'

C4A-3

M1-2

M2-2

APPROX. SUBJECT PROPERTY BOUNDARY

1102'

ZONE: M1
LIGHT INDUSTRIAL

692'
60'
650'
953'

(E) 40' ROW FROM C.L.

SE 9TH STREET (MINOR ARTERIAL)

SE 13TH STREET (LOCAL INDUSTRIAL)

SE 14TH STREET (LOCAL INDUSTRIAL)

TO REDMOND/ US-97

C4A-1

532'
719'

OREGON ROUTE 126
(ODOT MAJOR ARTERIAL)

80'
40'
(E) 40' ROW FROM C.L.

SE FOREST AVE
(LOCAL INDUSTRIAL)

C4A-4

60'
540'
759'

APPROX. ROADWAY REALIGNMENT AND R.A.B. AT HWY 126/9TH STREET (WITH COR EASTSIDE ARTERIAL PROJECT)

620'

C4A-2

SE 11TH STREET (LOCAL STREET)

M1-3

SE 17TH STREET (MAJOR COLLECTOR)

891'

50'
40'
550'
1224'

(P)10' ROW DED.
50'
541'

M2-3

60'
641'
600'
306'

ZONE: C4A
LIMITED SERVICE COMMERCIAL

626'
911'

SE GLACIER AVE
(LOCAL INDUSTRIAL)

M1-4

M1-5

APPROX. SUBJECT PROPERTY BOUNDARY

ZONE: AC
AIRPORT COMPATIBLE

SEPARATED MULTI-USE PATH (B-46)

CONCEPTUAL LANDSCAPE BUFFER WITH LOW STRESS MULTI-USE TRAIL TO PROVIDE SEPARATED PEDESTRIAN ACCESS ACROSS PROJECT FROM EASTERN BOUNDARY TO 9TH STREET

50'
(P)10' ROW DED.
730'
80'

EXISTING RIGHT OF WAY= SUBJECT PROPERTY BOUNDARY

M1-6

ADD'L ROW DEDICATIONS AND TEMPORARY DETOUR EASEMENT(S) TBD DURING FUTURE ROUNDABOUT DESIGN

PLANNED INTERSECTION IMPROVEMENT PROJECT #I36. ANTICIPATED AS SINGLE LANE ROUNDABOUT IN ACCORDANCE WITH ODOT DESIGN REQUIREMENTS WITH FINAL LOCATION, CONFIGURATION, AND RIGHT OF WAY DEDICATION TBD

ZONE: M1
LIGHT INDUSTRIAL

VETERANS WAY
(MAJOR COLLECTOR)

OREGON ROUTE 126
(ODOT MAJOR ARTERIAL)

50'

CONCEPTUAL LANDSCAPE BUFFER WITH LOW STRESS MULTI-USE TRAIL TO PROVIDE SEPARATED PEDESTRIAN ACCESS ACROSS PROJECT FROM EASTERN BOUNDARY TO 9TH STREET

TO AIRPORT WAY

TO PRINEVILLE

TO AIRPORT/ US-97 YEW INTERCHANGE

KEY NOTES:

1. PROPOSED LOW STRESS MULTI-USE TRAIL TO PROVIDE SEPARATED PEDESTRIAN ACCESS ACROSS PROJECT FROM EASTERN BOUNDARY TO 9TH STREET.
   CITY CAPITAL PROJECT #B46.
   SEE TYPICAL SECTION #1, EX-D2
   NOTE: IMPROVEMENTS ALONG OREGON ROUTE 126 FRONTAGE ARE UNDER CONSTRUCTION BY CITY OF REDMOND WITH EASTSIDE ARTERIAL PROJECT. MULTI-USE TRAIL WILL ALIGN WITH HIGHWAY IMPROVEMENTS.
2. 9TH STREET (EASTSIDE ARTERIAL) IMPROVEMENTS ARE UNDER CONSTRUCTION BY CITY OF REDMOND WITH EASTSIDE ARTERIAL PROJECT. ADDITIONAL RIGHT OF WAY IMPROVEMENTS AND DEDICATIONS ARE TBD WITH FUTURE RAB DESIGN AT 9TH/ EVERGREEN.
3. PROPOSED EAST ANTLER AVENUE COLLECTOR ROADWAY IMPROVEMENTS.
   CITY CAPITAL PROJECT #S19 AND #B38.
   SEE TYPICAL SECTION #2, EX-D2
4. PROPOSED 17TH STREET COLLECTOR ROADWAY IMPROVEMENTS.
   CITY CAPITAL PROJECT #S17 AND #B30.
   SEE TYPICAL SECTIONS #2 AND #3, EX-D2
5. PROPOSED EVERGREEN AVENUE PARTIAL INDUSTRIAL ROADWAY IMPROVEMENTS (R.O.W. C.L. TO MATCH WESTERN EVERGREEN APPROACH TO 9TH).
   SEE TYPICAL SECTION #1, EX-D3
6. PROPOSED INDUSTRIAL ROADWAY IMPROVEMENTS.
   SEE TYPICAL SECTION #2, EX-D3
7. PROPOSED SE 13TH INDUSTRIAL ROADWAY IMPROVEMENTS WITH SEPARATED MULTI-USE TRAIL AND LANDSCAPE EASEMENT (WEST) TO PROVIDE BUFFER BETWEEN INDUSTRIAL AND COMMERCIAL LANDS
   SEE TYPICAL SECTION #3, EX-D3
8. PROPOSED LOCAL ROADWAY IMPROVEMENTS
   SEE TYPICAL SECTION #4, EX-D3
9. CONCEPTUAL PRIVATE DRIVE/SHARED ACCESS. TBD WITH FUTURE DEVELOPMENT TRACT SITE AND DESIGN REVIEW.
10. PROPOSED 10-FOOT WIDE MEANDERING MULTI-USE TRAIL IN ACCORDANCE WITH CITY OF REDMOND STANDARDS TO BE LOCATED WITHIN RIGHT OF WAY, COMMON AREA, OR PED. ACCESS EASEMENT (DETAILS TBD DURING FINAL DESIGN).

LEGEND:

- MASTER PLAN BOUNDARY
- PROPOSED (P) ZONE LINE
- (P) R.O.W. LINE
- (P) R.O.W. CENTERLINE
- (P) LOT LINE
- (P) LANDSCAPE/ PED. ACCESS EASEMENT
- PUBLIC UTILITY EASEMENT (TBD)
- (P) MULTI-USE TRAIL
- (P) SIDEWALK

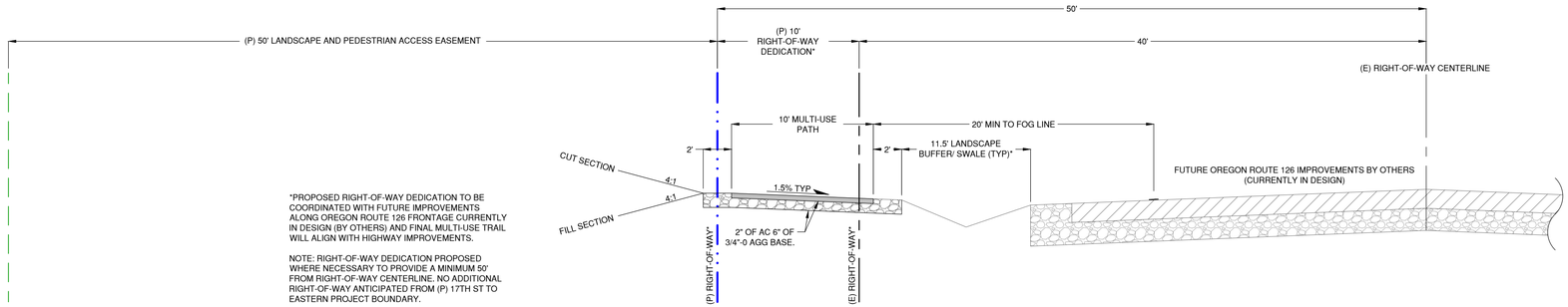
- ARTERIAL ROAD (100-FT R.O.W.*, 50-FT ROAD WIDTH) *NOTE: 80-FT R.O.W. PERMITTED IN EXISTING DEVELOPED AREAS WITHIN CITY LIMITS
- INDUSTRIAL COLLECTOR ROAD (80-FT R.O.W., 40-FT ROAD WIDTH)
- INDUSTRIAL ROAD (60-FT R.O.W., 40-FT ROAD WIDTH)
- LOCAL ROAD (60-FT R.O.W., 36-FT ROAD WIDTH)
- PRIVATE ROADS (ACCESS, PARKING FIELD/CIRCULATION)

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PLOT DATE: 1/28/2026

TRANSPORTATION SYSTEM DIAGRAM 1 / EX-D1
SCALE: 1" = 200'

0 100' 200' 400'
SCALE: 1" = 200'



*PROPOSED RIGHT-OF-WAY DEDICATION TO BE COORDINATED WITH FUTURE IMPROVEMENTS ALONG OREGON ROUTE 126 FRONTAGE CURRENTLY IN DESIGN (BY OTHERS) AND FINAL MULTI-USE TRAIL WILL ALIGN WITH HIGHWAY IMPROVEMENTS.

NOTE: RIGHT-OF-WAY DEDICATION PROPOSED WHERE NECESSARY TO PROVIDE A MINIMUM 50' FROM RIGHT-OF-WAY CENTERLINE. NO ADDITIONAL RIGHT-OF-WAY ANTICIPATED FROM (P) 17TH ST TO EASTERN PROJECT BOUNDARY.

LOW STRESS MULTI-USE TRAIL
TYPICAL SECTION

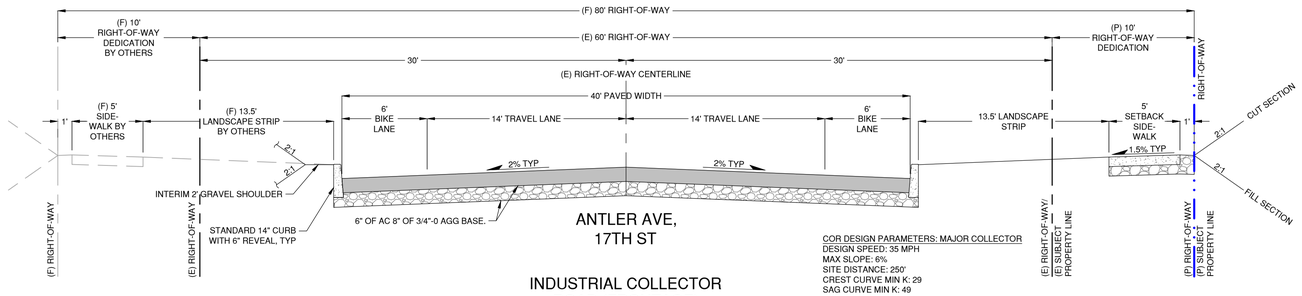
NOT TO SCALE

1
EX-D2

EASEMENT NOTES:

ADDITIONAL EASEMENTS INCLUDING PUBLIC UTILITY EASEMENTS AND PUBLIC ACCESS EASEMENTS TO BE DETERMINED WITH FUTURE DESIGN.

IF ONE DOES NOT EXIST, A MINIMUM OF A 5-FOOT WIDE PUBLIC UTILITY EASEMENT SHALL BE DEDICATED WITHING SUBJECT PROPERTY LANDS THAT ARE ADJACENT TO EXISTING / PROPOSED RIGHT OF WAY IN ACCORDANCE WITH COR STANDARDS.



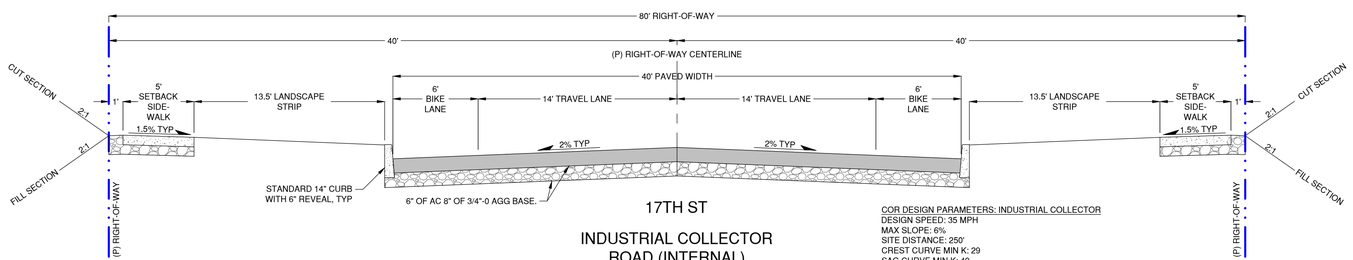
ANTLER AVE,
17TH ST

INDUSTRIAL COLLECTOR
ROAD (FRONTAGE)
TYPICAL SECTION

NOT TO SCALE

2
EX-D2

COR DESIGN PARAMETERS: MAJOR COLLECTOR
DESIGN SPEED: 35 MPH
MAX SLOPE: 6%
SITE DISTANCE: 250'
CREST CURVE MIN K: 29
SAG CURVE MIN K: 49



17TH ST

INDUSTRIAL COLLECTOR
ROAD (INTERNAL)
TYPICAL SECTION

NOT TO SCALE

3
EX-D2

COR DESIGN PARAMETERS: INDUSTRIAL COLLECTOR
DESIGN SPEED: 35 MPH
MAX SLOPE: 6%
SITE DISTANCE: 250'
CREST CURVE MIN K: 29
SAG CURVE MIN K: 49

REGISTERED PROFESSIONAL ENGINEER
83,196PE
OREGON
DEC. 29, 2009
ADAM M. ERLANDSON
RENEWS 12/31/25

PRELIMINARY

REDMOND EAST GATEWAY
MASTER DEVELOPMENT PLAN

REG LLC

TYPICAL SECTIONS

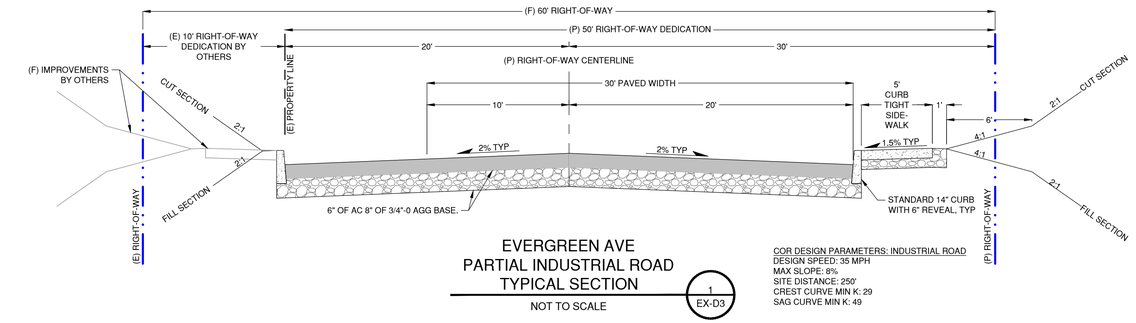
KNOW LEDGE ENGINEERING, LLC
ENGINEERING | CONSULTING
901 NW Carton Ave, Suite 3 | Bend, OR 97702
541.728.6347 | adam@klE-engineering.com

REV:	DESCRIPTION:	BY:	DATE:
3	---	--	--
2	---	--	--
1	---	--	--

PRELIMINARY - NOT FOR CONSTRUCTION

SCALE: 1"

DATE: 12/2/2025
PROJECT NO: 2109-01
DRAWN: ae
CHECKED: ae
SHEET NO: EX-D2

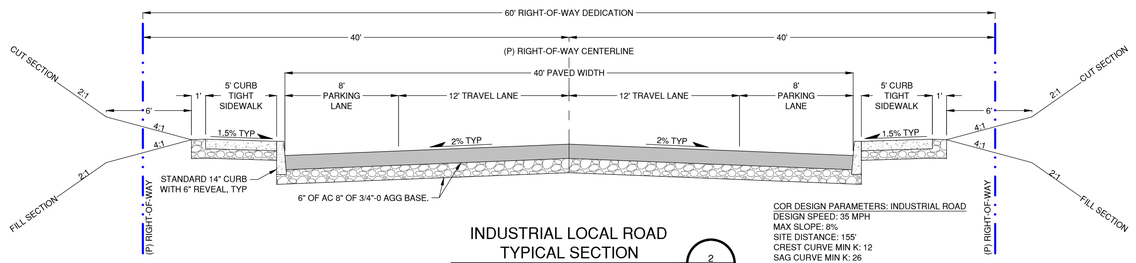


EVERGREEN AVE
PARTIAL INDUSTRIAL ROAD
TYPICAL SECTION

1
EX-D3

NOT TO SCALE

COR DESIGN PARAMETERS: INDUSTRIAL ROAD
DESIGN SPEED: 35 MPH
MAX SLOPE: 8%
SITE DISTANCE: 250'
CREST CURVE MIN K: 29
SAG CURVE MIN K: 49

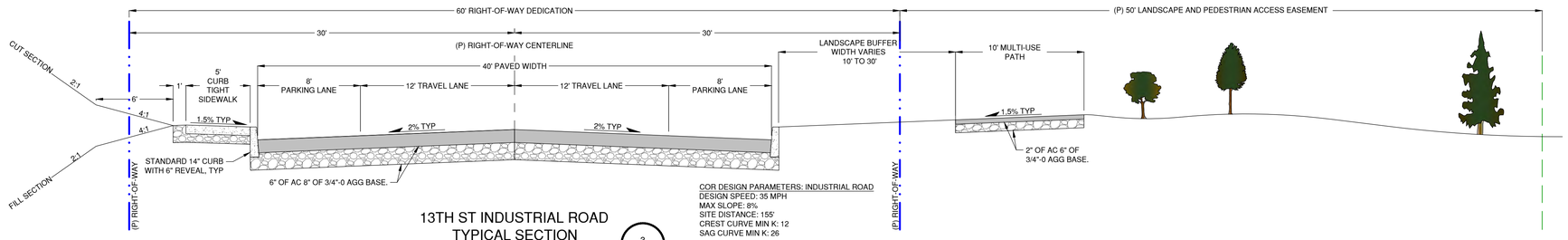


INDUSTRIAL LOCAL ROAD
TYPICAL SECTION

2
EX-D3

NOT TO SCALE

COR DESIGN PARAMETERS: INDUSTRIAL ROAD
DESIGN SPEED: 35 MPH
MAX SLOPE: 8%
SITE DISTANCE: 155'
CREST CURVE MIN K: 12
SAG CURVE MIN K: 26

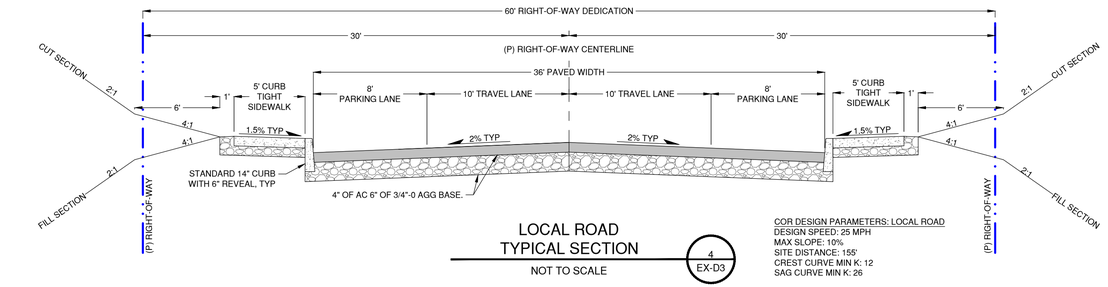


13TH ST INDUSTRIAL ROAD
TYPICAL SECTION

3
EX-D3

NOT TO SCALE

COR DESIGN PARAMETERS: INDUSTRIAL ROAD
DESIGN SPEED: 35 MPH
MAX SLOPE: 8%
SITE DISTANCE: 155'
CREST CURVE MIN K: 12
SAG CURVE MIN K: 26



LOCAL ROAD
TYPICAL SECTION

4
EX-D3

NOT TO SCALE

COR DESIGN PARAMETERS: LOCAL ROAD
DESIGN SPEED: 25 MPH
MAX SLOPE: 10%
SITE DISTANCE: 155'
CREST CURVE MIN K: 12
SAG CURVE MIN K: 26

EASEMENT NOTES:

ADDITIONAL EASEMENTS INCLUDING PUBLIC UTILITY EASEMENTS AND PUBLIC ACCESS EASEMENTS TO BE DETERMINED WITH FUTURE DESIGN.

IF ONE DOES NOT EXIST, A MINIMUM OF A 5-FOOT WIDE PUBLIC UTILITY EASEMENT SHALL BE DEDICATED WITHING SUBJECT PROPERTY LANDS THAT ARE ADJACENT TO EXISTING / PROPOSED RIGHT OF WAY IN ACCORDANCE WITH COR STANDARDS.

REGISTERED PROFESSIONAL ENGINEER
83,196PE
OREGON
DEC. 29, 2009
ADAM M. ERLANDSON
RENEWS 12/31/25

PRELIMINARY

REDMOND EAST GATEWAY
MASTER DEVELOPMENT PLAN
REG LLC

TYPICAL SECTIONS

KNOW LEDGE ENGINEERING, LLC
ENGINEERING | CONSULTING
901 NW Carlon Ave, Suite 3 | Bend, OR 97702
541.728.6347 | adam@klc-engineering.com

REV:	DESCRIPTION:	BY:	DATE:
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2	---	---	---
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PRELIMINARY - NOT FOR CONSTRUCTION

SCALE: 1"

DATE: 12/2/2025
PROJECT NO: 2109-01
DRAWN: ae
CHECKED: ae
SHEET NO: EX-D3

Redmond East Gateway Master Development Plan

OVERALL PUBLIC FACILITIES PLAN

Redmond, OR

December 2025

ESTIMATED SEWER FLOW FROM REDMOND EAST GATEWAY TO E ANTLER AVE:
29,040 GPD, 73 GPM PEAK FLOW
NOTE: WASTEWATER FLOW FROM ANTLER CONVERGES WITH SEWER FLOW FROM EVERGREEN AT COR MH0289 (BLACK BUTTE BLVD AND 5TH ST)

ESTIMATED SEWER FLOW FROM REDMOND EAST GATEWAY TO COR MH15B060 AT 9TH AND EVERGREEN:
193,651 GPD, 484 GPM PEAK FLOW
NOTE: WASTEWATER FLOW FROM 9TH CONVERGES WITH SEWER FLOW FROM ANTLER AT COR MH0289 (BLACK BUTTE BLVD AND 5TH ST)

NE 9TH STREET (MINOR ARTERIAL)
E ANTLER AVENUE (MAJOR COLLECTOR)
SE 15TH STREET (LOCAL INDUSTRIAL)
EVERGREEN AVE (LOCAL INDUSTRIAL)
SE 9TH STREET (MINOR ARTERIAL)
SE 11TH STREET (LOCAL STREET)
SE 13TH STREET (LOCAL STREET)
SE 14TH STREET (LOCAL INDUSTRIAL)
SE 17TH STREET (MAJOR COLLECTOR)
SE FOREST AVE (LOCAL INDUSTRIAL)
SE GLACIER AVE (LOCAL INDUSTRIAL)
VETERANS WAY (MAJOR COLLECTOR)
HIGHWAY 126

(P) CONNECTION TO SEWER MAIN / CITY OF REDMOND WASTEWATER COLLECTION SYSTEM
(E) COR SSMH
RIM ELEV = 3014.97'
8" IE IN (N) = 3003.97'
8" IE IN (E) = 3003.92'
8" IE OUT (W) = 3003.82'
FH1199
FH1200
(P) POINT OF CONNECTION TO (E) 12" COR WATER MAIN STUB/ CITY OF REDMOND WATER SYSTEM
(P) 12" COR WATER MAIN EXTENSION
(P) 8" COR SEWER MAIN EXTENSION
(E) TAXLOT LINE/ SUBJECT PROPERTY BOUNDARY
(P) POINT OF CONNECTION TO (E) 18" COR WATER MAIN STUB/ CITY OF REDMOND WATER SYSTEM
(P) 12" COR WATER MAIN
(P) 8" COR SEWER MAIN EXTENSION
FH1210
(E) COR SSMH
RIM ELEV = 3024.71'
12" IE IN (S) =3014.16'
12" IE OUT (W) = 3014.06'
(E) COR SSMH
RIM ELEV = 3025.57'
12" IE IN (S) = 3018.22'
12" IE OUT (N) = 3018.02'
FH1670
(E) 18" COR WATER MAIN
(E) 12" COR SEWER MAIN
(E) SSMH RIM ELEV = 3034.99'
I.E. (S) = 3020.43'
I.E. (N) = 3020.29'
FH1211
FH1212
(E) FH1213
(E) FH1214
(E) 18" COR WATER MAIN
(E) FH1215
(E) 18" COR WATER MAIN STUB. CONNECTION DETAILS TBD WITH FUTURE DESIGN AND PERMITTING
(E) FH1216
(E) 16" COR WATER MAIN
APPROX. SUBJECT PROPERTY BOUNDARY (R.O.W. DEDICATION TBD)
SUBJECT PROPERTY BOUNDARY

M1-1
10.35 ACRES
GPD: 10,350
PEAK FLOW: 25.9 GPM
(TO ANTLER)

M2-1
14.52 ACRES
GPD: 14,520
PEAK FLOW: 36.3 GPM
(TO ANTLER)

C4A-1
8.26 ACRES
GPD: 17,672
PEAK FLOW: 44.2 GPM
(TO 9TH)

C4A-3
7.25 ACRES
GPD: 15,506
PEAK FLOW: 38.8 GPM
(TO 9TH)

M1-2
9.06 ACRES
GPD: 9,060
PEAK FLOW: 22.6 GPM
(TO 9TH)

M2-2
16.68 ACRES
GPD: 16,680
PEAK FLOW: 41.7 GPM
(25% TO ANTLER, 75% TO 9TH)

C4A-4
8.65 ACRES
GPD: 18,515
PEAK FLOW: 46.3 GPM
(TO 9TH)

C4A-2
18.3 ACRES
GPD: 39,172
PEAK FLOW: 97.9 GPM
(TO 9TH)

M1-3
14.10 ACRES
GPD: 14,100
PEAK FLOW: 35.2 GPM
(TO 9TH)

M2-3
27.79 ACRES
GPD: 27,790
PEAK FLOW: 69.5 GPM
(TO 9TH)

M1-4
22.22 ACRES
GPD: 22,220
PEAK FLOW: 55.5 GPM
(TO 9TH)

M1-5
4.51 ACRES
GPD: 4,510
PEAK FLOW: 11.3 GPM
(TO 9TH)

M1-6
11.78 ACRES
GPD: 11,780
PEAK FLOW: 29.5 GPM
(TO 9TH)

N

0 100' 200' 400'
SCALE: 1" = 200'

EXISTING FIRE HYDRANT DATA TABLE

FH I.D.#	STATIC (PSI)	RESIDUAL (PSI)	PITOT (PSI)	FLOW (GPM)	TEST DATE
FH1199	70	62	70	1,405	8/21/2011
FH1200	70	70	61	1,318	5/26/2021
FH1210	68	68	64	1,340	8/30/2011
FH1211	64	62	56	1,250	8/30/2011
FH1212	60	52	40	1,060	9/8/2005
FH1213	59	54	42	1,090	9/8/2005
FH1214	56	54	48	1,160	9/8/2005
FH1215	59	52	47	1,250	3/13/2019
FH1670	62	57	55	1,251	1/22/2025

NOTE: EXISTING FIRE HYDRANT FLOW DATA WAS TAKEN FROM CITY OF REDMOND ONLINE MAPPING/ GIS ON 09/26/2025. HYDRANT FLOW TEST DATA MEASURED FOR SYSTEM CONDITIONS AT THE TIME OF THE TEST AND MAY NOT BE REPRESENTATIVE OF THE MINIMUM OR MAXIMUM PRESSURE AND FLOW AVAILABLE AT THE HYDRANT.

WATER AND SEWER UTILITY NOTES:

1. THE LAYOUT AND EXTENTS OF THE WATER AND SEWER MAINS SHOWN ON THIS CONCEPTUAL PLAN ARE PRELIMINARY AND SUBJECT TO CHANGE WHEN FINAL LOT CONFIGURATION AND USES ARE ESTABLISHED.
2. INDIVIDUAL DOMESTIC WATER AND SANITARY SEWER SERVICES SHALL BE PROVIDED TO EACH LOT WITH FUTURE PHASED INFRASTRUCTURE PERMITTING IN ACCORDANCE WITH CITY OF REDMOND STANDARDS AND SPECIFICATIONS.
3. PER CITY OF REDMOND DESIGN STANDARDS D.1.A: MINIMUM WATER MAIN SIZE IN COMMERCIAL ZONE SHALL BE 8-INCHES AND SHALL PROVIDE A MINIMUM FIRE FLOW OF 2,500 GPM. MINIMUM WATER MAIN SIZE IN INDUSTRIAL ZONE SHALL BE 12-INCHES AND PROVIDE A MINIMUM FIRE FLOW OF 3,500 GPM.
4. SEWER PEAK FLOW ESTIMATES ARE FOR THE COMPLETE BUILD OUT OF LOTS PROPOSED WITH THE REDMOND EAST GATEWAY MASTER DEVELOPMENT PLAN AND PER CITY OF REDMOND DESIGN STANDARDS II.C.9.2.A.IX:
   - MULTIFAMILY: 105 GAL/ DU/ DAY (DU ESTIMATED PER ACRE)
   - COMMERCIAL/INDUSTRIAL: 1000 GAL/ AC/ DAY
   - PEAK FACTOR: 3.0 FOR FLOWS LESS THAN 1 MGD (ASSUMED 20 HOUR DAY)

LEGEND (EXISTING)

- SECTION LINE
- RIGHT-OF-WAY
- RIGHT-OF-WAY CENTERLINE
- SUBJECT PROPERTY LOT LINE
- APPROX. ADJACENT TAXLOT LINE
- EASEMENT
- WATER PIPE, SIZE AS NOTED
- SEWER PIPE, SIZE AS NOTED
- STORM PIPE, SIZE AS NOTED
- OVERHEAD POWER
- UNDERGROUND FIBER OPTIC
- GAS MAIN
- COMMUNICATIONS
- CONCRETE, AS NOTED
- FOUND MONUMENT- ALUMINUM CAP
- FOUND MONUMENT- BRASS CAP
- FOUND MONUMENT- 5/8" IRON ROD
- 104 FOUND MONUMENT NUMBER
- BENCHMARK
- SANITARY SEWER MANHOLE
- STORM DRYWELL
- CURB INLET CATCH BASIN
- FIRE HYDRANT
- WATER VALVE, AS NOTED
- UTILITY POLE, AS NOTED
- MAILBOX

LEGEND (PROPOSED)

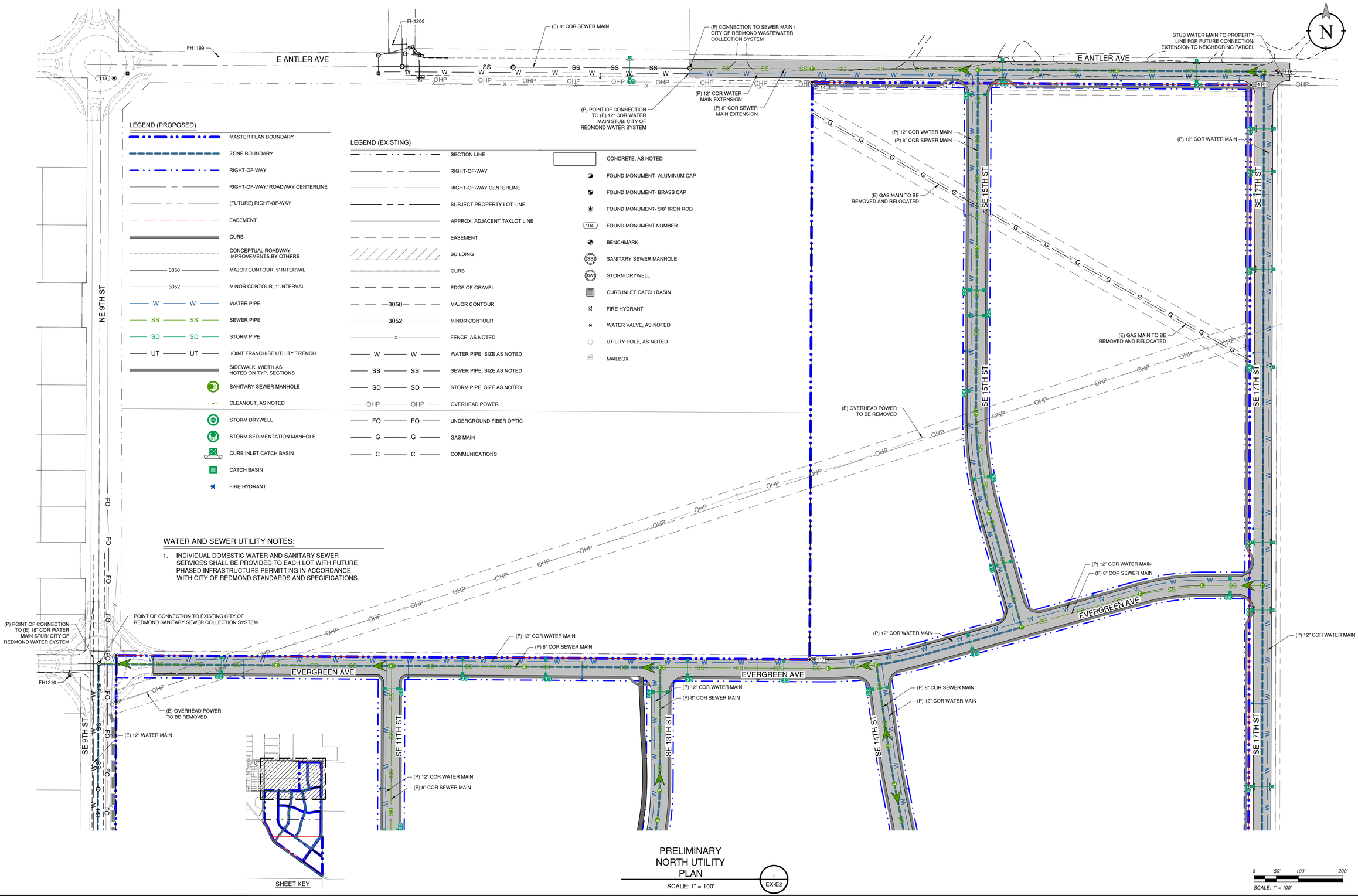
- MASTER PLAN BOUNDARY
- ZONE BOUNDARY
- RIGHT-OF-WAY
- RIGHT-OF-WAY/ ROADWAY CENTERLINE
- (FUTURE) RIGHT-OF-WAY
- EASEMENT
- CURB
- CONCEPTUAL ROADWAY IMPROVEMENTS BY OTHERS
- WATER PIPE
- SEWER PIPE
- STORM PIPE
- JOINT FRANCHISE UTILITY TRENCH
- SIDEWALK, WIDTH AS NOTED ON TYP. SECTIONS
- SANITARY SEWER MANHOLE
- CLEANOUT, AS NOTED
- STORM DRYWELL
- STORM SEDIMENTATION MANHOLE
- CURB INLET CATCH BASIN
- CATCH BASIN
- FIRE HYDRANT
- 9TH SEWER FLOW TO 9TH ST
- SEWER FLOW TO ANTLER

KNOW LEDGE ENGINEERING, LLC
901 NW Carlon Ave., Suite 3
Bend, OR 97703
541.728.6347
adam@kl-engineering.com

PLOT DATE: December 2, 2025

OVERALL PUBLIC FACILITIES PLAN — SCALE: 1" = 200' — 1 / EX-E1

SEE #####, #####, AND ##### FOR PROPOSED GRADING AND DRAINAGE IMPROVEMENTS



LEGEND (PROPOSED)

- MASTER PLAN BOUNDARY
- ZONE BOUNDARY
- RIGHT-OF-WAY
- RIGHT-OF-WAY/ ROADWAY CENTERLINE
- (FUTURE) RIGHT-OF-WAY
- EASEMENT
- CURB
- CONCEPTUAL ROADWAY IMPROVEMENTS BY OTHERS
- 3050 — MAJOR CONTOUR, 5' INTERVAL
- 3052 — MINOR CONTOUR, 1' INTERVAL
- W — WATER PIPE
- SS — SEWER PIPE
- SD — STORM PIPE
- UT — JOINT FRANCHISE UTILITY TRENCH
- SIDEWALK, WIDTH AS NOTED ON TYP. SECTIONS
- SANITARY SEWER MANHOLE
- CLEANOUT, AS NOTED
- STORM DRYWELL
- STORM SEDIMENTATION MANHOLE
- CURB INLET CATCH BASIN
- CATCH BASIN
- FIRE HYDRANT

LEGEND (EXISTING)

- SECTION LINE
- RIGHT-OF-WAY
- RIGHT-OF-WAY CENTERLINE
- SUBJECT PROPERTY LOT LINE
- APPROX. ADJACENT TAXLOT LINE
- EASEMENT
- BUILDING
- CURB
- EDGE OF GRAVEL
- 3050 — MAJOR CONTOUR
- 3052 — MINOR CONTOUR
- x — FENCE, AS NOTED
- W — WATER PIPE, SIZE AS NOTED
- SS — SEWER PIPE, SIZE AS NOTED
- SD — STORM PIPE, SIZE AS NOTED
- OHP — OVERHEAD POWER
- FO — UNDERGROUND FIBER OPTIC
- G — GAS MAIN
- C — COMMUNICATIONS
- CONCRETE, AS NOTED
- FOUND MONUMENT- ALUMINUM CAP
- FOUND MONUMENT- BRASS CAP
- FOUND MONUMENT- 5/8" IRON ROD
- 104 — FOUND MONUMENT NUMBER
- BENCHMARK
- SS — SANITARY SEWER MANHOLE
- DW — STORM DRYWELL
- CURB INLET CATCH BASIN
- FIRE HYDRANT
- WATER VALVE, AS NOTED
- UTILITY POLE, AS NOTED
- MB — MAILBOX

WATER AND SEWER UTILITY NOTES:

1. INDIVIDUAL DOMESTIC WATER AND SANITARY SEWER SERVICES SHALL BE PROVIDED TO EACH LOT WITH FUTURE PHASED INFRASTRUCTURE PERMITTING IN ACCORDANCE WITH CITY OF REDMOND STANDARDS AND SPECIFICATIONS.

SHEET KEY

PRELIMINARY
NORTH UTILITY
PLAN

SCALE: 1" = 100'

1
EX-E2

0 50' 100' 200'

SCALE: 1" = 100'

REGISTERED PROFESSIONAL ENGINEER
83,196PE
OREGON
DEC. 29, 2009
ADAM M. ERLANDSON
RENEWS 12/31/25

PRELIMINARY

REDMOND EAST GATEWAY
MASTER DEVELOPMENT PLAN

REG LLC

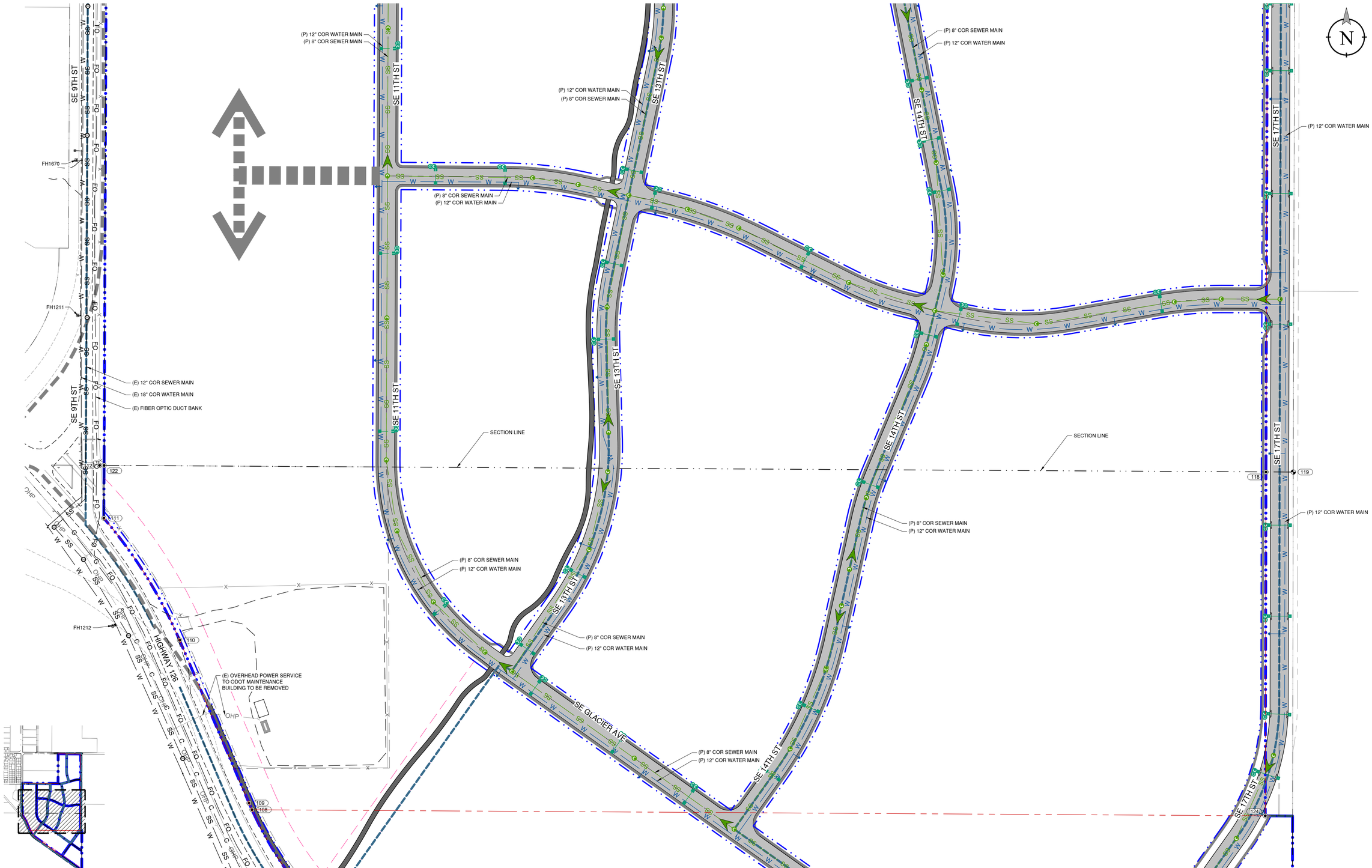
PRELIMINARY NORTH
UTILITY PLAN

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ENGINEERING | CONSULTING
901 NW Carlon Ave, Suite 3 | Bend, OR 97702
541.728.6347 | odom@klk-engineering.com

REV:	DESCRIPTION:	DATE:
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1	PRELIMINARY - NOT FOR CONSTRUCTION	--

SCALE: 1"

DATE: 12/2/2025
PROJECT NO: 2109-01
DRAWN: ae
CHECKED: ae
SHEET NO: EX-E2



PRELIMINARY
CENTRAL UTILITY
PLAN

1
EX-E3

REGISTERED PROFESSIONAL ENGINEER
83,196PE
OREGON
DEC. 29, 2009
ADAM M. ERLANDSON
RENEWS 12/31/25

PRELIMINARY

REDMOND EAST GATEWAY
MASTER DEVELOPMENT PLAN

REG LLC

PRELIMINARY CENTRAL
UTILITY PLAN

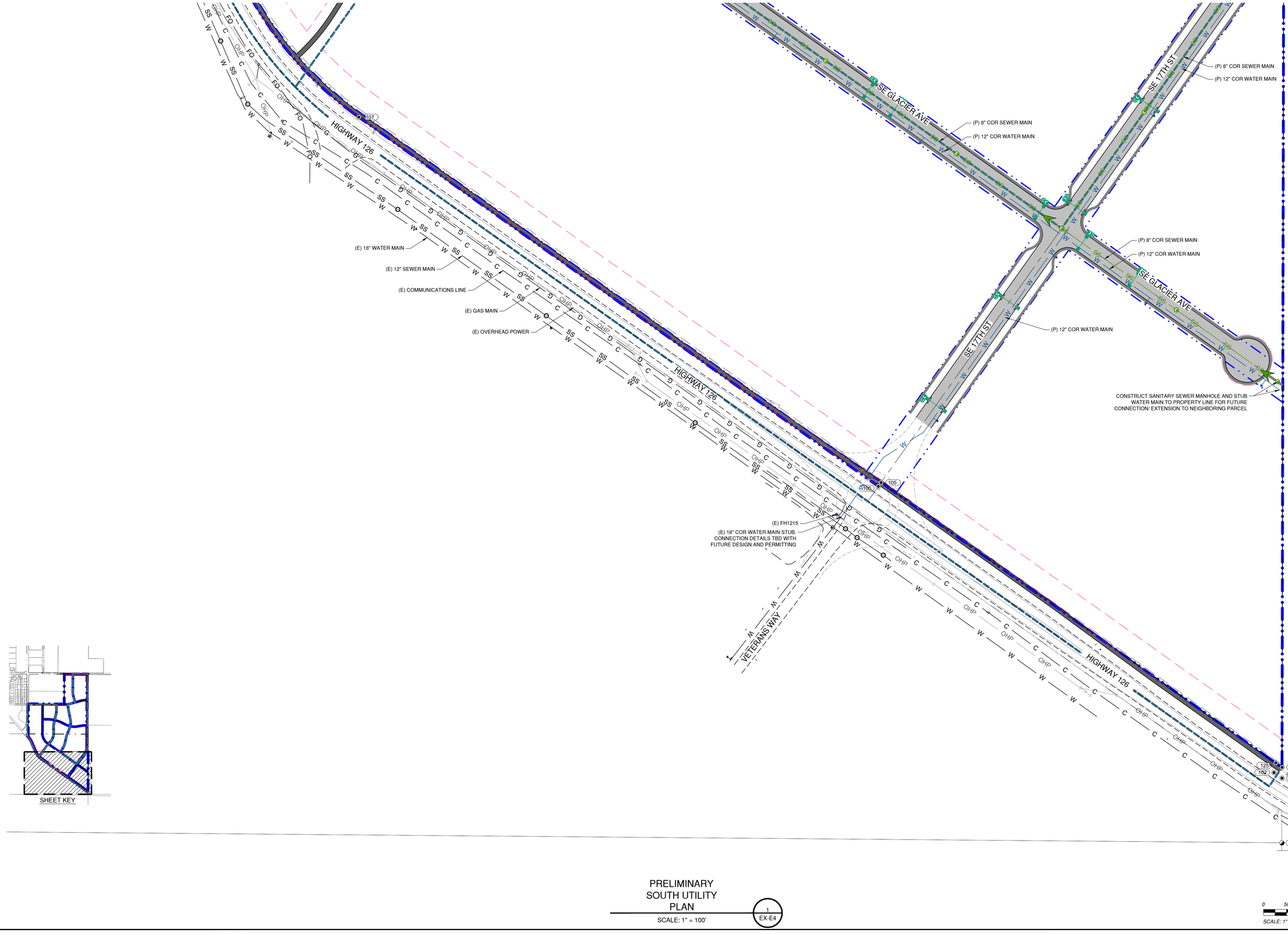
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PRELIMINARY - NOT FOR CONSTRUCTION

SCALE: 1"

DATE: 12/2/2025
PROJECT NO: 2109-01
DRAWN: ae
CHECKED: ae
SHEET NO: EX-E3



PRELIMINARY
SOUTH UTILITY
PLAN
SCALE: 1" = 100'

1
EX-E4

REGISTERED PROFESSIONAL ENGINEER
83,196PE
OREGON
DEC. 29, 2009
ADAM M. ERLANDSON
RENEWS 12/31/25

PRELIMINARY

REDMOND EAST GATEWAY
MASTER DEVELOPMENT PLAN
REG LLC

PRELIMINARY SOUTH
UTILITY PLAN

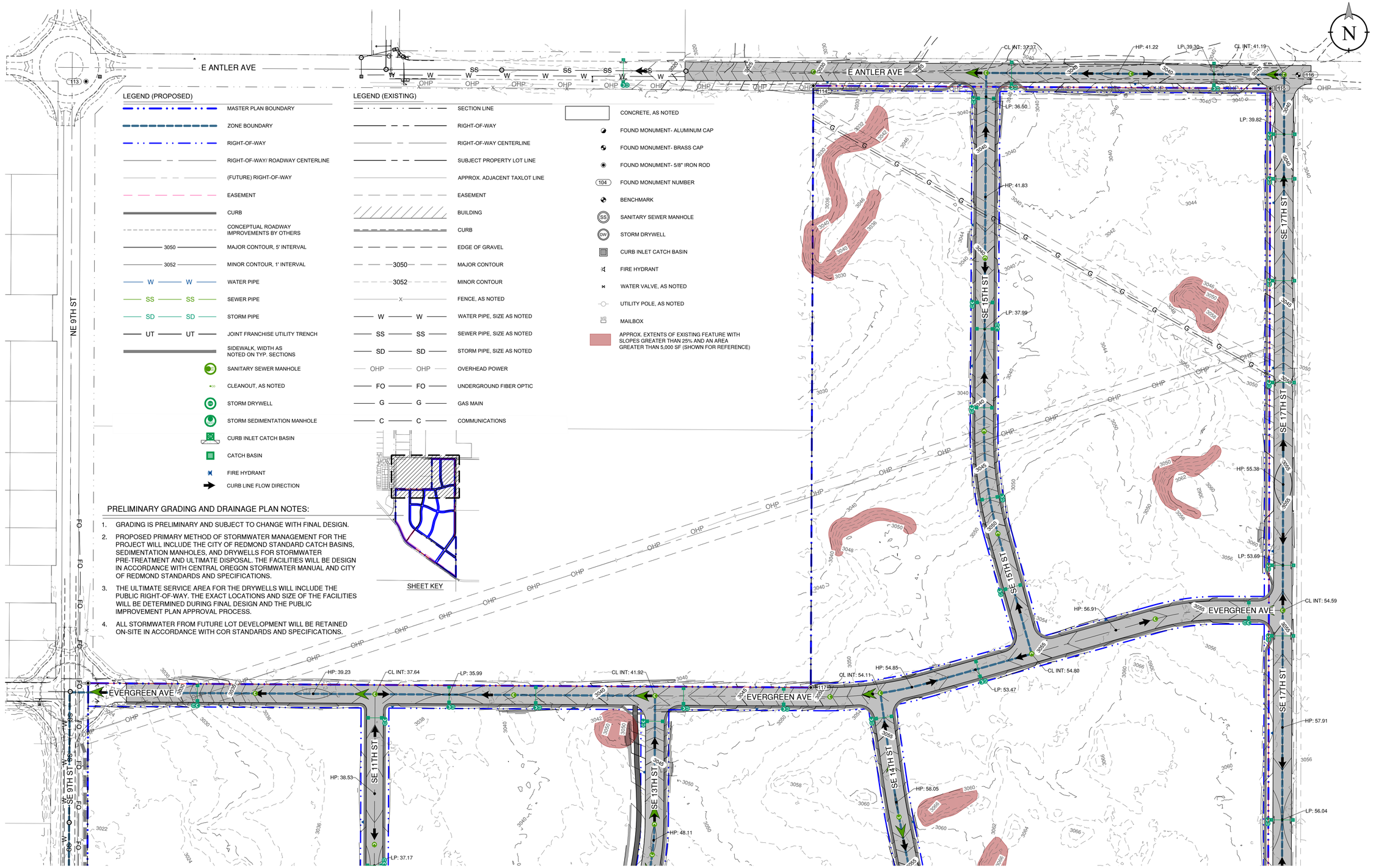
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ENGINEERING | CONSULTING
901 NW Carlon Ave, Suite 3 | Bend, OR 97702
541.728.6347 | odom@k-engineering.com

REV:	DESCRIPTION:	DATE:	BY:
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PRELIMINARY - NOT FOR CONSTRUCTION

SCALE: 1"

DATE: 12/2/2025
PROJECT NO: 2109-01
DRAWN: ae
CHECKED: ae
SHEET NO: EX-E4



PRELIMINARY GRADING AND DRAINAGE PLAN NOTES:

1. GRADING IS PRELIMINARY AND SUBJECT TO CHANGE WITH FINAL DESIGN.
2. PROPOSED PRIMARY METHOD OF STORMWATER MANAGEMENT FOR THE PROJECT WILL INCLUDE THE CITY OF REDMOND STANDARD CATCH BASINS, SEDIMENTATION MANHOLES, AND DRYWELLS FOR STORMWATER PRE-TREATMENT AND ULTIMATE DISPOSAL. THE FACILITIES WILL BE DESIGN IN ACCORDANCE WITH CENTRAL OREGON STORMWATER MANUAL AND CITY OF REDMOND STANDARDS AND SPECIFICATIONS.
3. THE ULTIMATE SERVICE AREA FOR THE DRYWELLS WILL INCLUDE THE PUBLIC RIGHT-OF-WAY. THE EXACT LOCATIONS AND SIZE OF THE FACILITIES WILL BE DETERMINED DURING FINAL DESIGN AND THE PUBLIC IMPROVEMENT PLAN APPROVAL PROCESS.
4. ALL STORMWATER FROM FUTURE LOT DEVELOPMENT WILL BE RETAINED ON-SITE IN ACCORDANCE WITH COR STANDARDS AND SPECIFICATIONS.

PRELIMINARY NORTH GRADING AND DRAINAGE PLAN

SCALE: 1" = 100'

1 EX-E5

REGISTERED PROFESSIONAL ENGINEER
83,196PE
OREGON
DEC. 29, 2009
ADAM M. ERLANDSON
RENEWS 12/31/25
PRELIMINARY

REDMOND EAST GATEWAY
MASTER DEVELOPMENT PLAN
REG LLC

PRELIMINARY NORTH GRADING AND DRAINAGE PLAN

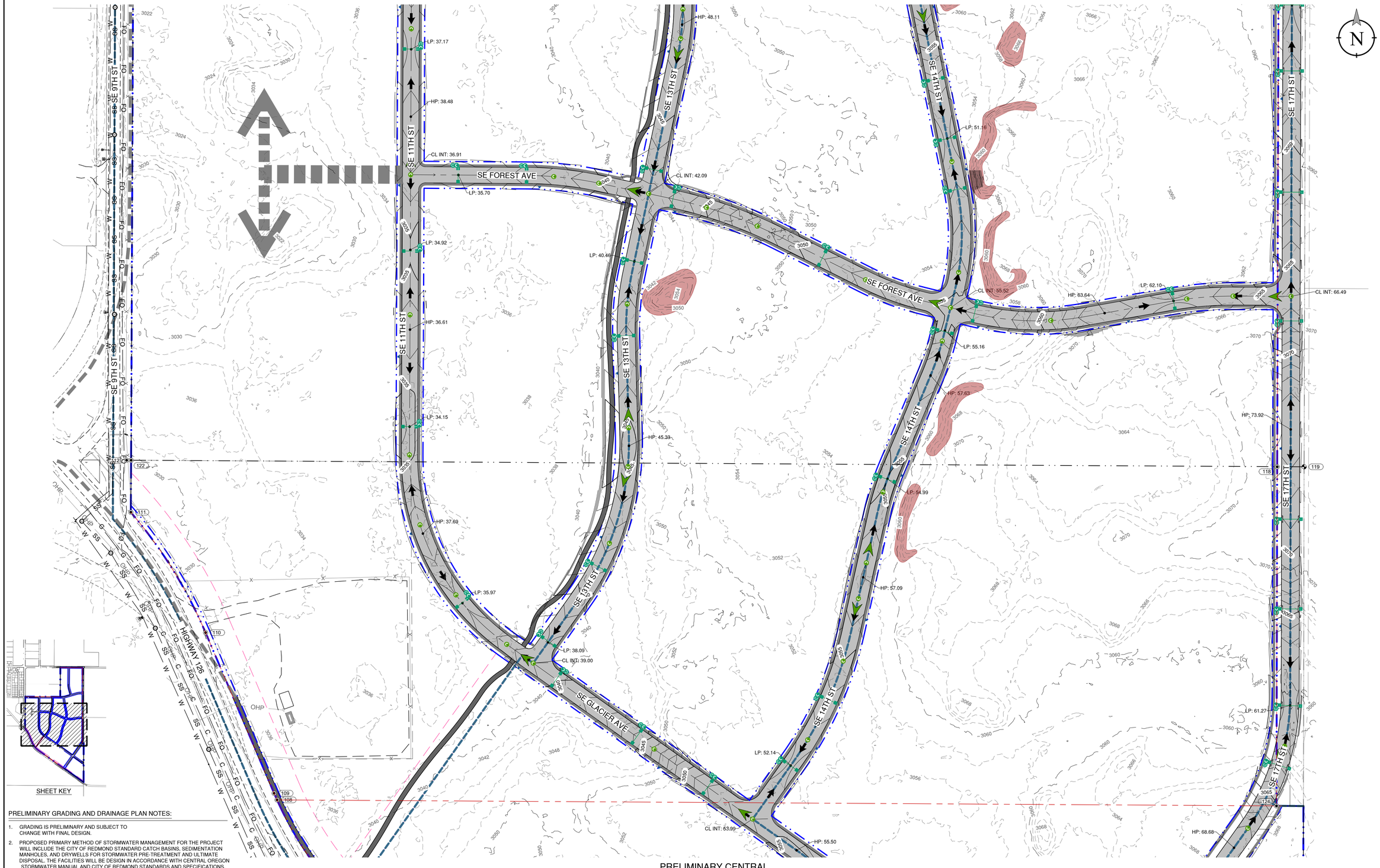
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ENGINEERING | CONSULTING
901 NW Carlon Ave, Suite 3 | Bend, OR 97702
541.728.6347 | odom@k-engineering.com

REV:	DESCRIPTION:	BY:	DATE:
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PRELIMINARY - NOT FOR CONSTRUCTION

SCALE: 1"

DATE: 12/2/2025
PROJECT NO: 2109-01
DRAWN: ae
CHECKED: ae
SHEET NO: EX-E5



SHEET KEY

PRELIMINARY GRADING AND DRAINAGE PLAN NOTES:

1. GRADING IS PRELIMINARY AND SUBJECT TO CHANGE WITH FINAL DESIGN.
2. PROPOSED PRIMARY METHOD OF STORMWATER MANAGEMENT FOR THE PROJECT WILL INCLUDE THE CITY OF REDMOND STANDARD CATCH BASINS, SEDIMENTATION MANHOLES, AND DRYWELLS FOR STORMWATER PRE-TREATMENT AND ULTIMATE DISPOSAL. THE FACILITIES WILL BE DESIGN IN ACCORDANCE WITH CENTRAL OREGON STORMWATER MANUAL AND CITY OF REDMOND STANDARDS AND SPECIFICATIONS.
3. THE ULTIMATE SERVICE AREA FOR THE DRYWELLS WILL INCLUDE THE PUBLIC RIGHT-OF-WAY. THE EXACT LOCATIONS AND SIZE OF THE FACILITIES WILL BE DETERMINED DURING FINAL DESIGN AND THE PUBLIC IMPROVEMENT PLAN APPROVAL PROCESS.
4. ALL STORMWATER FROM FUTURE LOT DEVELOPMENT WILL BE RETAINED ON-SITE IN ACCORDANCE WITH COR STANDARDS AND SPECIFICATIONS.

PRELIMINARY CENTRAL GRADING AND DRAINAGE PLAN
SCALE: 1" = 100'
1 EX-E6

REGISTERED PROFESSIONAL ENGINEER
83,196PE
OREGON
DEC. 29, 2009
ADAM M. ERLANDSON
RENEWS 12/31/25
PRELIMINARY

REDMOND EAST GATEWAY
MASTER DEVELOPMENT PLAN
REG LLC

PRELIMINARY CENTRAL
GRADING AND
DRAINAGE PLAN

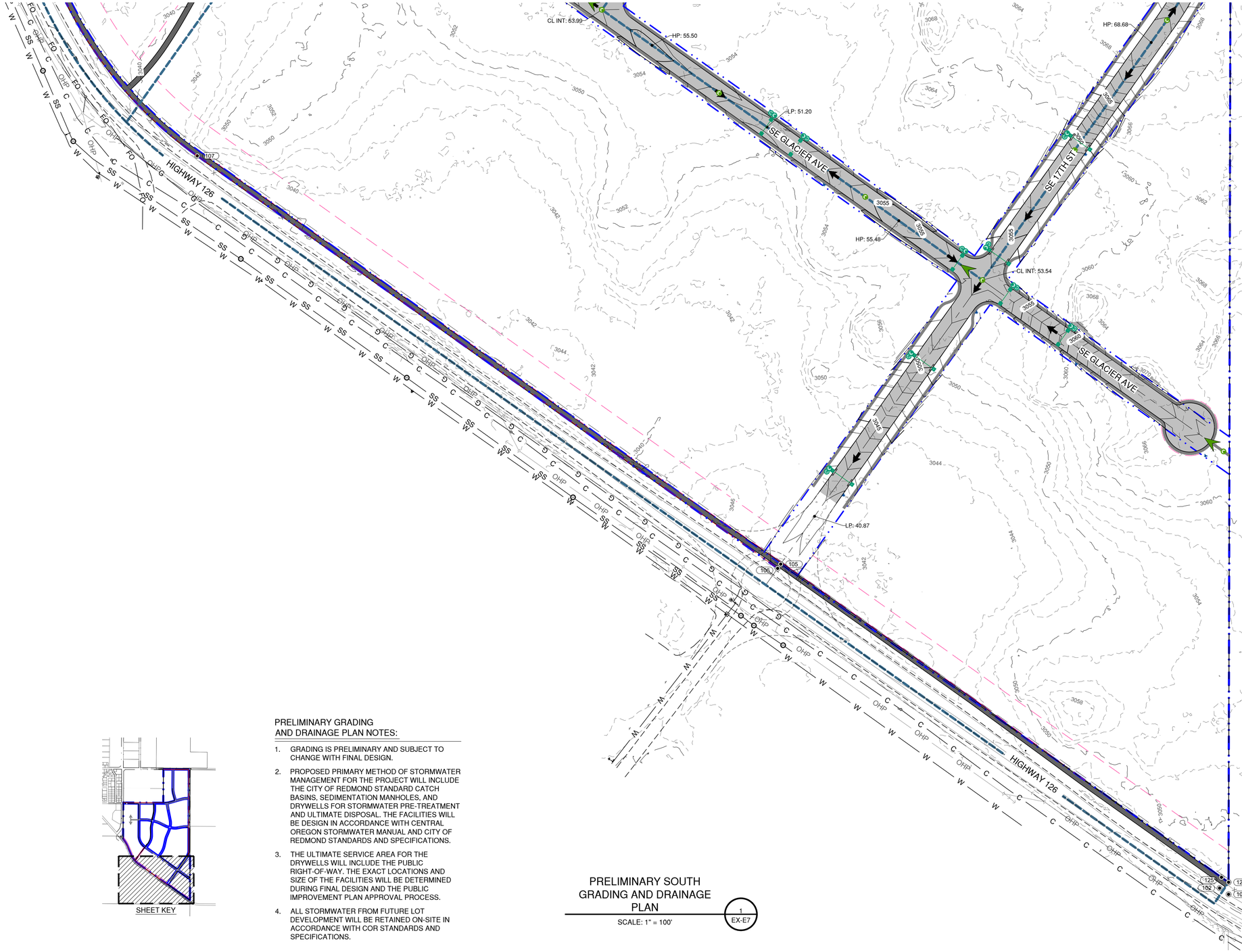
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541.728.6347 | adam@kl-engineering.com

REV:	DESCRIPTION:	BY:	DATE:
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PRELIMINARY - NOT FOR CONSTRUCTION

SCALE: 1" =

DATE: 12/2/2025
PROJECT NO: 2109-01
DRAWN: ae
CHECKED: ae
SHEET NO: EX-E6



SHEET KEY

PRELIMINARY GRADING AND DRAINAGE PLAN NOTES:

1. GRADING IS PRELIMINARY AND SUBJECT TO CHANGE WITH FINAL DESIGN.
2. PROPOSED PRIMARY METHOD OF STORMWATER MANAGEMENT FOR THE PROJECT WILL INCLUDE THE CITY OF REDMOND STANDARD CATCH BASINS, SEDIMENTATION MANHOLES, AND DRYWELLS FOR STORMWATER PRE-TREATMENT AND ULTIMATE DISPOSAL. THE FACILITIES WILL BE DESIGN IN ACCORDANCE WITH CENTRAL OREGON STORMWATER MANUAL AND CITY OF REDMOND STANDARDS AND SPECIFICATIONS.
3. THE ULTIMATE SERVICE AREA FOR THE DRYWELLS WILL INCLUDE THE PUBLIC RIGHT-OF-WAY. THE EXACT LOCATIONS AND SIZE OF THE FACILITIES WILL BE DETERMINED DURING FINAL DESIGN AND THE PUBLIC IMPROVEMENT PLAN APPROVAL PROCESS.
4. ALL STORMWATER FROM FUTURE LOT DEVELOPMENT WILL BE RETAINED ON-SITE IN ACCORDANCE WITH COR STANDARDS AND SPECIFICATIONS.

PRELIMINARY SOUTH GRADING AND DRAINAGE PLAN

1 EX-E7

SCALE: 1" = 100'

0 50' 100' 200'

SCALE: 1" = 100'

REGISTERED PROFESSIONAL ENGINEER
83,196PE
OREGON
DEC. 29, 2009
ADAM M. ERLANDSON
RENEWS 12/31/25

PRELIMINARY

REDMOND EAST GATEWAY
MASTER DEVELOPMENT PLAN

REG LLC

PRELIMINARY SOUTH GRADING AND DRAINAGE PLAN

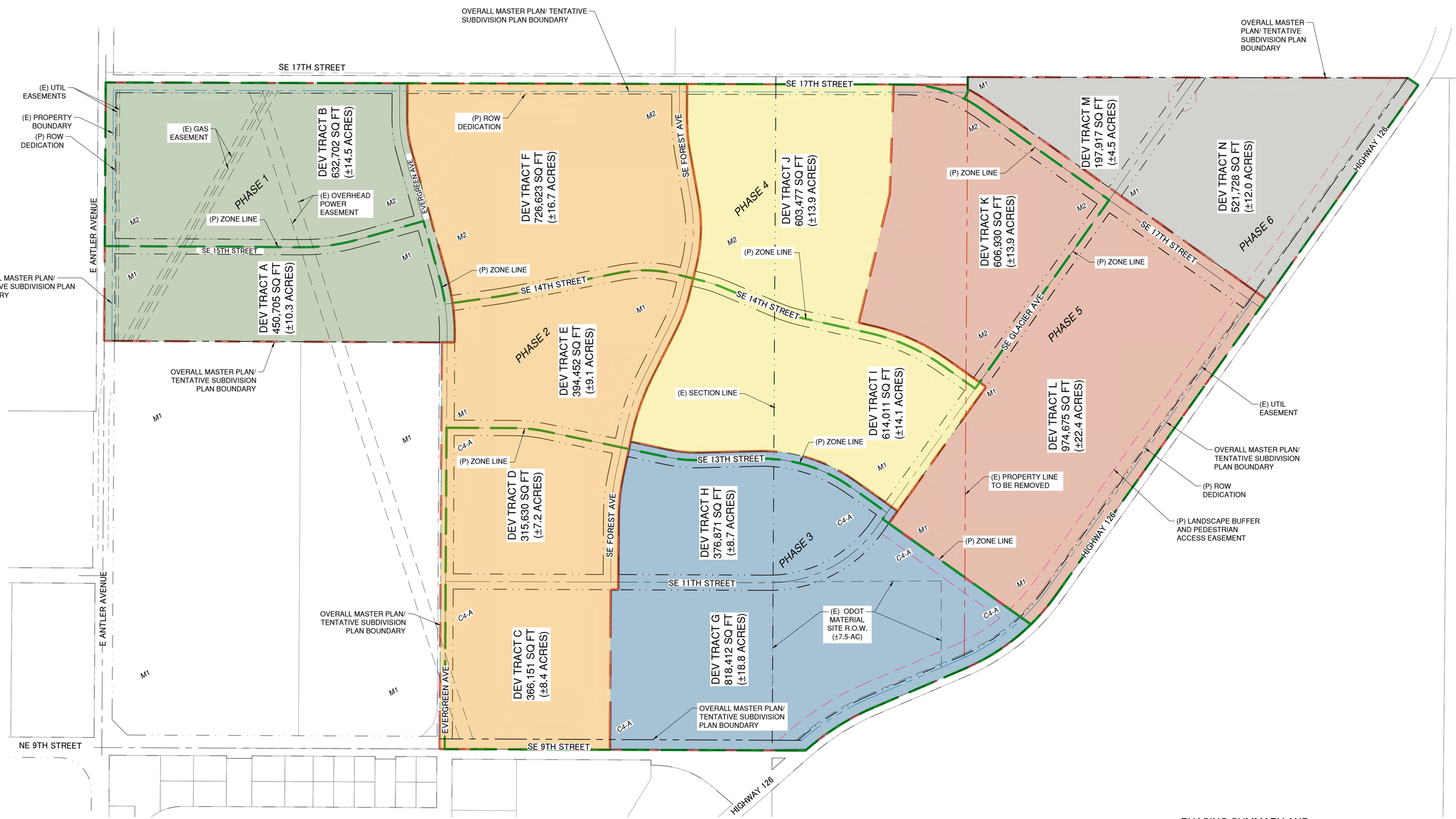
KNOW LEDGE ENGINEERING, LLC
ENGINEERING | CONSULTING
901 NW Carion Ave, Suite 3 | Bend, OR 97702
541.728.6347 | adam@klr-engineering.com

REV:	DESCRIPTION:	BY:	DATE:
3	---	---	---
2	---	---	---
1	---	---	---

PRELIMINARY - NOT FOR CONSTRUCTION

SCALE: 1"

DATE: 12/2/2025
PROJECT NO: 2109-01
DRAWN: ae
CHECKED: ae
SHEET NO: EX-E7



CONCEPTUAL PHASING PLAN OVERVIEW

SCALE: 1" = 200'

1 EX-T1

0 100' 200' 400'

PHASING SUMMARY AND ESTIMATED DEVELOPMENT TIMELINES

PHASE	DEV TRACTS	EST. FINAL PLAT RECORDING (YEAR)
PHASE 1	A AND B	2027
PHASE 2	C, D, E, AND F	2029
PHASE 3	G AND H	2031
PHASE 4	I AND J	2032
PHASE 5	K AND L	2034
PHASE 6	M AND N	2036

NOTES:

- THE GENERAL PHASING, SEQUENCING, AND DEVELOPMENT TIMELINES ARE ESTIMATED BASED ON CURRENT MARKET CONDITIONS. THE DEVELOPMENT SCHEDULE MAY BE ALTERED BY FUTURE MARKET CONDITIONS AS DETERMINED BY APPLICANT.
- IF PHASING SEQUENCE IS ALTERED BY FUTURE MARKET CONDITIONS, ALL REQUIRED CONNECTING INFRASTRUCTURE IMPROVEMENTS TO SERVE A PARTICULAR PHASE SHALL BE COORDINATED WITH, REVIEWED, AND APPROVED BY THE CITY OF REDMOND ENGINEERING DEPARTMENT WITH FUTURE INFRASTRUCTURE PERMITTING PROCESS.

REGISTERED PROFESSIONAL ENGINEER 83,196PE OREGON DEC. 29, 2009 ADAM M. ERLANDSON RENEWS 12/31/27

PRELIMINARY

REDMOND EAST GATEWAY MASTER DEVELOPMENT PLAN

REG LLC

CONCEPTUAL PHASING PLAN OVERVIEW

KNOW LEDGE ENGINEERING, LLC
ENGINEERING | CONSULTING
901 NW Colton Ave, Suite 3 | Bend, OR 97702
541.728.8347 | cdam@klE-engineering.com

REV:	DESCRIPTION:	BY:	DATE:
3	---	--	--
2	---	--	--
1	PRELIMINARY - NOT FOR CONSTRUCTION	--	--

SCALE: 1"

DATE: 3/17/2026

PROJECT NO: 2109-01

DRAWN: ae

CHECKED: ae

SHEET NO: EX-T1

ATTACHMENT B

Burden of Proof Statement
Redmond East Gateway (REG)
Master Development Plan / Comprehensive Plan Map Amendment / Zone Change

Applicant: Watson Development
Jeff Lundin
963 SW Simpson Avenue #110
Bend, OR 97702

Owner: Redmond East Gateway LLC
250 SE Timber Avenue
Redmond, OR 97756

Engineer: Know Ledge Engineering, LLC
Adam Erlandson
901 NW Carlon Avenue, Suite 3
Bend, OR 97702

Traffic Engineer: Transight Consulting, LLC
Joe Bessman
61271 Splendor Lane
Bend, OR 97702

Planning Consultant: Blackmore Planning and Development Services, LLC
Greg Blackmore
19454 Sunshine Way
Bend, OR 97702

Location: The development area contains two tax lots that are located near the eastern edge of the Redmond City Limits and Urban Growth Boundary (UGB). The two tax lots area located north of E Hwy 126, east of SE 9th Street, and south of E Antler Avenue. The northern tax lot has been assigned the address 901 E Hwy 126 and the southern tax lot has not been assigned an address. The properties are identified as Tax Lots 101 and 102 on the Deschutes County Tax Assessor's Map 15-13-15.

Request: Review of a Master Development Plan of a 204.56 acre area, along with a Comprehensive Plan Map Amendment and Zone Change. The Comprehensive Plan Map Amendment and Zone Change will add 12.5 acres of Commercial Zoned land (a decrease in the amount of Industrial Zoned Land of an equivalent amount) and it will provide a mix of Light (M-1) and Heavy (M-2) Industrial Land, instead of M-1 only.

GROSS ZONING HISTORY & COMPARISON TABLE

ZONE DESIGNATION	EASTSIDE FRAMEWORK PLAN (ESFP)	REDMOND 2040 COMP PLAN	PROPOSED ZONING
C2 - CENTRAL BUSINESS DISTRICT COMMERCIAL	26.92 - AC	0.00 - AC	0.00 - AC
C4A - LIMITED SERVICE COMMERCIAL	22.98 - AC *	41.94 - AC	50.71 - AC
M1 - LIGHT INDUSTRIAL	144.04 - AC	162.62 - AC	85.76 - AC
M2 - HEAVY INDUSTRIAL	0.00 - AC*	0.00 - AC	68.09 - AC
PUB - PUBLIC SPACE	10.62 - AC**	0.00 - AC	0.00 - AC
TOTAL:	204.56 - AC	204.56 - AC	204.56 - AC

NOTES:

* - ADDITIONAL 12.5 ACRES OF C4A ON ADJACENT PARCEL TO NE IDENTIFIED IN EASTSIDE FRAMEWORK PLAN, CURRENTLY ZONED AS M-2. ADDITIONAL 18.3 ACRES OF M-2 ON ADJACENT PARCEL TO THE NW IDENTIFIED ON EASTSIDE FRAMEWORK PLAN, CURRENTLY ZONED M-1.

** - EASTSIDE FRAMEWORK PLAN DESIGNATED PUBLIC SPACES ADJACENT TO RIGHT OF WAYS ARE NOT DELINEATED OR INCLUDED IN AREA CALCULATIONS.

The Master Planned Development is generally consistent with the current Redmond Compressive Plan map and it is forecasted to provide land that can be developed with commercial and industrial uses (allowed by M-1 and M-2 zones) and commercial and residential uses (allowed by C-4A). The Master Development Plan establishes a strategy for all public utilities and facilities needed to serve the area. Public Improvements will be completed in association with subsequent Subdivision and/or Site Plan review and approvals.

I. Background

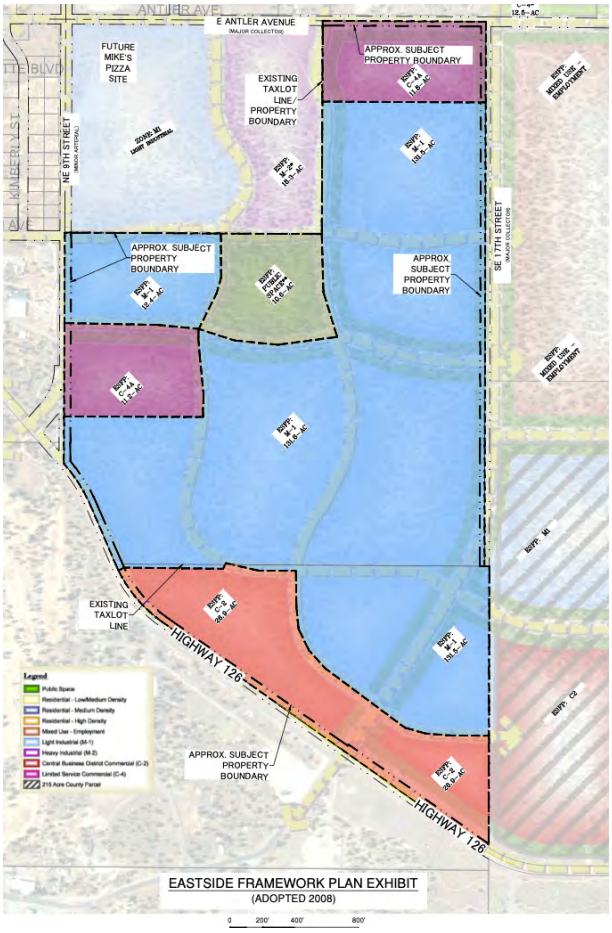
Past City planning efforts that incorporated the subject property include the 2008 Eastside Framework Plan and the most recent Comprehensive Plan update, which was adopted in December 2020, via City of Redmond Ordinance 2020-20. The Eastside Framework Plan included broad assessment of an 1,800 acre area, which the subject property was a part of. The 2008 Framework Plan assessed the 1,800 acre area, uses, service availability, topography and land use designations. Ultimately, the Eastside Framework Plan provided a vision and a framework that was intended to be resource for future development. The 2008 Framework Plan was developed to ensure consistency with the Great Neighborhood Principles; a key component desired for development in the City of Redmond.

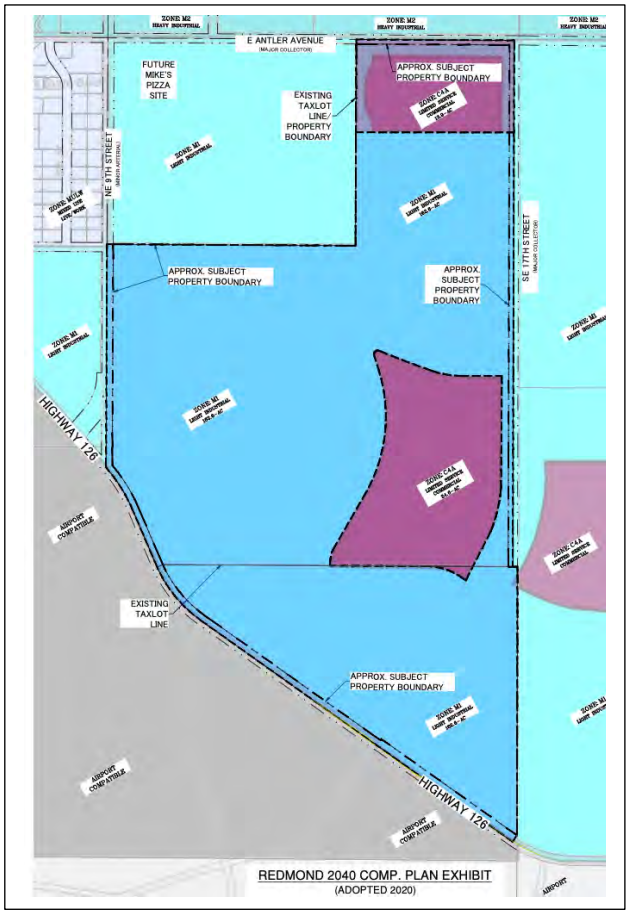
More recent than the 2008 Eastside Framework Plan, the City updated the Redmond Comprehensive Plan, via Ordinance 2020-20. The Comprehensive Plan update included an assessment of land needs throughout the City and through that process, the Comprehensive Plan update identified minor revisions to the land use designation

locations throughout the City. As it relates to land within the Eastside Framework Plan area (and the subject property), the 2020 Comprehensive Plan update resulted in the removal of the land identified as Open Space / Park (OSPR) Zone, it changed the type of Commercial Zones (swapped to C-4A from C-2), it included the relocation of some Commercial Zoned land, and it resulted in the relocation of the M-1 and M-2 Zones. Aside from the exact type and location of the Commercial and Industrial Zoned lands, the Comprehensive Plan update did not alter the vision, framework, and/or resourcefulness of the 2008 Eastside Framework Plan.

The analysis afforded throughout this narrative considers the Eastside Framework Plan as the broad outline of what is needed and desired for the subject property, whereas the most recent Comprehensive Plan designations are established for land need and availability.

Below are side-by-side images of the use designations established in the 2008 Eastside Framework Plan and the 2020 Comprehensive Plan.





As can be seen on the images, the most significant changes include:

- The removal of a strip of C-2 commercial along the southern boundary
- The removal of an Open Space area from the site
- The increase of size of the C-4A Zone

- Relocation of the C-4A Zone

Collectively, the past planning efforts established that the long-range plans for the Eastside area (including the subject property) are consistent with the:

- City Comprehensive
- Statewide Planning Goals
- Great Neighborhood Principles

The level of analysis, assessment, and planning that went into the prior planning documents was intended to ensure efficient and effective long range planning for the community. The past processes were undertaken to ensure that development occurs as desired and intended by the City, and that adequate facilities can and will be provided to the area, at time of development. Furthermore, the past efforts were intended to aid both property owners and neighbors to understand and anticipate future development on the property.

As detailed in the text of the Eastside Framework Plan (page 2):

> *Purposes of the Plan are to:*
> - ***Be a Vision*** *for the area, giving guidance to property owners and service providers.*
> - ***Be a Framework*** *for more detailed master plans that will be prepared with each development phase.*
> - ***Be a Resource*** *for future planning efforts to ensure an ample supply of land for future development.*

The current project is generally consistent with the broad elements of the Eastside Framework Plan and the land use designations of the Comprehensive Plan. While the project does include a Comprehensive Plan Map Amendment (to adjust the exact amount and industrial and commercial land), the end result in no change to the amount of Employment land in the City of Redmond; the proposal achieves an amount of Employment land that is currently in demand in the City of Redmond.

Overall, the applicant has utilized the adopted long range plans to guide the design of the proposed Redmond East Gateway (REG) Master Development Plan. As detailed in the attached plans and throughout this document, the project is based upon and consistent with the Redmond Comprehensive Plan and the Eastside Framework Plan.

II. Applicable Criteria, Standards, and Procedures:

The following documents, statutes, rules, and/or Code sections are directly or indirectly relevant or applicable to the proposal.

- The City of Redmond Urban Area 2040 Comprehensive Plan
- The City of Redmond Eastside Framework Plan

- City of Redmond Transportation System Plan
- City of Redmond Public Facility Master Plans (Water, Wastewater)
- City of Redmond Park Master Plan
- Oregon Revised Statutes (ORS) – ORS 197.250
- Oregon Administrative Rules (OAR)
  - Division 12, Transportation Planning Rule – OAR 660-012-0000
  - Division 15, Statewide Planning Goals and Guidelines – OAR 660-015-0000
- The City of Redmond Development Code, Chapter 8;
  - Section 8.165, Limited Service Commercial C-4A Zone
  - Section 8.180, Light Industrial (M-1) Zone
  - Section 8.185, Heavy Industrial (M-2) Zone
  - Section 8.190, Table C, Uses Permitted
  - Section 8.195, Table D Minimum Standards
  - Section 8.270, Master Development Plans
  - Section 8.385, Neighborhood Meeting
  - Sections 8.750 through 8.770, Amendments

III. General Facts:

1. LOCATION: The development area contains two tax lots that are located near the eastern edge of the Redmond City Limits and Urban Growth Boundary (UGB). The two tax lots area located north of E Hwy 126, east of SE 9th Street, and south of E Antler Avenue. The northern tax lot has been assigned the address 901 E Hwy 126 and the southern tax lot has not been assigned an address. The properties are identified as Tax Lots 101 and 102 on the Deschutes County Tax Assessor's Map 15-13-15.



2. ZONING AND COMPREHENSIVE PLAN DESIGNATIONS: The subject tax lots are designated C-4A and M-1 on the Redmond Comprehensive Plan and Zone Map. The properties are located within the Redmond UGB and City Limits.





3. SITE DESCRIPTION & SURROUNDING USES: The area subject to the application is 204.56 acres in size. The topography is varied with a low point of 3,024 feet in the northwest corner and has various ridges and/or high points that approach elevations of 3,070 feet. The property is developed with minor improvements in the southwest corner (an ODOT lease area), including buildings and material storage areas. Also, the site contains a natural gas main and overhead powerlines, both of which are located within easements.

The property is abutted by Hwy 126 to the south, SE 9th Street to the west, E Antler Avenue to the north, and the unimproved 17th Street right-of-way to the northeast. Transportation improvements, facilities, and utilities are situated within the Hwy 126 and E 9th Street rights-of-way.

The property is located approximately .25 mile from the rural/urban interface, it is within the Redmond UGB and City Limits. To the west, the City is in the process of completing the East Side Arterial Project, which will transform NE 9th Street into a significant transportation facility on the east side of Redmond. Redmond / Roberts Field Airport is located to the south, and a large City owned property (former golf course) is located to the southeast. The properties to the west and north (zoned M-1, M-2, and MULW) are generally undeveloped and the properties to the east are zoned M-1 and C-4 and undeveloped.

4. **PROPOSAL:** Review of a Master Development Plan of a 204.56 acre area, along with a Comprehensive Plan Map Amendment and Zone Change. The Comprehensive Plan Map Amendment and Zone Change will add 12.5 acres of Commercial Zoned land (a decrease in the amount of Industrial Zoned Land of an equivalent amount) and it will provide a mix of Light (M-1) and Heavy (M-2) Industrial Land, instead of M-1 only.

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The Master Planned Development is generally consistent with the current Redmond Compressive Plan map and it is forecasted to provide land that can be developed with commercial and industrial uses (allowed by M-1 and M-2 zones) and commercial and residential uses (allowed by C-4A). The Master Development Plan establishes a strategy for all public utilities and facilities needed to serve the area. Public Improvements will be completed in association with subsequent Subdivision and/or Site Plan review and approvals.

5. **EXHIBITS:** In addition to this burden of proof statement, the applicant submits the following exhibits in support of this proposal:

- *Application Forms & Fees*
- *Ownership Deed*
- *Title Report*
- *Traffic Impact Analysis / TPR Analysis*
- *TSAA - City of Redmond Response to the Traffic Report*
- *Master Development Plan Packet*
  - Master Development Plan
    - Existing Conditions
    - Master Development Plan
      - Uses and Densities
      - Street Layout
      - Parks/Open Space
      - Trails and Amenities
      - Potential Public Art Locations
    - Transportation System Diagram
    - Street Sections
    - Public Facilities Plans
    - Preliminary Grading and Drainage Plans
  - Draft CC&Rs

- *Comprehensive Plan / Zoning Map Packet*
  - Existing Plan Designations and Zones / Proposed Plan Designations and Zones

- *Oregon Department of Geology and Mineral Industries (DOGAMI) Maps*
  - State Owned and Public Buildings
  - Radon Potential
  - Cascadia Earthquake Hazard
  - Flood Hazard
  - Tsunami Hazard
  - Coastal Erosion Hazard
  - Volcano Hazard
  - Earthquake Hazard
  - Landslide Hazard

- *Eastside Framework Plan*

- *Economic Opportunity Analysis*

6. NEIGHBORHOOD MEETING: A Neighborhood Meeting was held on Monday, July 21, 2025 at 6:00 pm. The meeting was held at the Hayden Homes office, 250 SE Timber Avenue, Redmond, which is approximately 1 mile from the subject property. Prior to meeting, notice was sent to neighboring property owners within 750 feet and a sign was posted on the property for over 7 days. At the meeting, a sign-in sheet was provided,

project details were relayed, and the applicant heard questions and concerns from the attendee. The meeting was held in conformance with RDC 8.0385; details of the meeting are included as an Exhibit.

7. PUBLIC NOTICE: The applicant understands that the City of Redmond Planning Division will send and publish notice of the application as required by the Redmond Development Code and Statutory requirements.

IV. Compliance with The City of Redmond Development Code

COMMERCIAL USE AND INDUSTRIAL USE ZONES

Sec. 8.166. - Limited Service Commercial C-4A Zone.

> **Except as provided in Sections 8.190 and 8.195, the standards and criteria for development in the C-4A Zone shall apply to development in the C-4A Zone.**

Applicant Response: A review of Sections 8.190 and 8.195 is included below. As detailed therein, the proposal complies with the provisions of the referenced sections, to the extent applicable at this time; therefore the proposal complies with this section. This Code section does not provide any additional standards to review.

Sec. 8.180. - Light Industrial (M-1) Zone.

Sec. 8.185. - Heavy Industrial (M-2) Zone.

Applicant Response: While the Code provides these titles, these sections do not contain any standards or provisions to assess conformance with.

8.190 Table C, Uses Permitted….

Applicant Response: The referenced table identifies a large number of uses that are permitted outright, permitted with a Conditional Use Permit, and/or not permitted within the C-4A, M-1 and M-2 Zones. The current proposal is for a Comprehensive Plan Map Amendment and Zone Change, along with a Master Development Plan; the proposal will result in a conceptual plan for the large development area, however specific site uses and/or developments are not proposed or planned at this time. The Master Development Plan will allow for future Land Division and Site Plan Review (and/or any other necessary Development Permits, such as Conditional Use Permits, Variances, or other Planning Applications). The current proposal is the initial entitlement step, it plans for infrastructure needs based upon a reasonable worst case scenario of uses that are allowed by this section. While the proposed design proves that the Master Development Plan will be able to accommodate uses that are allowed by this section, no specific uses are planned, proposed, or considered at this time. Review of uses will occur with subsequent development applications.

8.195 Table D, Minimum Standards. The following minimum standards are required in each of the Commercial and Industrial zones as follows (all distances are measured in feet):…

Applicant Response: This section addresses setbacks, building height, street frontage, and lot sizes; the provisions of this table apply to site specific development. The current proposal is a high level conceptual master plan of a large development area. The current proposal does not include a subdivision and/or specific site development. The design of the Master Development Plan identifies how water, sewer and transportation systems will be extended to the development area, how open space areas will be provided, and the general theme of the area, however site specific development is not planned or proposed at this time. With the planned street design and water/sewer improvements, the Master Development Plan allows for (and does not preclude) the standards of this table to be met with future development, be it Subdivision or Site Plan Review. The proposal conforms to the provisions of this section, to the extent applicable.

MASTER DEVELOPMENT PLANS & PLANNED UNIT DEVELOPMENTS

Sec. 8.270. - Master Development Plans.

A Master Development Plan is required as a condition of annexation, or after annexation, but prior to or concurrent with rezoning from Urban Holding-10 to other City zoning districts. The specific requirements for a Master Development Plan are:

1. ***Applicability.*** **This Section applies to properties proposed for annexation or rezoning from Urban Holding-10, except that in the event that an applicant has applied for a Planned Unit Development application prior to or concurrent with rezoning from Urban Holding-10, the Master Development Plan approval criteria shall be those used for the Planned Unit Development application and the Great Neighborhood Principles.**

Applicant Response: Given that the property is located within the City Limits, annexation is not needed; therefore a Master Development Plan is not required for conformance with this section. That said, a Master Development Plan is allowed/permitted to be applied to the development area. Given that a Master Development Plan is being applied for, the provisions of this section are relevant and applicable. The proposal does not include a Planned Unit Development.

As detailed throughout this narrative, the site is situated within the Eastside Framework Plan (EFP) area, the EFP has been found to be consistent with the Great Neighborhood Principles, and the proposal is consistent with the EFP. It therefore follows that this Master Development Plan is consistent with the Great Neighborhood Principles. Furthermore, an analysis of the Great Neighborhood Principles is included below and as detailed therein, the specific Master Development Plan proposal is individually consistent with the Great Neighborhood Principles.

2. ***Purpose*. The purpose of Master Development Plan is to provide:**

Applicant Response: This section is a purpose statement and it does not contain any measurable approval criteria or development standards. Specific development standards and approval criteria have been adopted into the Redmond Development Code to implement the purpose items referenced in this section. As detailed through a review of this Chapter and the entire Redmond Development Code, the proposal complies with all applicable development standards and approval criteria that have been adopted to carry out the purpose of Master Development Plans, thus the proposal complies with this section.

A. Orderly and efficient development of the City consistent with the City of Redmond Framework Plan and adopted Area Plans.

Applicant Response: The property is detailed in the Eastside Framework Plan, but no other Area Plans. Below is an excerpt from the Eastside Framework Plan that focuses on the area of the subject property.





The Framework Plan establishes the following elements on the subject property:

- The property is planned for a mix of Commercial and Industrial uses.

- NW 17th Street traverses the property's eastern edge in a north/south orientation and it intersects with Hwy 126.
- A park type "Public Space" is identified.
- Public space is identified as traversing the property in north/south and east/west orientations.

As detailed on the Master Development Plan exhibit, the proposal includes the following features that carry out the items referenced on the Eastside Framework Plan:

- The proposal provides a mix of Commercial and Industrial land
- With the exception of a Forest Avenue connection to SE 9th Street[1], the street grid is consistent with the EFP.
- The design includes a Public Space that traverses the site in a north/south orientation.
- The design includes a Public Space that traverses the site in an east/west orientation.[2]
- Right-of-way improvements that conform to the City of Redmond Arterial Street and/or ODOT Standards (travel lanes, curbs, walkways, planter strips) are planned along SE 9th Street and Hwy 126. At time of development (Land Division and/or Site Plan as warranted), the improvements will be constructed.
- Right-of-way improvements that conform to the City of Redmond Collector Street standards (travel lanes, curbs, walkways, planter strips) are planned along SE 17th Street. At time of development (Land Division and/or Site Plan as warranted), the improvements will be constructed.
- Internal grid and non-grid streets improvements that conform to the City of Redmond Street standards (travel lanes, curbs, walkways, planter strips) are planned along the internal streets. At time of development (Land Division and/or Site Plan as warranted), the improvements will be constructed.
- Trails are planned along 13th Street and Hwy 126.
- Water is planned to be provided to and through the site in conformance with City Standards.
- Wastewater is planned to be provided to and through the site in conformance with City Standards.

There are 2 areas where the Master Plan deviates from the Eastside Framework Plan 1) no park area is planned within the Master Development Plan Area and 2) SE Forest Avenue does not extend through to connect to SE 9th Street to the east.

The reason for the park deviations is due to the fact that the Park and Open Space Zone has been removed from the site, a City recognition that parks are more appropriately located in residential and/or commercial areas (rather than industrial) area; in locations where nearby residents and/or patrons (in more compact spaces) can use and frequent the park open spaces areas. Industrial uses are typically larger sized and have fewer employees/residents on larger units of land. Access to park areas from Industrial Zoned

1 Which is not desired or allowed by the City at this time
2 Rather than internal, this is located along the southern edge of the property.

land would require greater distances of travel for fewer people and would be an inefficient use of land.

Regarding the residential uses that can occur on the C-4A Zoned land, these are likely to be higher density multi-family complexes. The Redmond Development Code requires that multi-family complexes provide 15% open space or 3,000 sf, whichever is greater (RDC 8.3035.E.9). As such, in the event that residential development occurs on the C-4A Zoned land, open space will be provided for residents.

Overall, providing park and/or open space in this area would be an inefficient use of land; parks and open spaces will be provided for residents (if dwelling are developed on the C-4A Zoned land) and/or park space could be more efficiently located near higher density uses in other parts of the City.

Regarding a SE 9th Street connection south of SE Evergreen Avenue, while this is shown on the Eastside Framework Plan, through the design and development of the SE 9th Street East Side Arterial Project, additional connection to SE 9th Street (including the connection noted on the Eastside Framework Plan) have been removed for consideration, by the City. City Staff has informed the Applicant that a connection to SE 9th Street, south of SE Evergreen Avenue will not be authorized.

As detailed above, the proposal complies with the all of the notes and the overall intent of the Eastside Framework Plan, given that planned uses and changes that have occurred (as a result of City actions) since 2008; therefore the proposal complies with this section.

B. Compatibility and/or transitions with adjacent developments and the character of the area.

Applicant Response: The property sits near the eastern edge of the Redmond UGB. As detailed on the EFP:

> Surrounding Area
> The surrounding area reflects the Redmond urban periphery. To the south is the Roberts Field Municipal Airport (Airport), the major commercial airport serving Central Oregon. West, between the extension of Kingwood Avenue and Antler Avenue, is an area being developed with industrial activities. South of Antler Avenue is vacant, although proposals have been submitted for future industrial development. North of the Kingwood Avenue extension along the west site boundary, land is generally undeveloped or low-density residential, with a small public golf course north of Maple Avenue. North of the Plan area, bordering Upas Avenue, is a residential subdivision on acreage tracts, and land to the east is undeveloped and managed by the Bureau of Land Management (BLM).

The subject property includes a 204.56 portion of the 1,800 acres of the EFP; the area that surrounds the subject property includes:

- *Southwest* – the Opportunity Foundation of Central Oregon; an underdeveloped Light Industrial property[3]
- *West* – Undeveloped land in the EFP[4]
- *South* – Hwy 126 and City of Redmond Owned property. This property used to be a golf course, it is currently unused. Redmond / Roberts Field Airport is located further south
- *East* - vacant lands in the EFP
- *North* - vacant lands in the EFP
- *Northeast* - vacant lands in the EFP

As detailed on the Master Development Plan Exhibit, the proposal includes the following features that carry out the items referenced on the Eastside Framework Plan:

- The proposal provides a mix of Commercial and Industrial land.
- With the exception of a Forest Avenue connection to SE 9th Street[5], the street grid is consistent with the EFP.
- The design includes a Public Space that traverses the site in a north/south orientation.
- The design includes a Public Space that traverses the site in an east/west orientation[6].
- Right-of-way improvements that conform to the City of Redmond Arterial Street and/or ODOT Standards (travel lanes, curbs, walkways, planter strips) are planned along SE 9th Street and Hwy 126. At time of development (Land Division and/or Site Plan as warranted), the improvements will be constructed.
- Right-of-way improvements that conform to the City of Redmond Collector Street standards (travel lanes, curbs, walkways, planter strips) are planned along SE 17th Street. At time of development (Land Division and/or Site Plan as warranted), the improvements will be constructed.
- Internal grid and non-grid streets improvements that conform to the City of Redmond Street standards (travel lanes, curbs, walkways, planter strips) are planned along the internal streets. At time of development (Land Division and/or Site Plan as warranted), the improvements will be constructed.
- Trails are planned along 13th Street and Hwy 126.
- Water is planned to be provided to and through the site in conformance with City Standards.
- Wastewater is planned to be provided to and through the site in conformance with City Standards.

Overall the design is generally consistent with the Eastside Framework Plan, and the zone locations of the Comprehensive Plan; including use types, intensity of development, street locations and design, public amenities, and overall character. Therefore, the proposal will provide compatibility with the surrounding area, and it achieve a transition to the

[3] The Heart of Oregon was recent granted approval of a central campus in this area.
[4] Site Plan has been approved for Mike's Pizza
5 Which is not allowed or desired by the City at this time
6 Rather than internal, this is located along the southern edge of the property.

surrounding aera that is similar to what has previously been envisioned by the City, through extensive planning efforts. The proposal is consistent with this provision.

C A complementary mix of uses and activities.

Applicant Response: The property is located in an area of Redmond that has been described on the Eastside Framework Plan and the Comprehensive Plan. Through the establishment of the Eastside Framework Plan, Comprehensive Plan and City Public Facilities Plans, uses, utilities, facilities, and amenities were studied, and desired uses for the area were established (through comprehensive public planning processes). Through the previously conducted long-range planning efforts, the items detailed on the EFP and Comprehensive Plan have been established as sufficiently balancing community needs, being complementary to City development, and being desired by the City. The proposal does not change uses that have previously been determined to be desired and allowed (by the City) through the EFP area.

As detailed above and noted on the Plan Set, while exact uses are not proposed (or reviewed) at this time, development assumptions have been provided, the locations of the planned use areas (zones) are noted, and utilities, facilities and amenities are shown to be consistent with Eastside Framework Plan and the Comprehensive Plan. Furthermore, the City has found that the EFP is consistent with the Great Neighborhood Principles and this Master Development Plan proposal is consistent with the EFP. Therefore, if follows that the proposed Master Development Plan is also consistent with the Great Neighborhood Principles, it is integrated into the broader community, and it provides for the uses and activities that were contemplated with all prior planning efforts. Additionally, the Great Neighborhood Principles are addressed below and as detailed therein, the project is consistent with all of the applicable principles on its own. Given the proposals compliance with the Eastside Framework Plan, the Comprehensive Plan, and the Great Neighborhood Principles, the proposal conforms to this section.

D. An interconnected transportation network – streets, bicycle routes, and pedestrian trails – within the master plan area and to existing and planned City streets, routes and trails.

Applicant Response: Documents that have been adopted by the City, which assist with assessing compliance with this provision include the City of Redmond Transportation System Plan Map, the Eastside Framework Plan, City of Redmond Standards and Specifications, and the Development Code (including required street spacing and design standards). The City Transportation System Plan Map identifies Hwy 126 as an ODOT facility, SE 9th Street as a “Minor Arterial”, Antler Avenue as a “Major Collector”, and SE 17th Street as a “Proposed Major Collector”. City documents detail where streets, trails, sidewalks and bike lanes are required, along with dimensional requirements for the differing street types. The Eastside Framework Plan shows a general street grid, but it does not include specific street classifications. Additionally, the Eastside Framework Plan identifies “Public Space” corridors.

As depicted on the Master Development Plan Exhibit, the Master Development Plan provides for all transportation elements that are identified on the TSP, and the majority of the features of the Eastside Framework Plan, including a north/south multi-use path (along SE 13th Street) and an east/west multi-use path (along Highway 126)[7]. The one deviation between the planned street grid and the street grid that is noted on the EFP is the connection of Forest Avenue to SE 9th Street. The reason for this deviation is that, as a result of the City's SE 9th Street Eastside Arterial Project, connections to SE 9th Street are intended to be limited; the City will not authorize the connection that was noted on the Eastside Framework Plan. The current proposal plans for improvements along Hwy 126 in accordance with ODOT requirements, full Arterial Street improvements along SE 9th Street, and Collector Street Improvements along SE Antler Avenue and SE 17th Street. Furthermore, the proposed project plans for a well-connected grid of local streets, and trails, that are generally consistent with those described on the Eastside Framework Plan.

In addition to the features depicted on the long term plans (EFP and TSP), the Master Development Plan includes a mix of internal streets, bicycle routes, sidewalks, and trails that conform the City of Redmond spacing and design standards. The transportation system connects to Hwy 126 at 2 points (existing SE 9th Street and the planned SE 17th Street). Connections to SE 9th Street (to the west) are planned at SE Evergreen Avenue and SE Antler Avenue. Two new connections are planned to E Antler Avenue to the north (SE 15th Street and SE 17th Street), and 4 connections are planned to SE 17th Street to the east (E Antler Avenue, SE Evergreen Avenue, SE Forest Avenue, and SE Glacier Avenue). The widths, locations, and designs depicted on the Master Development Plan are consistent with City of Redmond design standards for local, collector, and arterial streets. Furthermore, bicycle routes are proposed on the higher order streets, and sidewalks are proposed along all local street rights-of way, in conformance with City street design standards. As designed, each of the transportation components of the Master Development Plan connect to a broader system, which connect to the remainder of the City as prescribed in the EFP, thus in conformance with this standard.

E. A range of housing choices for areas planned to have residential components.

Applicant Response: The area does not have any residential designated land, thus is not "planned" by the City for residential components; therefore this section is not applicable. While not applicable, it is noted that residential uses (primarily higher density residential uses) are permitted in the C-4A zone and it is anticipated that some of the C-4A land will ultimately be developed with residential uses that are permitted within that zone.

F. A range of open spaces and recreation facilities, as needed to facilitate the Framework Plan and an adopted Area Plan.

Applicant Response: The Eastside Framework Plan included a rectangular area that appears to have been a park; and area that was previously zoned OSPR. With the 2020 Comprehensive Plan Update, the City removed the OSPR Zone from the subject property.

7 Relocated from a more central location.

Aside from the rectangular open space element, the Eastside Framework Plan identifies linear Public Spaces, that traverse the subject property in a north/south orientation and in an east/west orientation.

Regarding a park/open space on the property, the reason that a park is not planned as part of this Master Development Plan is due to the fact that parks are more appropriately located in residential and/or commercial areas (rather than primarily industrial) areas; in locations near to residents and/or patrons (in more compact spaces) who can use the park / open spaces areas. Industrial uses are typically larger size and have fewer employees on larger units of land. Access to park areas from Industrial Zoned land would require greater distances of travel for fewer people and would be an inefficient use of land.

Regarding the residential uses that can potentially occur on the C-4A Zoned land, these residential uses are likely to be higher density multi-family complexes. The Redmond Development Code requires that multi-family complexes provide for 15% open space or 3,000 sf, whichever is greater (RDC 8.3035.E.9). As such, open space will be provided for residents in the area, should they be developed.

Overall, providing park and/or open space in this area would be an inefficient use of land in this Master Development Plan; parks and open spaces will be provided for residents and/or more efficiently located (near higher density uses) in other parts of the City.

As detailed on the Plan Set, the proposed Master Development Plan includes both north/south and east/west linear Public Spaces that will be 50 feet wide and contain multi-use paths. The north/south space will run along SE 13th Street and east/west space has been relocated to the southern portion of the property, it will run along Hwy 126. These open spaces and multi-use trails are depicted on the plans and noted in the public improvement cross sections.

For the reasons noted above, the design conforms to this provision.

G. Public and semi-public facilities and services.

Applicant Response: All public facilities and services that are needed to serve the planned development are proposed to be extended to and through the site at time of development; planned improvements include water, sewer, storm water, and semi-public facilities. Improvements that are depicted on the Master Development Plan include the following:

Sewer – As detailed on the Master Development Plan – Utility Plan, a 12-inch sewer main exists in SE 9th Street immediately west of the property, an 8-inch main is (or will be) located within E Antler Avenue just west of the subject property, and a 12-inch sewer main is located to the south, within a portion of the Hwy 126 right-of-way. The existing sewer system provides a gravity system at the edges of the subject property, which connects to a broader system that extends to the City's Wastewater Treatment Facility (consistent with

the City of Redmond Public Facility Plan). As detailed on the Preliminary Utility Plan for this Master Development Plan, sewer mains are planned to be extended in new rights-of-way, throughout the entirety of the Master Development Plan Area. The majority of the site will drain to the west, where an estimated 193,651 GPD are forecast to flow through MH15B060. In addition to the western flow, the northeast portion of the site will flow to the north, where an 8-inch main will be extended along the property frontage and extended to the west. At the northern connection point, the area is forecast to generate 29,040 GPD. Within the area of the Master Development Plan, sewer mains are planned to extend throughout the site, providing the opportunity for further extensions in all directions. Regarding service laterals, exact locations are not know at this time, however, with the proposed design, it is clear that sewer laterals can be extended from the planned mains in accordance with Code Standards. Sewer mains and laterals will be extended in association with future Subdivision(s) and/or Site Plan development.

Overall, the entirety of the site will be able to be served with gravity sewer mains. The wastewater needs of the area have been planned for in the City's Wastewater – Public Facilities Plan (PFP), the current project is consistent with the assumed density for the area (in the PFP), and future development will result in substantial System Development Charge contributions (which fund prioritized improvements to the City system). By extending sewer mains and laterals consistent with the City of Redmond adopted design standards (at time of Land Division and/or Site Plan) and by making all required SDC contributions (at time of Building Permit issuance), the proposed Master Development Plan area can and will be adequately served by the existing and planned system.

Water – As detailed on the Master Development Plan – Utility Plan, an 18-inch water main is located in SE 9th Street immediately west of the property, a 12-inch main is located within E Antler Avenue to the west of the subject property, and an 18-inch water main is located within the Hwy 126 right-of-way. The existing system has a flow rates of 1,060 – 1405 GPM surrounding the subject property. As further detailed on the Public Facilities Plans for this Master Development Plan, the applicant plans to extend a 12-inch main system throughout the Master Development Plan area. Water mains are proposed to be extended throughout the site and will extend in such a manner so as to be available to neighboring properties ("to and through" the property). Regarding service laterals, while exact locations are not know at this time, they can and will be established with site development. As detailed on the plans, laterals will be able to be extended to serve each and every lot, with future Subdivision and/or Site Plan development.

Overall, the water needs of the area have been planned for in the City's Water – Public Facilities Plan (PFP), the current project is consistent with the assumed development intensity for the area, and development on the property will result in substantial System Development Charge contributions (which fund prioritized improvements to the City system). By extending water mains and laterals consistent with the City of Redmond adopted design standards (at time of land division) and by making all required SDC contributions (at time of Building Permit issuance), the proposed development can be adequately served by the existing and planned system.

Stormwater - The area is sufficiently sized to accommodate a mix of private lots and public rights-of-way. In accordance with City Standards, it is anticipated that site development will be required to maintain storm water in accordance with all applicable City of Redmond requirements and all streets have been designed to conform to City requirements, ensuring that public storm water is sufficiently managed and maintained.

Semi Public – The applicant has coordinated with semi-public utility providers and has initiated a plan to extend services throughout the site. In association with future Land Divisions and Site Plans, development will be required to finalize the plans and provide any necessary will-serve letter documentation. The initial steps, in addition to standard development requirements, will ensure all required semi-public utilities are sufficiently extended to the site, prior to development.

The Public Facility Plans for this Master Development Plan (including the facility extensions noted thereupon) were proposed after extensive consultation with the City of Redmond Public Works Department. All extensions are proposed to be in accordance with City Standards at time of development. Semi-Public service extensions are proposed in accordance with utility provider specification and are planned to be located within rights-of-way and/or utility easements.

H. Preservation of historic buildings, scenic views, and natural resources to the greatest extent possible.

Applicant Response: The property does not contain any historic buildings.

Regarding views, the EFP specifies the following (page 9):

> Scenic Views. The general level nature of the site provides potential panoramic views from the low-lying rock features that extend diagonally across the site. Additionally, the major street system, augmented by the open space network, allows distant views of Smith Rock to the north and Powell Butte to the east. Within the site, incorporation of rock features into open space calls attention to this nearby natural feature, giving local identity.

The subject property does not contain any adopted view corridors or view restriction areas. As detailed on the Plan Set, the proposed Master Development Plan design extends 3 internal streets in an east/west orientation, to the edges of the property. These street connections will provide view corridors throughout the property, consistent with the previously described Framework Plan and with this provision.

Regarding natural resources, the property does not include any city, state or federally protected resources. The area does contain areas of topographic change, rock outcroppings, trees, and vegetation. The currently proposed Master Development Plan will not impact any of these features. The current plan is high level and conceptual; it plans for the locations of rights-of-way, water/sewer improvements, open spaces and walkways, however none of these improvements will occur until site development (Subdivision and/or Site Plan development). How trees will be preserved or removed and how site specific development planned amongst the existing topography, will be

determined and reviewed with future development (Subdivision or Site Plan review). The currently proposed Master Development Plan does not forego the opportunity for the preservation of views and/or natural resources in any way and the site does not contain any other natural resources; therefore the proposal conforms to the standards of this section.

I. Transitions or buffers between urban development and rural areas.

Applicant Response: All surrounding properties are situated within the Redmond Urban Growth Boundary and City Limits. The site is located over ¼ mile from the nearest rural area (EFU zoned lands to the east); therefore additional transitions and/or buffers do not need to be provided.

J. Implementation of Redmond's Comprehensive Plan, including adopted Area Plans and the Great Neighborhood Planning Principles described in 3(C)(13) below.

Applicant Response: The City Development Code has been adopted to implement the Comprehensive Plan. As detailed throughout this narrative, the Master Development Plan is consistent with the Eastside Framework Plan and it conforms to all standards and criteria of the Redmond Development Code, including the Great Neighborhood Principles. Therefore, the proposed Master Development Plan conforms to this approval criterion.

In addition to a Master Development Plan, the proposal includes a Comprehensive Plan Map Amendment and a Zone Change. As required for the Comprehensive Plan Map Amendment and Zone Change, a complete review of the applicable sections of the Comprehensive Plan is included below (Sections 8.0750-8.0770 below). As detailed in that section, the Comprehensive Plan Map Amendment and a Zone Change portion of the proposal conforms to all applicable elements of the Comprehensive Plan, thus also conforms to this reference provision.

3. *Procedures for Review*.

A. General. Master Development Plans (MDP or PMDP) shall be approved through a quasi-judicial review process. Application procedures and related fees for approval may be streamlined in order to promote timely development of urban planning for land zoned UH-10. The Community Development Director, or designee, shall inform the applicant during the mandatory pre-application stage if the proposed MDP area includes the necessary contiguous properties. The determination for the proposed plan area shall be based on utilizing the following factors:

Applicant Response: The applicant held a Pre-Development meeting with the City on January 31, 2023, along with many follow-up meetings prior to submittal. The applicant understands that the Master Development Plan will be reviewed via the Quasi-judicial review procedure and by attending the pre-application meetings, the applicant has a clear

understanding how the plan interacts with other nearby properties; additional factors are addressed below.

1. **Whether there are properties that abut or are surrounded by the plan boundary that would reasonably fit within the zoning concept for the area plan;**
2. **Whether the extension of public services and infrastructure would be enhanced by the inclusion of abutting properties;**
3. **Whether the total acreage of abutting or enclave properties is less than the acreage in the proposed plan area; and**
4. **There is a community interest that would be served by including additional properties in the plan area.**

Applicant Response: The subject property is situated within the Eastside Framework Plan area, it is individually owned and clearly established; the property is bound by Hwy 126 to the south (an ODOT facility), SE 9th Street to the west (a Arterial Road), E Antler Avenue to the north (a Collector Road), and SE 17th Street to the east (a Collector road). The abutting rights-of-way provide a clear and concise area of demarcation, where a unified Master Development Plan can be provided amongst the broader EFP. Within the rights-of-way, water, sewer, transportation and other quasi-public utilities can be provided and extended in a manner that adequately accommodates surrounding properties. Furthermore, the property is large and the design provides adequate size for a uniform development theme and concept, along with a practical and reasonable amount and type of public amenities.

Within this area noted above (the area that is bound by the noted right-of-way), there is one other property that is separately owned (to the northwest / 1513150000100). At 46 acres, that property is relatively large, it abuts SE 9th Street to the west and Antler Avenue to the north. Furthermore, conceptual plans have been established for this site and a Site Plan has been approved for Wild Mike's Pizza. Given its size, location, proximity of water and sewer infrastructure and the fact that it has an approved Site Plan, including the neighboring property into the current Master Development Plan is not needed, as it can be individually developed without master planning. Other surrounding properties in the area are within Eastside Framework Plan, which itself provides adequate guidance, such that inclusion in this Master Development Plan are not necessary.

The proposal provides a conceptual development plan and documents how and where facility extensions can and will occur. The Public Facilities Plan of this Master Development Plan document that the surrounding area can be easily incorporated into the planned grid, (water/sewer/transportation) with development. Given that the Master Development Plan area is sufficiently sized, it has distinct boarders, it is individually owned, and it sufficiently plans for the extension of facilities to surrounding properties, the proposal conforms to the provisions of this section. The incorporation of additional lands into this Master Development Plan area is not necessary.

B. ***Review and approval criteria for Master Development Plans (MPD) or Partial Master Development Plans (PMDP).***

1. ***General*. In the review of any application for a Development Plan, the Planning Commission and City Council, if required, shall consider the following:**

Applicant Response: The Comprehensive Plan identifies a mix of C-4A and M-1 designated properties. The proposal adds M-2, relocates, and slightly modifies the amount of each of these zones, as follows:

GROSS ZONING HISTORY & COMPARISON TABLE

ZONE DESIGNATION	EASTSIDE FRAMEWORK PLAN (ESFP)	REDMOND 2040 COMP PLAN	PROPOSED ZONING
C2 - CENTRAL BUSINESS DISTRICT COMMERCIAL	26.92 - AC	0.00 - AC	0.00 - AC
C4A - LIMITED SERVICE COMMERCIAL	22.98 - AC *	41.94 - AC	50.71 - AC
M1 - LIGHT INDUSTRIAL	144.04 - AC	162.62 - AC	85.76 - AC
M2 - HEAVY INDUSTRIAL	0.00 - AC*	0.00 - AC	68.09 - AC
PUB - PUBLIC SPACE	10.62 - AC**	0.00 - AC	0.00 - AC
TOTAL:	204.56 - AC	204.56 - AC	204.56 - AC

NOTES:

* - ADDITIONAL 12.5 ACRES OF C4A ON ADJACENT PARCEL TO NE IDENTIFIED IN EASTSIDE FRAMEWORK PLAN, CURRENTLY ZONED AS M-2. ADDITIONAL 18.3 ACRES OF M-2 ON ADJACENT PARCEL TO THE NW IDENTIFIED ON EASTSIDE FRAMEWORK PLAN, CURRENTLY ZONED M-1.

** - EASTSIDE FRAMEWORK PLAN DESIGNATED PUBLIC SPACES ADJACENT TO RIGHT OF WAYS ARE NOT DELINEATED OR INCLUDED IN AREA CALCULATIONS.

The proposal maintains a similar acreage of Commercial and Industrial lands and it maintains the same amount of overall Employment land for the City. Also, the revised locations of some of the zones are similar to the Comprehensive Plan and the Eastside Framework Plan; the minor adjustments allow for greater diversity of Industrial uses and will allow for more efficient development amongst the current economic climate. The applicant anticipates that the proposal will be reviewed by both the Planning Commission and the City Council.

a. Whether the proposed Plan is generally consistent with the Framework Plan, adopted Area Plan, and Comprehensive Plan in terms of land use, density, transportation systems and networks, adequacy of infrastructure and open space.

Applicant Response: As noted throughout this narrative, the property is located within the Eastside Framework Plan area (2008), and the land use districts identified in the Eastside Framework Plan have been revised in the most recent Comprehensive Plan update (2020). As such, it is understood that the Framework Plan establishes desired level of development, density, transportation systems, networks, adequacy of infrastructure and open space, whereas the desired land uses are established in the more recently updated Comprehensive Plan.

The Comprehensive Plan established C-4A and M-1 designations on the property and as detailed on the Plan Set, there is only a 12.5 acre deviation in the amount of each Commercial and Industrial lands; the proposal increases the amount of Commercial lands and increases the diversity of allowed uses in the Industrial areas. Furthermore, the location of the various designations have been determined by the developer to be efficient, similar to the current comprehensive plan locations, and can accommodate the current market environment (based upon private analysis). As such, the proposed Master Development Plan has use designation areas that are generally consistent with the Eastside Framework Plan and the Comprehensive Plan.

Regarding, level of development, density, transportation systems, networks, adequacy of infrastructure and open space, below is an excerpt from the Eastside Framework Plan that focuses on the area of the subject property.





The Framework Plan establishes the following elements on the subject property:

- The property is planned for a mix of Commercial and Industrial uses.
- NW 17th Street traverses the property's eastern edge in a north/south orientation and it intersects with Hwy 126.
- A park type "Public Space" is identified.
- Public space is identified as traversing the property in a north/south orientation and an east/west orientation.

As detailed on the Master Development Plan exhibit, the proposal includes the following features that carry out the items referenced on the Eastside Framework Plan:

- The proposal provides a mix of Commercial and Industrial land.
- With the exception of a Forest Avenue connection to 9th Street, the street grid is generally consistent with the EFP.
- The design includes a Public Space that traverses the site in a north/south orientation and an east/west orientation.
- Right-of-way improvements that conform to the City of Redmond Arterial Street and/or ODOT standards (travel lanes, curbs, walkways, planter strips) are planned along SE 9th Street and Hwy 126. At time of development (Land Division and/or Site Plan as warranted), the improvements will be constructed.
- Right-of-way improvements that conform to the City of Redmond Collector Street standards (travel lanes, curbs, walkways, planter strips) are planned along SE 17th Street. At time of development (Land Division and/or Site Plan as warranted), the improvements will be constructed.
- Internal grid and non-grid streets improvements that conform to the City of Redmond Street standards (travel lanes, curbs, walkways, planter strips) are planned along the internal streets. At time of development (Land Division and/or Site Plan as warranted), the improvements will be constructed.
- Trails are planned along 13th Street and Hwy 126[8].
- Water is planned to be provided to and through the site in conformance with City Standards.
- Wastewater is planned to be provided to and through the site in conformance with City Standards.

The couple areas of deviation include 1) no park area is planned within the Master Development Plan Area and 2) SE Forest Avenue does not extend through to connect to SE 9th Street to the east.

The reason for the park deviations is due to the fact that the Park and Open Space Zone has been removed from the site by the City, a City recognition that parks are more appropriately located in residential and/or commercial areas (rather than industrial); in locations where nearby residents and/or patrons (in more compact spaces) can use the park / open spaces areas. Industrial uses are typically larger size and have fewer employees on larger units of land. Access to park areas from Industrial Zoned land would require greater distances of travel for fewer people and would be an inefficient use of land.

[8] The east/west trail and open space is relocated to the south of the site, from a central location.

Regarding any potential residential uses that can occur on the C-4A Zoned land, these are likely to be higher density multi-family complexes. The Redmond Development Code requires that multi-family complexes provide for 15% open space or 3,000 sf, whichever is greater (RDC 8.3035.E.9). As such, open space will be provided for residents in the area, should the C-4A be developed with residential uses.

Overall, providing park and/or open space in this area would be an inefficient use of land in this Master Development Plan; as parks and open spaces would be provided for residents or be more efficiently located (near higher density uses) in other parts of the City.

Regarding a SE 9th Street connection south of SE Evergreen Avenue, while this is shown on the Eastside Framework Plan, through the design and development of the SE 9th Street Eastside Arterial Project, additional connections to SE 9th Street (including the connection noted on the Eastside Framework Plan) have been removed (by the City). City Staff have informed the Applicant that a connection to SE 9th Street south of SE Evergreen Avenue will not be authorized.

As detailed above, the proposal complies with the all of the notes and the overall intent of the Eastside Framework Plan, given the planned uses and City changes that have occurred since 2008; therefore the proposal complies with this section.

Transportation Systems

Adopted documents that can assist with understanding conformance with this provision include the City of Redmond Transportation System Plan Map, the Eastside Framework Plan, and the City Development Code (including the required street spacing and design standards). The City Transportation System Plan Map identifies Hwy 126 as an ODOT facility, SE 9th Street as a “Minor Arterial”, E Antler Avenue as a “Major Collector”, and SE 17th Street as a “Proposed Major Collector”. The Eastside Framework Plan shows a general street grid, but it does not specific street classifications or spacing requirements. Furthermore, the Eastside Framework Plan identifies “Public Space” corridors.

As depicted on the Master Development Plan Exhibit, the Master Development Plan, plans for all transportation elements that are identified on the TSP, and the majority of the features of the EFP. The one deviation between the planned street grid and the street grid that is noted on the EFP is the connection of Forest Avenue to SE 9th Street. The reason for this deviation is that through the design and development of the City’s SE 9th Street Eastside Arterial Project, additional connection to SE 9th Street (including the connection noted on the Eastside Framework Plan) have been removed. City Staff has informed the Applicant that a connection to SE 9th Street south of SE Evergreen Avenue will not be authorized.

The proposal plans for improvements along Hwy 126 in accordance with ODOT requirements, including a walkway along the southern property boundary and a single lane roundabout at the SE 17th Street / Hwy 126 intersection. Arterial street improvements are

planned along SE 9th Street, and Collector Street Improvements along Antler and SE 17th Street. Furthermore, the EFP indicates, “Seventeenth Street south of Antler Avenue is a landscaped boulevard with a median, becoming a unifying design element and open space corridor for the Plan area industrial district and the proposed DesertScape development to the west.” The SE 17th Street improvements are planned to conform to City standards and be consistent with other collector streets within and abutting the property; no special treatment is proposed. Furthermore, the project plans for a well-connected grid of local streets, and trails as described on the Eastside Framework Plan.

In addition to the features depicted on the long term plans, the Master Development Plan includes a mix of internal streets, bicycle routes, sidewalks, and trails that conform the City of Redmond spacing and design standards. The transportation system connects to Hwy 126 at 2 points (the existing 9th Street and the planned 17th Street). Two connections to 9th Street (to the west) are planned, at SE Evergreen Avenue and SE Antler Avenue. Two connections are planned to Antler (to the north), at SE 15th Street and SE 17th Street, and 4 connections are planned to NW 17th Street (to the east), at E Antler Avenue, SE Evergreen Avenue, SE Forest Avenue, and SE Glacier Avenue. The widths, locations, and designs depicted on the Master Development Plan are consistent with City of Redmond design standards for local, collector, and arterial streets. Furthermore, bicycle routes are proposed higher order streets, and sidewalks are proposed along all local street rights-of way, in conformance with City street design standards. As designed, each of the transportation components of the Master Development Plan connect to a broader system, which connects to the remainder of the City as prescribed in the EFP, thus in conformance with this standard. Public improvements will occur with subsequent development Land Division or Site Plan Review.

Adequacy of Public Facilities

Sewer – As detailed on the Master Development Plan – Utility Plan, a 12-inch sewer main exists in SE 9th Street immediately west of the property, an 8-inch main is (or will be) located within E Antler Avenue just west of the subject property, and a 12-inch sewer main that is located to the south, within a portion of the Hwy 126 right-of-way. The existing sewer system provides a gravity system at the edge of the subject property, which connects to a broader system that further extends to the City’s Wastewater Treatment Facility (consistent with the City of Redmond Public Facility Plan). As detailed on the Preliminary Utility Plan for this Master Development Plan, sewer mains are planned to extend in new rights-of-way through the entirety of the Master Development Plan Area. The majority of the site will drain to the west, where an estimated 193,651 GPD are forecast to flow through MH15B060. In addition to the western flow, the northeast portion of the site will flow to the north, where an 8-inch main will be extended along the property frontage and extended to west. At the northern connection point, the area is forecast to generate 29,040 GPD. Within the area of the Master Development Plan, sewer mains are planned to extend throughout the site, providing the opportunity for further extensions in all directions. Regarding service laterals, exact locations are not know at this time, however, with the proposed design, it is clear that sewer laterals can be established in accordance with Code Standards, in association with site development (Subdivision or Site Plan).

The entirety of the site will be able to be served with gravity sewer mains. The wastewater needs of the area have been planned for in the City's Wastewater – Public Facilities Plan (PFP), the current project is consistent with the assumed density for the area (in the PFP), and future development will result in substantial System Development Charge contributions (which fund prioritized improvements to the City system). By extending sewer mains and laterals consistent with the City of Redmond adopted design standards (at time of Subdivision and/or Site Plan) and by making all required SDC contributions (at time of Building Permit issuance), the proposed development can and will be adequately served by the existing and planned system.

Water – As detailed on the Master Development Plan – Utility Plan, an 18-inch water main is located in SE 9th Street immediately west of the property, a 12-inch main is located within E Antler Avenue to the west of the subject property, and an 18-inch water main is located within the Hwy 126 right-of-way. The existing system has a flow rates of 1,060 – 1,405 GPM surrounding the subject property. As further detailed on the Public Facilities Plans for this Master Development Plan, the applicant plans to extend a 12-inch main system throughout the Master Development Plan area. Water mains are proposed to be extended throughout the site and will extend in such a manner so as to be available to neighboring properties ("to and through" the property). Regarding service laterals, while exact locations are not know at this time, they can and will be established with site development. As detailed on the plans, laterals will be able to be extended to serve each and every lot, with future Subdivision and/or Site Plan development.

Overall, the water needs of the area have been planned for in the City's Water – Public Facilities Plan (PFP), the current project is consistent with the assumed development intensity for the area, and development on the property will result in substantial System Development Charge contributions (which fund prioritized improvements to the City system). By extending water mains and laterals consistent with the City of Redmond adopted design standards (at time of Subdivision) and by making all required SDC contributions (at time of Building Permit issuance), the proposed development can be adequately served by the existing and planned system.

Stormwater - The area is sufficiently sized to accommodate a mix of private lots and public rights-of-way. In accordance with City Standards, it is anticipated that site development will be required to maintain storm water in accordance with all applicable City of Redmond requirements and all streets have been designed to conform to City requirements, ensuring that public storm water is sufficiently managed and maintained.

Semi Public – The applicant has coordinated with semi-public utility providers and has initiated a plan to extend services throughout the site. In association with future Subdivision(s) and Site Plans, development will be required to finalize the semi-public plans and provide any necessary will-serve letter documentation. This initial steps, in addition to development requirements that will be imposed upon future development applications will ensure semi-public utilities are sufficiently extended to the site, prior to development.

The Public Facility Plans for this Master Development Plan (including the facility extensions noted thereupon) were proposed after extensive consultation with the City of Redmond Public Works Department. All extensions are proposed to be in accordance with City Standards at time of development. Semi-Public service extensions are proposed in accordance with utility provider specification and are planned to be located within rights-of-way and/or utility easements.

Open Space -
While the Eastside Framework Plan, included a rectangular area that appears to be a park, this area was previously zoned OSPR. With the 2020 Comprehensive Plan Update, the City determined that a park was not necessary in this area and this OSPR designated area has been removed. Aside from that open space element, the Eastside Framework Plan identifies linear Public Spaces; one that traverses the subject property in a north/south orientation and one that traverses the property in an east/west orientation.

As detailed on the Plan Set, the proposed Master Development Plan includes linear Public Spaces that will be 50 feet wide and contain multi-use paths, along SE 13th Street and along Hwy 126. These open spaces and multi-use trails are depicted on the plans and noted in the cross sections. Given that only the linear open spaces are necessary on the subject property and that the currently proposed Master Development Plan provides for linear open spaces, the design conforms to this provision.

As described above, the project is generally consistent with the Eastside Framework Plan and the Comprehensive Plan in terms of land use, density, transportation systems and networks, adequacy of infrastructure and open space; therefore the proposal conforms to this criterion.

b. Whether the proposed Plan is generally suitable for the area in which it is proposed, considering existing and planned neighborhoods, shopping and employment areas; and natural resources and hazards.

Applicant Response: Through the establishment of the Eastside Framework Plan and the Comprehensive Plan, a tremendous amount of work was undertaken by the City to plan for desired uses, so that development would be suitable for the area and compatible with nearby development. The framework planning process, along with the Comprehensive Plan planning process established desired zones, areas, uses, and overall suitability for the entire East Redmond area (including the subject property). When establishing the Eastside Framework Plan and Comprehensive Plan, the City considered existing and planned neighborhoods, residential needs, shopping needs and employment areas. The decisions made through the Framework Planning processes have been formalized and adopted into the City's Comprehensive Plan. In the general area of the subject property, the 2008 Eastside Framework Plan and the 2020 Comprehensive Plan have a number of design considerations, including neighborhood types, use areas, employment areas, and connections. The eastside area is intended to provide Employment lands, including Commercial (and some residential, as allowed in the C-4A

Zone) and Industrial, along with a small amount of public space. As detailed on the Master Development Plan Exhibit, and as documented through this narrative, the proposal achieves all of the design components that have been established in the adopted long range plans. The proposed design includes a mix of Commercial and Industrial lands, linear public spaces and trails, consistent with the Eastside Framework Plan, the Comprehensive Plan, the Transportation Systems Plan, and the City Public Facilities Plans.

Regarding existing and surrounding uses, The property sits near the eastern edge of the Redmond UGB. As detailed on the EFP:

> Surrounding Area
> The surrounding area reflects the Redmond urban periphery. To the south is the Roberts Field Municipal Airport (Airport), the major commercial airport serving Central Oregon. West, between the extension of Kingwood Avenue and Antler Avenue, is an area being developed with industrial activities. South of Antler Avenue is vacant, although proposals have been submitted for future industrial development. North of the Kingwood Avenue extension along the west site boundary, land is generally undeveloped or low-density residential, with a small public golf course north of Maple Avenue. North of the Plan area, bordering Upas Avenue, is a residential subdivision on acreage tracts, and land to the east is undeveloped and managed by the Bureau of Land Management (BLM).

The subject property includes a 204.56 portion of the 1,800 acres of the EFP; the area that surrounds the subject property includes:

- *Southwest* – the Opportunity Foundation of Central Oregon; an underdeveloped Light Industrial property
- *West* – Mike's Pizza site, currently undeveloped
- *South* – Hwy 126 and City of Redmond Owned property. This property used to be a golf course, it is currently unused. Redmond / Roberts Field Airport further south
- *East* - vacant lands in the EFP
- *North* - vacant lands in the EFP
- *Northeast* - vacant lands in the EFP

As detailed on the Master Development Plan exhibit, the proposal includes the following features that carry out the items referenced on the Eastside Framework Plan:

- The proposal provides a mix of Commercial and Industrial land.
- With the exception of a Forest Avenue connection to 9th Street, the street grid is generally consistent with the EFP.
- The design includes a Public Space that traverses the site in a north/south orientation.
- The design includes a Public Space that traverses the site in an east/west orientation.

- Right-of-way improvements that conform to the City of Redmond Arterial Street and/or ODOT standards (travel lanes, curbs, walkways, planter strips) are planned along SE 9th Street and Hwy 126. At time of development (Land Division and/or Site Plan as warranted), the improvements will be constructed.
- Right-of-way improvements that conform to the City of Redmond Collector Street standards (travel lanes, curbs, walkways, planter strips) are planned along SE 17th Street. At time of development (Land Division and/or Site Plan as warranted), the improvements will be constructed.
- Internal grid and non-grid streets improvements that conform to the City of Redmond Street standards (travel lanes, curbs, walkways, planter strips) are planned along the internal streets. At time of development (Land Division and/or Site Plan as warranted), the improvements will be constructed.
- Trails are planned along 13th Street and Hwy 126.
- Water is planned to be provided to and through the site in conformance with City Standards.
- Wastewater is planned to be provided to and through the site in conformance with City Standards.

Overall, the design is generally consistent with the Eastside Framework Plan and the zone locations of the Comprehensive Plan; providing for the use types, intensity of development, street location and design, public amenities, and overall character; therefore the proposal will provide compatibility with the surrounding area, and it will achieve a transition similar to that envisioned by the City through prior planning efforts. The proposal is consistent with this provision.

c. Whether the proposed Plan is functionally integrated with developed or planned areas.

Applicant Response: The area to the west is partially developed while the areas to the north and east are undeveloped, but planned for industrial and commercial development as outlined in the Eastside Framework Plan. To the south is Hwy 126 and a former golf course that is owned by the City of Redmond, with the Redmond Airport south of that. The design provides land uses that are consistent with the Comprehensive Plan, it extends transportation system as defined in the Eastside Framework Plan, and it extends water and sewer mains to and through the property in manner by which the surrounding properties can developed, as established by the Eastside Framework Plan.

Overall, the way that the area is planned to be developed has been fully established by the City through extensive Comprehensive Plan and the Framework Plan public planning processes. The referenced long-range planning documents establish zones, use areas, densities, amenities and transportation systems that will result in an intentional and fully integrated planning area. The currently proposed Master Development Plan is consistent with the adopted long range plans.

In addition to a design and layout that is consistent with the referenced long range plans, the proposal will extend water and sewer facilities, along with all franchise utilities

throughout the site in conformance with City Standards. By extending all required utilities and facilities "to and through" the property in a manner that is consistent with the adopted long range plans (Comprehensive Plan and Eastside Framework Plan), and City Standards, the proposal will sufficiently integrate public utilities and facilities into the development area and to the surrounding properties. As planned, the proposal is fully integrated to adopted plans and known developments, thus in conformance with the standards of this section.

d. The proposed plan meets the applicable Great Neighborhood Principles.

Applicant Response: The project is consistent with the Eastside Framework Plan and as detailed on Pages 8-10 of the Plan:

Great Neighborhood Principles

The Great Neighborhood Principles are incorporated into the Plan. Following is a brief summary of how each of the Principles is achieved.

- Walkable and Bikable. The internal circulation includes a series of pedestrian/bicycle pathways within green spaces and corridors, augmenting the street system and supporting the use of nonmotorized transportation in a pleasant setting. Neighborhood commercial centers are located within convenient walking distance in residential neighborhoods. Landscaped boulevards are strategically placed in areas of intense employment, encouraging outdoor activities and pedestrian use.

- Interconnected Streets. Two new major north-south streets (17th and 33rd Streets) extend the full length of the site to augment 9th Street, the only existing north-south collector street east of the Highway 97 Bypass. There is also a Central Parkway that serves the northern residential area, and a central Park Blocks and boulevard with a high school, community/recreation center, and town center south of the Central Park. Major east-west streets providing access the full width of the site are Upas Avenue along the north site boundary, existing Highway 126 along the south site boundary, and extensions of Highland, Antler, and Maple Avenues to the center of the site from the west. Quince Avenue connects to the Central Parkway in the center of the site, and the future realigned Highway 126 (which may replace Antler or Highland Avenues) will provide an east-west connection, although access to the Plan area will be limited to major intersections. Future potential access to the BLM-managed land is shown at Antler, Hemlock, and Maple Avenues. Local streets will be identified with Master Plans as each development phase occurs.

- Variety of Housing Choices. A full spectrum of housing densities and locations are provided. The most intense housing is toward the center of the site, between the Central Park and the industrial area. Other high-density residential development is allowed throughout, particularly along the west site boundary and around neighborhood parks. Lower-density housing is found throughout the site where it interfaces with non-urban lands and open spaces.

- Diverse Mix of Activities. As noted above, the Plan provides for a full range of land uses with major employment areas on the southern portion of the site, open space and recreational areas throughout with the Central Park in the middle, and residential development north of the industrial lands. Schools, parks, and neighborhood commercial uses are located where they can take advantage of nearby open areas and bicycle/pedestrian corridors.

- Open Spaces. The major open space element incorporates the rock features that extend diagonally across the site from 17th Street and Antler Avenue to 33rd Street and Upas Avenue, and includes the solid waste landfill site. The southern terminus at 17th Street and Antler Avenue provides the opportunity for an open space connection to Antler Avenue, which in turn could be developed as a major boulevard and pedestrian connection to the west. Seventeenth Street south of Antler Avenue is a landscaped boulevard with a median, becoming a unifying design element and open space corridor for the Plan area industrial district and the proposed DesertScape development to the west. Open space corridors connect schools and activity centers, encouraging walking and bicycling. They also extend to the east site boundary, allowing future access to the BLM-managed land when a management plan is completed. In summary, open spaces are provided primarily on either land that has severe development constraints (landfill, rock features) or that functions to enhance the transportation network and merge the site with surrounding development. Overall, the open space features become a major identity feature and landmark for the Plan area.

- Canals. There are no canals on the site, but two are located to the east and west. Both the east-west grid streets and open space network provide numerous opportunities for bicycle/pedestrian connections between them.

- Public Art. Because this is a framework plan, specific public art locations are not identified. Rather, the opportunities for future public art are provided. Most prominent of these is the gateway into the site and City of Redmond from the east on Highway 126. Other potential art locations include roundabouts at major intersections, boulevards, parks, and the community/recreation/civic center.

- Scenic Views. The general level nature of the site provides potential panoramic views from the low-lying rock features that extend diagonally across the site. Additionally, the major street system, augmented by the open space network, allows distant views of Smith Rock to the north and Powell Butte to the east. Within the site, incorporation of rock features into open space calls attention to this nearby natural feature, giving local identity.

- Environmentally-Friendly Design. A major environmentally-friendly feature of the Plan is creation of a transportation network of separated bicycle/pedestrian pathways connecting major employment areas, commercial nodes, and residential neighborhoods. A full range of land uses are arranged so they are within walking and bicycling distance, reducing traffic levels. They also encourage internal trips rather than traveling outside of the Plan area for working, shopping, recreation, schools, or residences. This reduces traffic impacts on the street network outside of the site.

- Urban-Rural Interface. The site abuts the eastern URA boundary and a large parcel of BLM-managed land. There is no management plan in place, so access must be restricted at this time. The Plan recognizes the edge of the URA by placing a meandering landscaped parkway along the edge with landscaping, open spaces, and low-density residential development separating the roadway and BLM land. A number of potential future access points to the east are shown, which can be used as appropriate when the management plan is developed.

- Integrated Design Elements. Major design elements of the Plan are included under each of the Great Neighborhood Principles described previously. In combination they:

    - Establish a unique neighborhood character that reflects Central Oregon and the City of Redmond.

    - Integrate the Plan area into the existing City development pattern and take advantage of surrounding commercial and industrial development.

    - Identify neighborhood centers and activity nodes.

    - Create edges and boundaries for the neighborhood through design.

    - Create efficient transportation pathways to and through the site in a manner that connects the neighborhood to the rest of the City and reinforces neighborhood activities and livability.

    - Identify and Emphasize natural landmarks, both within and beyond the Plan area, which provide identity of individual neighborhoods and orientation within them.

To the extent that the project necessitates additional assessment of compliance with the Great Neighborhood Principles, a complete review is included in subsection 14 below. As detailed therein, the proposal complies with all applicable principles as individually called out in the Code, thus the proposal also complies with this reference provision.

C. ***Master Development Plan (MDP) or Partial Master Development Plan (PMDP) Submittal Requirements and Approval Process*.**

An application for approval shall include the submittal requirements set forth in the City's Land Use Review application form as well as the elements described below.

Applicant Response: The application includes all of the requirements identified on the Master Development Plan application form and the elements described in this section. Additional items of this section are addressed below.

1. ***Narrative*. A narrative shall set forth the goals and objectives of the plan and describe the urban characteristics of the planned area.**

Applicant Response: This document sets forth the goals and objectives of the Master Development Plan and highlights the urban characteristics of the area, as required by this section.

2. ***Neighborhood Meeting*. Proof a neighborhood meeting was conducted to provide an opportunity for the applicant to meet with surrounding property owners discuss the proposal. See Section 8.0385 for meeting requirements.**

Applicant Response: A Neighborhood Meeting was held on Monday, July 21, 2025 at 6:00 pm. The meeting was held at the Hayden Homes office, 250 SE Timber Avenue, Redmond, which is just over 1 mile from the subject property. Prior to meeting, notice was sent to neighboring property owners within 750 feet and a sign was posted on the property for over 7 days. At the meeting, a sign-in sheet was provided, project details were relayed, and the applicant heard questions and concerns from the one attendee. The meeting was held in conformance with RDC 8.0385; details of the meetings are included as an Exhibit.

3. ***Development Plan Map*. A map of the plan area and surrounding vicinity shall indicate planned land uses for each land parcel in the area, including plans for park and open space and community facilities, if known. The plan shall show proposed comprehensive plan map designations and zoning. The plan shall include a list of all affected properties with tax lot numbers, current ownership, parcel size, and other information that is pertinent to the plan.**

Applicant Response: Included as an Exhibit, the submittal contains a Master Development Plan Exhibit that includes all items required under this section.

4. ***Land Use Diagram*. The land use diagram shall generally indicate the distribution and location of planned land uses for the master plan area, including plans for park and open space and community facilities, if known. The plan shall show proposed comprehensive plan designations, zoning, and density.**

Applicant Response: Included as an Exhibit, the submittal contains a Master Development Plan Exhibit and a Comprehensive Plan / Zoning Map Exhibit, which collectively document planned land uses for the Master Development Plan area, the location of open spaces, and trails, proposed comprehensive plan designations, zoning and density as required by this section.

5. ***Significant Resources Inventory*. An inventory of significant natural resources, scenic and historic resources, and open space areas including those identified on the City's adopted**

inventory and those that have the potential to qualify for protection under Redmond's Goal 5 resource protection program. When significant resources are present, the proposed plan shall include a management plan to protect resource sites;

Applicant Response: The property does not contain buildings that are over 50 years old and/or buildings that are listed on any local, state, or federal lists of historical significance.

Regarding views, the EFP specifies the following:

> Scenic Views. The general level nature of the site provides potential panoramic views from the low-lying rock features that extend diagonally across the site. Additionally, the major street system, augmented by the open space network, allows distant views of Smith Rock to the north and Powell Butte to the east. Within the site, incorporation of rock features into open space calls attention to this nearby natural feature, giving local identity.

The subject property does not contain any adopted view corridors or view restrictions. As detailed on the Master Development Plan Set, the proposed design extends 3 internal streets in an east/west orientation, to the edges of the property. These street connections will provide view corridors throughout the property at a size and scale, and at locations that are appropriate for a development of this size.

Regarding natural resources, the property does not include any city, state, or federally protected resources. The area does contain areas of topographic change, rock outcroppings, trees, and vegetation. The currently proposed Master Development Plan will not impact any of these features. The current plan is high level and conceptual. The proposed design accommodates the locations of rights-of-way, water/sewer improvements, open spaces and walkways, however none of these improvements will occur until site development (Subdivision and/or Site Plan development). If, when, and how trees will be removed and/or development is planned amongst the existing topography will be decided with future, site specific, development. The currently proposed Master Development Plan does not forego the opportunity for the preservation of views and/or natural resources in any way, and the site does not contain any other natural resources; therefore the proposal conforms to the standards of this section.

6. ***Parks and Open Space*. Identify land suitable for park and recreation use in accordance with the needs analysis in the City of Redmond Park Master Plan (Park Plan) and an adopted Area Plan. In particular, where the Park Plan indicates there is a need for neighborhood or community park, the master plan shall identify sites that may be suitable for park development using the design and location criteria from the Park Plan or an adopted Area Plan. Density transfers, SDC credits, dedication, and other value consideration may be identified in the planning process to compensate property owners for land dedicated to public use;**

Applicant Response: On the subject property the Eastside Framework Plan included a rectangular area that appears to be a park, this area was previously zoned OSPR. With the 2020 Comprehensive Plan Update, the City determined that a park is not needed in this area and the OSPR designated area was removed from the subject property. Aside from that open space element, the Eastside Framework Plan identifies linear Public Spaces, one that traverses the subject property in a north/south orientation and one that traverses the property in an east/west orientation.

As detailed on the Plan Set, the proposed Master Development Plan includes linear Public Spaces that will be 50 feet wide and contain multi-use paths, along SE 13th Street and along Hwy 126, while the east/west open space has been relocated to the southern portion of the property, it serves the same purpose and is more appropriate and fitting for the area, particularly given the fact that the City has approved residential uses near the southeast corner of the subject property. These open spaces and multi-use trails are depicted on the Master Development Plan and noted in the planned cross sections. Given that only the linear open spaces are needed on the subject property and that the Master Development Plan plans for linear open spaces, the design conforms to this provision.

7. *Air, Noise, and Water Resources*. Review air, noise and water resources that may be impacted by planned development and address how adverse impacts will be avoided or mitigated in compliance with applicable local, state, and federal regulations. The analysis may use City public facility plans, technical studies, and policies to meet this requirement when those plans address how urban development in the plan area can be served. In these instances, the Master Development Plan must show that the envisioned land uses in the plan area are consistent with the land use assumptions in the public facility plans. This requirement is particularly important for storm water management.

Applicant Response: The commercial, residential (as allowed in the C-4A Zone), industrial, and open space uses that are planned on the subject property are consistent with the Comprehensive Plan. The currently adopted City - Public Facility Plans (including storm management plan) are based upon the Comprehensive Plan use designations, thus the planned uses are consistent with the City's forecasted uses. Given that all planned uses are Employment uses and generally consistent with the City's forecasted uses, potential adverse impacts have been adequately considered (through the Framework Planning process and the Comprehensive Plan). This proposal considers public facility impacts and as detailed throughout; significant impacts are not anticipated.

Prior to site specific developments, the applicant will be required to submit all necessary Land Division and/or Site Plan applications. In accordance with Development Code requirements, concurrent with development, public facilities will need to be extended to the and through the development areas. The City Development Code and the City Standards document adequately ensure protection and preservation of air, noise and water

resources, and this Master Development Plan (a concept plan) and all future site specific development plans will be required to document conformance with all applicable City documents. As such, the proposal, review process, and subsequent submittal, review, and approval process will ensure conformance with the requirements of this section.

8. *Natural Hazard Areas*. Inventory areas subject to natural hazards, particularly steep slopes, and program urban development that is suitable for the identified hazard areas;

Applicant Response: Potential Natural Hazards are mapped by the Oregon Department of Geology and Mineral Industries ("DOGMI") in their Oregon HazVu Geohazards Viewer. The referenced Map/Viewer provides natural hazard potential related to:

- State Owned and Public Buildings
- Radon Potential
- Cascadia Earthquake Hazard
- Flood Hazard
- Tsunami Hazard
- Coastal Erosion Hazard
- Volcano Hazard
- Earthquake Hazard
- Landslide Hazard

Upon review of the Oregon HazVu Geohazards Viewer, the property has:

- No state owned or public buildings
- "Low" radon potential
- "Moderate" Cascadia Earthquake Shaking Hazard
- No flood hazard
- No tsunami hazard
- No Coastal erosion hazard
- No volcano hazard
- A few small areas of "Moderate" landslide hazard areas.

All of these ratings are similar to the majority of other properties throughout the City of Redmond, thus are reasonable for development.

Additional hazards considered by the City of Redmond include wildfire risks and winter storm risks. Being located in the same general area, with similar topography and vegetation, as other recently developed properties, the Master Development Plan area has similar wildfire and winter storm hazard risks as the majority of the properties on the east side of the City.

Also, an assessment of Natural Hazards has been conducted by the project engineer; there have not been any natural hazard areas identified on the property.

Overall, the hazards of the Master Development Plan area are similar to the majority of the City of Redmond. There is nothing that has been found related to natural hazards that would or should limit development.

9. ***Residential Uses*. Identify areas planned for housing development, if any, and the proposed zoning districts to be applied. The housing plan must identify a mix of housing types and densities so that the overall density in the area meets or exceeds the housing density objectives for the area that are identified in the Redmond Urban Framework Plan, adopted Area Plans, and the Comprehensive Plan. The Framework Plan and adopted Area Plans provide general guidance on housing densities that need to be achieved in order to meet future housing needs. Where proposed residential land uses differ from those shown in the Redmond Urban Framework Plan or adopted Area Plans, the master plan shall demonstrate how it meets the overall housing objectives of the Redmond Urban Framework Plan or adopted Area Plans. Applicants may propose new zoning districts when the proposed district(s) in total achieve the housing densities envisioned in the Redmond Urban Framework Plan or adopted Area Plans.**

Applicant Response: The area does not have any residential designated land (on the Eastside Framework Plan or the City's Comprehensive Plan Map), thus the property is not "planned" by the City for residential components; this section is not applicable. That said, residential uses are permitted in the C-4A Zone and it is anticipated that some of the C-4A land will ultimately be developed with residential uses that are permitted within that zone.

10. ***Employment Uses*. Identify areas planned for employment use and/or mixed uses and the proposed zoning for these areas. Applicants may propose new zoning districts in cases where existing districts are not suitable for the planned development provided the proposed district(s) achieve similar land improvement values and/or employment densities envisioned in the Redmond Urban Framework Plan or adopted Area Plans.**

Applicant Response: With the proposed Comprehensive Map Amendment and Zone Change, the property includes a mix of C-4A, M-1 and M-2 designated properties, all of which are Employment lands.

GROSS ZONING HISTORY & COMPARISON TABLE

ZONE DESIGNATION	EASTSIDE FRAMEWORK PLAN (ESFP)	REDMOND 2040 COMP PLAN	PROPOSED ZONING
C2 - CENTRAL BUSINESS DISTRICT COMMERCIAL	26.92 - AC	0.00 - AC	0.00 - AC
C4A - LIMITED SERVICE COMMERCIAL	22.98 - AC *	41.94 - AC	50.71 - AC
M1 - LIGHT INDUSTRIAL	144.04 - AC	162.62 - AC	85.76 - AC
M2 - HEAVY INDUSTRIAL	0.00 - AC*	0.00 - AC	68.09 - AC
PUB - PUBLIC SPACE	10.62 - AC**	0.00 - AC	0.00 - AC
TOTAL:	204.56 - AC	204.56 - AC	204.56 - AC

NOTES:

* - ADDITIONAL 12.5 ACRES OF C4A ON ADJACENT PARCEL TO NE IDENTIFIED IN EASTSIDE FRAMEWORK PLAN, CURRENTLY ZONED AS M-2. ADDITIONAL 18.3 ACRES OF M-2 ON ADJACENT PARCEL TO THE NW IDENTIFIED ON EASTSIDE FRAMEWORK PLAN, CURRENTLY ZONED M-1.

** - EASTSIDE FRAMEWORK PLAN DESIGNATED PUBLIC SPACES ADJACENT TO RIGHT OF WAYS ARE NOT DELINEATED OR INCLUDED IN AREA CALCULATIONS.

As detailed on the Master Development Plan, the proposal maintains an equivalent amount of Employment land (as currently identified in the Comprehensive Plan), it adds 12.5 acres of Commercial land (which is needed in the City), and it provides greater diversity in the types of Industrial uses that could occupy the area (having both M-1 and M-2 zoned land). Also, the revised locations of some of the zones are very similar to the Comprehensive Plan and the Eastside Framework Plan; the minor adjustments will allow for more efficient development amongst the current economic climate, with the commercial area nearest to the City's Eastside Arterial project, and industrial uses, with increasing intensities, moving toward the east side of the site. The applicant anticipates that the proposal will be reviewed by both the Planning Commission and the City Council. This section specifically allows for changing and/or relocating zones, so long as the proposed changes will achieve similar land improvement values and densities, as the Plan and Framework Plan.

The applicant has completed a thorough assessment of the property and the current market conditions. Based upon a market analysis of the property, the applicant has determined that the proposed concept plan, layout, and zone areas will best meet current market demands, efficiently providing improvements and densities that are consistent with the approved plans. Given the fact that the proposal does not change the amount of Employment land in the City, the proposal complies with the requirements of this section.

11. *Transportation Analysis and Diagram*. Prepare a Transportation Impact Analysis (TIA) including a grid street plan that is consistent with street spacing and connectivity guidelines in the

Redmond Transportation System Plan (TSP) and adopted Area or Framework Plans. The TIA shall identify and show:

a. The proposed classification for all streets.
b. The location of approved TSP improvement projects.
c. Any capital improvements that may need to be added to the TSP in order to serve the plan area.
d. Proposed bicycle pedestrian, and trail routes.
e. Demonstrate how planned transportation facilities will connect to transportation facilities in adjacent urban areas

Applicant Response: A Transportation Diagram is included in the Master Development Plan Exhibit, along with street and trail cross sections. As detailed thereupon, the planned street grid is generally consistent with the street grid that is depicted on the Eastside Framework Plan. As detailed on the submitted materials, the street plan is proposed to be consistent with the street spacing and connectivity guidelines of the Redmond TSP and Development Code.

In addition to the submittal materials, the applicant has met with City and Oregon Department of Transportation (ODOT) staff, and conducted a Traffic Impact Statement to assess traffic impacts from development within the Master Development Planned area. A detailed traffic analysis is included in the "Traffic Element" Exhibit and the City's TSAA approval.

The applicant plans to complete all recommended items in the Traffic Element; therefore the transportation system will be safe and will have adequate capacity. Lastly, Systems Development Charges (SDC) will need to be paid for the planned development, which will occur at the time of development. Given that there is adequate capacity and that the proposal will conform to City Standards; the proposal conforms to the requirements of this section.

12. *Public Facilities Analysis and Diagram*. The plan shall include a conceptual layout of public facilities, (including sanitary sewer, water, and storm drainage) needed to support the planned uses. The Public Facilities Analysis must be consistent with the city's adopted Public Facility Plan (PFP) and related facility master plans, including improvements related to the adopted Area Plan that may require amending the PFP.

Applicant Response: The Master Development Plan Exhibit includes a diagram that depicts all public facilities that are needed to accommodate the Master Development Planned area. All public facilities and services needed to serve the development are proposed to be extended to the site at time of development, including water, sewer, storm water, along with semi-public facilitates. Improvements that are depicted on the Master Plan include the following:

Sewer – A 12-inch sewer main exists in SE 9th Street immediately west of the property, an 8-inch main is (or will be) located within E Antler Avenue just west of the subject property, and a 12-inch sewer main is located to the south, within a portion of the Hwy 126 right-of-way. The existing sewer system provides gravity connections at the edge of the subject property, which connects to a broader system that extends to the City's Wastewater Treatment Facility (consistent with the City of Redmond Public Facility Plan). As detailed on the Preliminary Utility Plan for this Master Development Plan, sewer mains are planned to be extended in new rights-of-way throughout the entirety of the Master Development Plan Area. The majority of the site will drain to the west, where an estimated 193,651 GPD are forecast to flow through MH15B060. In addition to the western flow, the northeast portion of the site will flow to the north, where an 8-inch main will be extended along the property frontage and extended to the west. At the northern connection point, the area is forecast to generate 29,040 GPD. Within the Master Development Plan area, sewer mains are planned to extend throughout the site, providing the opportunity for further extensions in all directions. Regarding service laterals, exact locations are not know at this time, however, with the proposed design, it is clear that sewer laterals can be established and extended to lots in accordance with Code Standards, in association with site development (Subdivision or Site Plan).

The entirety of the site will be able to be served with gravity sewer mains. The wastewater needs of the area have been planned for in the City's Wastewater – Public Facilities Plan (PFP), the current project is consistent with the assumed density for the area (in the PFP), and future development will result in substantial System Development Charge contributions (which fund prioritized improvements to the City system). By extending sewer mains and laterals consistent with the City of Redmond adopted design standards (at time of Subdivision and/or Site Plan) and by making all required SDC contributions (at time of Building Permit issuance), the proposed development can and will be adequately served by the existing and planned system.

Water – As detailed on the Master Development Plan – Utility Plan, an 18-inch water main is located in SE 9th Street, immediately west of the property, a 12-inch main is located within E Antler Avenue just west of the subject property, and an 18-inch water main is located within the Hwy 126 right-of-way. The existing system has a flow rates of 1,060 – 1,405 GPM surrounding the subject property. As further detailed on the Public Facilities Plans for this Master Development Plan, the applicant plans to extend a 12-inch main system throughout the Master Development Plan area. Water mains are proposed to be extended throughout the site and will extend in such a manner so as to be available to neighboring properties ("to and through" the property). Regarding service laterals, while exact locations are not know at this time, they can and will be established with site development. As detailed on the plans, laterals will be able to be extended to serve each and every lot, with future Subdivision and/or Site Plan development.

Overall, the water needs of the area have been planned for in the City's Water – Public Facilities Plan (PFP), the current project is consistent with the assumed development intensity for the area, and development on the property will result in substantial System Development Charge contributions (which fund prioritized improvements to the City

system). By extending water mains and laterals consistent with the City of Redmond adopted design standards (at time of Subdivision) and by making all required SDC contributions (at time of Building Permit issuance), the proposed development can be adequately served by the existing and planned system.

Stormwater - The area is sufficiently sized to accommodate a mix of private lots and public rights-of-way. In accordance with City Standards, it is anticipated that site development will be required to maintain storm water on-site, in accordance with all applicable City of Redmond requirements and all streets have been designed to conform to City requirements, ensuring that public storm water is sufficiently managed and maintained.

Semi Public – The applicant has coordinated with semi-public utility providers and has initiated a plan to extend services throughout the site. In association with future Subdivisions and Site Plans, development will be required to finalize the semi-pubic utility plans and provide any necessary will-serve letter documentation. The initial steps in addition to development requirements will ensure semi-public utilities are sufficiently extended to the site, prior to development.

The Master Development Plan - Public Facilities Maps, including the planned facilities extensions noted thereupon were designed after extensive consultation with the City of Redmond Public Works Department. All extensions are proposed to be in accordance with City Standards, and will be constructed at time of development. Semi-Public service extensions are proposed in accordance with utility provider specification and are planned to be located within rights-of-way and/or utility easements. Prior to development, Site Plan and/or Land Divisions will be needed. It is understood that in association with development, the identified infrastructure will need to be install in accordance with City requirements.

13. ***North Redmond US 97 Interchange Area Management Plan (IAMP) Compliance….***

Applicant Response: The property is not situated within the North Redmond US 97 Interchange Area Management Plan; therefore this section does not apply.

14. ***Great Neighborhood Principles.*** **MDPs shall address applicable Great Neighborhood Principles below. In instances where the property proposed for a MDP is located within the boundary of an adopted Area Plan, the MDP shall also address the Great Neighborhood Principles according to the specificity provided in the Area Plan.**

Applicant Response: The property is located within the area of the Eastside Framework Plan. As detailed in the EFP (summarized below), the EFP is consistent with the Great Neighborhood Principles (Pages 7-10) and as noted throughout this narrative, the currently proposed Master Development Plan is consistent with the EFP (comments below):

Great Neighborhood Principles

The Great Neighborhood Principles are incorporated into the Plan. Following is a brief summary of how each of the Principles is achieved.

• Walkable and Bikable. The internal circulation includes a series of pedestrian/bicycle pathways within green spaces and corridors, augmenting the street system and supporting the use of nonmotorized transportation in a pleasant setting. Neighborhood commercial centers are located within convenient walking distance in residential neighborhoods. Landscaped boulevards are strategically placed in areas of intense employment, encouraging outdoor activities and pedestrian use.

Applicant Response: As it relates to the subject property, significant (50 foot wide) corridors with multi-use paths are planned along SE 13th Street (north/south) and Hwy 126 (east/west). Also, sidewalks are planned along all streets and bicycle lanes are planned along the higher order streets. The SE 13th Street corridors aligns with the Eastside Framework Plan, whereas the east/west route along Hwy 26 relocates the corridor to better serve the area (including planned residential development to the east).

• Interconnected Streets. Two new major north-south streets (17th and 33rd Streets) extend the full length of the site to augment 9th Street, the only existing north-south collector street east of the Highway 97 Bypass. There is also a Central Parkway that serves the northern residential area, and a central Park Blocks and boulevard with a high school, community/recreation center, and town center south of the Central Park. Major east-west streets providing access the full width of the site are Upas Avenue along the north site boundary, existing Highway 126 along the south site boundary, and extensions of Highland, Antler, and Maple Avenues to the center of the site from the west. Quince Avenue connects to the Central Parkway in the center of the site, and the future realigned Highway 126 (which may replace Antler or Highland Avenues) will provide an east-west connection, although access to the Plan area will be limited to major intersections. Future potential access to the BLM-managed land is shown at Antler, Hemlock, and Maple Avenues. Local streets will be identified with Master Plans as each development phase occurs.

Applicant Response: As it relates to the subject property, 17th Street is planned to be improved along the eastern edge of the property, SE Antler Avenue will be improved along the northern edge of the property, and pedestrian (and intersection) improvements are planned along Hwy 126 to the south. The improvements of the proposed Master Development Plan are consistent with these comments from the EFP.

• Variety of Housing Choices. A full spectrum of housing densities and locations are provided. The most intense housing is toward the center of the site, between the Central Park and the industrial area. Other high-density residential development is allowed throughout, particularly along the west site boundary and around neighborhood parks. Lower-density housing is found throughout the site where it interfaces with non-urban lands and open spaces.

Applicant Response: While some residential uses may occur within the C-4A zoned land, none of the land on the subject property is residentially zoned; this provision is not relevant to the subject property.

• Diverse Mix of Activities. As noted above, the Plan provides for a full range of land uses with major employment areas on the southern portion of the site, open space and recreational areas throughout with the Central Park in the middle, and residential development north of the industrial lands. Schools, parks, and neighborhood commercial uses are located where they can take advantage of nearby open areas and bicycle/pedestrian corridors.

Applicant Response: The subject property is located in the southern portion of the EFP area, thus intended for Employment uses. As detailed on the Plan Set, the proposed Master Development Plan provides a detailed conceptual plan that adequately accommodates Employment lands, consistent with the provisions of this section.

• Open Spaces. The major open space element incorporates the rock features that extend diagonally across the site from 17th Street and Antler Avenue to 33rd Street and Upas Avenue, and includes the solid waste landfill site. The southern terminus at 17th Street and Antler Avenue provides the opportunity for an open space connection to Antler Avenue, which in turn could be developed as a major boulevard and pedestrian connection to the west. Seventeenth Street south of Antler Avenue is a landscaped boulevard with a median, becoming a unifying design element and open space corridor for the Plan area industrial district and the proposed DesertScape development to the west. Open space corridors connect schools and activity centers, encouraging walking and bicycling. They also extend to the east site boundary, allowing future access to the BLM-managed land when a management plan is completed. In summary, open spaces are provided primarily on either land that has severe development constraints (landfill, rock features) or that functions to enhance the transportation network and merge the site with surrounding development. Overall, the open space features become a major identity feature and landmark for the Plan area.

Applicant Response: As it relates to the subject property, the written text of this section refers to the design of 17th Street, south of Antler Avenue and it indicates that open space corridors will be extended to the east. As detailed on the Plan Set, the street design incorporates the majority of the design items that are noted in this section. While the Eastside Framework Plan includes an east/west corridor in the area of SE Evergreen Avenue, the current proposal relocates this corridor to the southern portion of the site, along Hwy 126. The southern corridor still provides an east/west connection, it is supported by ODOT, and it is located in an area that will serve Oasis Village, an approved development to the east.

Regarding SE 17th Street, rather than a landscaped boulevard with a median, a City Standard collector street cross section is proposed.

Aside from the written text, while the Eastside Framework Plan included a rectangular area that appears to be a park, this area was previously zoned OSPR. With the 2020 Comprehensive Plan Update, the City determined that a park is not needed in this area and this OSPR designated area was removed.

• Canals. There are no canals on the site, but two are located to the east and west. Both the east-west grid streets and open space network provide numerous opportunities for bicycle/pedestrian connections between them.

Applicant Response: The proposal plans for bicycle and pedestrian facilities that are consistent with the EFP, therefore the proposal is consistent with this text of the EFP.

> • Public Art. Because this is a framework plan, specific public art locations are not identified. Rather, the opportunities for future public art are provided. Most prominent of these is the gateway into the site and City of Redmond from the east on Highway 126. Other potential art locations include roundabouts at major intersections, boulevards, parks, and the community/recreation/civic center.

Applicant Response: The proposal identifies potential public art locations at 4 locations:

- SE 15th Street / SE Antler Avenue
- SE 9th Street / SE Evergreen Avenue
- SE 9th Street / Hwy 126
- SE 17th Street / Hwy 126

Public art details will be finalized with subsequent development applications (Subdivision and/or Site Plan).

> • Scenic Views. The general level nature of the site provides potential panoramic views from the low-lying rock features that extend diagonally across the site. Additionally, the major street system, augmented by the open space network, allows distant views of Smith Rock to the north and Powell Butte to the east. Within the site, incorporation of rock features into open space calls attention to this nearby natural feature, giving local identity.

Applicant Response: The subject property does not contain any adopted view corridors or view restrictions. As detailed on the Master Development Plan Set, the design extends 3 internal streets in an east/west orientation, to the edges of the property. These street connections will provide view corridors (to the mountains to the west) throughout the property, at a size and scale, and at locations that are appropriate for a development of this size and type.

> • Environmentally-Friendly Design. A major environmentally-friendly feature of the Plan is creation of a transportation network of separated bicycle/pedestrian pathways connecting major employment areas, commercial nodes, and residential neighborhoods. A full range of land uses are arranged so they are within walking and bicycling distance, reducing traffic levels. They also encourage internal trips rather than traveling outside of the Plan area for working, shopping, recreation, schools, or residences. This reduces traffic impacts on the street network outside of the site.

Applicant Response: The proposal accommodates Employment lands as intended by the EFP. Furthermore, the design provides for open space and multi-use path corridors across the property. The plans design carries out the major features of the EFP and is therefore consistent with this text of the EFP.

> • Urban-Rural Interface. The site abuts the eastern URA boundary and a large parcel of BLM-managed land. There is no management plan in place, so access must be restricted at this time. The Plan recognizes the edge of the URA by placing a meandering landscaped parkway along the edge with landscaping, open spaces, and low-density residential development separating the roadway and BLM land. A number of potential future access

points to the east are shown, which can be used as appropriate when the management plan is developed.

Applicant Response: While the 1,800 acres of land in the EFP may include land at the urban-rural interface, the subject property is not at the urban-rural interface. The property is surrounded by lands that are within the City of Redmond Urban Growth Boundary and City Limits and the proposal carries out the desired land uses of the EFP. The proposal is consistent to the text of this section to the extent applicable.

• Integrated Design Elements. Major design elements of the Plan are included under each of the Great Neighborhood Principles described previously. In combination they:

• Establish a unique neighborhood character that reflects Central Oregon and the City of Redmond.

• Integrate the Plan area into the existing City development pattern and take advantage of surrounding commercial and industrial development.

• Identify neighborhood centers and activity nodes.

• Create edges and boundaries for the neighborhood through design.

• Create efficient transportation pathways to and through the site in a manner that connects the neighborhood to the rest of the City and reinforces neighborhood activities and livability.

• Identify and Emphasize natural landmarks, both within and beyond the Plan area, which provide identity of individual neighborhoods and orientation within them.

Applicant Response: As detailed throughout this narrative, the proposed Master Development Plan is generally consistent with the EFP; as such, it does its part to carry out these bulleted items. Additional comments, documenting individual site conformance with the Great Neighborhood Principles are included below.

a. *Transportation*. Connect people and places through a complete grid street network and trail system that invites walking and bicycling and provides convenient access to parks, schools, neighborhood service centers, and possible future transit stops.

Applicant Response: Adopted documents that can assist with understanding conformance with this provision include the City of Redmond Transportation System Plan Map, the Eastside Framework Plan, and the City Development Code (including required street spacing and design standards). The City Transportation System Plan Map identifies Hwy 126 as an ODOT facility, SE 9th Street as a "Minor Arterial", E Antler Avenue as a "Major Collector", and SE 17th Street as a "Proposed Major Collector". The Eastside Framework Plan shows a general street grid, but it does not identify specific street classifications. Furthermore, the Eastside Framework Plan identifies "Public Space" corridors.

As depicted on the Master Development Plan Exhibit, the Master Development Plan, plans for all transportation elements that are identified on the TSP, and the majority of the features of the Eastside Framework Plan. The one deviation between the planned street grid and the street grid that is noted on the EFP is the connection of SE Forest Avenue to SE 9th Street. The reason for this deviation (lack of connection) is because, through the design and development of the City's SE 9th Street Eastside Arterial Project, additional connection to SE 9th Street (including the connection noted on the Eastside Framework Plan) have been removed (by the City). City Staff has informed the Applicant that a connection to SE 9th Street south of SE Evergreen Avenue will not be authorized.

The proposal plans for improvements along Hwy 126 in accordance with ODOT requirements, including a pedestrian walkway along Hwy 126 and a single lane roundabout at the SE 17th Street / Hwy 126 intersection. Arterial street improvements are planned along SE 9th Street, and Collector Street Improvements are planned along E Antler Avenue and SE 17th Street. Furthermore, the project plans for a well-connected grid of local streets, and trails as described on the Eastside Framework Plan.

In addition to the features depicted on the long term plans, the Master Development Plan includes a mix of internal streets, bicycle routes, sidewalks, and trails that conform the City of Redmond spacing and design standards. The transportation system connects to Hwy 126 at 2 points (the existing SE 9th Street and the planned SE 17th Street). Two connections to SE 9th Street (to the west) are planned, at SE Evergreen Avenue and SE Antler Avenue. Two connections are planned to SE Antler Avenue (to the north), and 4 connections are planned to NW 17th Street (to the east), E Antler Avenue, SE Evergreen Avenue, SE Forest Avenue, and SE Glacier Avenue. The widths, locations, and designs depicted on the Master Development Plan are consistent with City of Redmond design standards for local, collector, and arterial streets. Furthermore, bicycle routes are proposed higher order streets, and sidewalks are proposed along all local street rights-of way, in conformance with City street design standards. As designed, each of the transportation components of the Master Development Plan connect to a broader system, which connects to the remainder of the City as prescribed in the EFP, thus in conformance with this standard. Public improvements will occur with subsequent development Subdivision or Site Plan Review.

b. *Housing*. A mix of housing types and densities should be integrated into the design of new neighborhoods.

Applicant Response: The subject property does not contain any lands that are zoned for Residential uses or planned for Residential uses on the EFP; therefore the plan does not need to provide for any housing. Also, it is noted that housing is allowed in the C-4A Zone and it is expected that some of the C-4A zoned land in the Master Development Plan may be developed with Residential uses. The C-4A Zoned area on the plans is located near the center of the property and near SE 9th Street, a major arterial that is adjacent to the site. The locations of the planned zones and the potential for Residential uses on the C-4A Zoned land has been thoroughly considered and integrated into the site in a useful and

efficient manner. While not required, the area of potential Residential use conforms to this provision.

c. ***Open spaces, greenways, recreation*. All new neighborhoods shall provide useable open spaces with recreation amenities that are integrated to the larger community. Central parks and plazas shall be used to create public gathering places. Incorporate significant geological features such as rock outcroppings, stands of clustered native trees, etc. into the design of new neighborhoods. Neighborhood and community parks shall be shown in appropriate locations consistent with policies in Redmond's Parks Master Plan.**

Applicant Response: While the Eastside Framework Plan, included a rectangular area that appears to have been a park on the subject property, this area was previously zoned OSPR. With the 2020 Comprehensive Plan Update, the City determined that a park is not needed in this area and this OSPR designated area was removed from the subject property. Aside from the noted open space element, the Eastside Framework Plan identifies linear Public Spaces, one that traverses the subject property in a north/south orientation and one that traverses the property in an east/west orientation.

As detailed on the Plan Set, the proposed Master Development Plan includes linear Public Spaces that will be 50 feet wide and contain multi-use paths along SE 13th Street and a relocated (to the south) east/west Public Space, along Hwy 126. The planned open spaces and multi-use trails are depicted on the Master Development Plan and noted in the planned cross sections. Given that only the linear open spaces are needed on the subject property and given the fact that the Master Development Plan provides for linear open spaces, the design conforms to this provision.

d. ***Integrated design elements*. Streets, civic spaces, signage, and architecture shall be coordinated to establish a coherent and distinct character for the Master Development Plan. Plans may integrate design themes with adjacent developed or planned areas.**

Applicant Response: The location of streets, parks and civic spaces are detailed on the Master Development Plan Exhibit. Furthermore, be a large lot / industrial / business park theme is planned to be used throughout the development. Colors are anticipated to be mild and sustainable designs will be encouraged, through the use of CC&Rs. Furthermore, development will encourage the preservation and integration of significant vegetation where practical (to be reviewed with subsequent Subdivision and/or Site Plan review), as will the maintenance of views where practical and the preservation of resources. In an effort for a consistent theme, signage is planned to be coordinated and correlated to a general architectural theme, to be finalized with future development applications (Subdivision or Site Plan). Furthermore, the developer will encourage the

enhancement of usable areas, open spaces, and providing art where practical for the Commercial and Industrial use areas.

The planned design features will be incorporated into CC&Rs and will be recorded with Subdivisions and/or Site Plan applications, prior to development, which will provide a distinct and coherent character, as required by this section.

The way that the area is planned to be developed has been established by the City through the Comprehensive Plan and the Eastside Framework Plan. The referenced long-range planning documents establish zones, use areas, densities, amenities and transportation systems that result in fully integrated planning areas. The currently proposed Master Development Plan is consistent with the adopted long range plans.

In addition to the design, the proposal will extend water and sewer facilities, along with all franchise utilities to and throughout the site. By extending all required utilities and facilities to and through the property in a manner that is consistent with the adopted long range plans (Comprehensive Plan and Eastside Framework Plan), the proposal will sufficiently integrate them into the surrounding area. As planned, the proposal is fully integrated to adopted plans and known developments, thus in conformance with the standards of this section.

e. *Diverse mix of activities*. A variety of uses is encouraged in order to create vitality and bring many activities of daily living within walking and biking distance or a short drive of homes.

Applicant Response: The proposed Master Development Plan accommodates "Employment lands" and is consistent with the Eastside Framework Plan, which establishes an intent for the following activities on the property:

- The property is planned for a mix of Commercial and Industrial uses.
- NW 17th Street traverses the property's eastern edge in a north/south orientation and it intersects with Hwy 126.
- A park type "Public Space" is identified.
- Public space is identified as traversing the property in a north/south orientation and extending to the park areas.

As detailed on the Master Development Plan exhibit, the proposal includes the following features that carry out the items referenced on the Eastside Framework Plan:

- The proposal provides a mix of Commercial and Industrial land.
- With the exception of a Forest Avenue connection to SE 9th Street[9], the street grid is generally consistent with the EFP.
- The design includes a Public Space that traverses the site in a north/south orientation.

9 Which is not desired by the City at this time

- The design includes a Public Space that traverses the site in an east/west orientation[10].
- Right-of-way improvements that conform to the City of Redmond Arterial Street and/or ODOT Standards (travel lanes, curbs, walkways, planter strips) are planned along SE 9th Street and Hwy 126. At time of development (Land Division and/or Site Plan as warranted), the improvements will be constructed.
- Right-of-way improvements that conform to the City of Redmond Collector Street standards (travel lanes, curbs, walkways, planter strips) are planned along SE 17th Street. At time of development (Land Division and/or Site Plan as warranted), the improvements will be constructed.
- Internal grid and non-grid streets improvements that conform to the City of Redmond Street standards (travel lanes, curbs, walkways, planter strips) are planned along the internal streets. At time of development (Land Division and/or Site Plan as warranted), the improvements will be constructed.
- Trails are planned along 13th Street and Hwy 126.
- Water is planned to be provided to and through the site in conformance with City Standards.
- Wastewater is planned to be provided to and through the site in conformance with City Standards.

The couple areas of deviation include 1) a central park area is not planned within the Master Development Plan Area and 2) SE Forest Avenue does not extend through to connect to SE 9th Street to the east.

The reason for the park deviation is due to the fact that the Park and Open Space Zone has been removed from the site, a City recognition that parks are more appropriately located in Residential and/or Commercial areas (rather than a primarily Industrial area); in locations where nearby residents and/or patrons (in more compact spaces) can use park open spaces areas. Industrial uses are typically larger size and have fewer employees, on larger units of land. Access to park areas from Industrial Zoned land would require greater distances of travel for fewer people, and would be an inefficient use of land.

Regarding the residential uses that can occur on the C-4A Zoned land, these are likely to be higher density multi-family complexes. The Redmond Development Code requires that multi-family complexes provide for 15% open space or 3,000 sf, whichever is greater (RDC 8.3035.E.9). As such, open space would be provided for residents in the area, if developed for that use.

Overall, providing park and/or open space in this area would be an inefficient use of land in this Master Development Plan; parks and open spaces will be provided for residents and/or more efficiently located (near higher density uses) in other parts of the City.

10 Rather than internal, this is located along the southern edge of the property.

Regarding a SE 9th Street connection south of SE Evergreen Avenue, while this is shown on the Eastside Framework Plan, through the design and development of the SE 9th Street Eastside Arterial Project, additional connection to SE 9th Street (including the connection noted on the Eastside Framework Plan) have been removed (by the City). City Staff has informed the Applicant that a connection south of SE 9th Street will not be authorized.

As detailed above, the proposal complies with the all of the notes and the overall intent of the Eastside Framework Plan, given that planned uses and City changes that have occurred since 2008; therefore the proposal complies with this section. The project is generally consistent with the Eastside Framework Plan and the Comprehensive Plan in terms of providing a specific mix of activities; the proposed mix of uses conforms to the standards of this section.

f. *Public art or Artistic Feature*. Places for the installation of public art or artistic feature is required to provide focal points, preferably, at the gateways to neighborhoods, in and around the center of neighborhoods, or trailheads.

Applicant Response: The proposal identifies potential public art locations at 4 locations:

- SE 15th Street / SE Antler Avenue
- SE 9th Street / SE Evergreen Avenue
- SE 9th Street / Hwy 126
- SE 17th Street / Hwy 126

Public art details will be finalized with subsequent development applications (Subdivision and/or Site Plan).

g. *Scenic views*. Identify and preserve scenic views and corridors of the Cascade Range, Ochoco Mountains, and Smith Rock. Streets and common or public open spaces should be located and oriented to capture and preserve scenic views for the public. Minimize visual clutter within scenic corridors.

Applicant Response: The subject property does not contain any adopted view corridors or view restrictions. As detailed on the Plan Set, the design extends 3 internal streets in an east/west orientation, to the edges of the property. These street connections will provide mountain view corridors throughout the property, at a size and scale, and at locations that are appropriate for a development of this size.

The proposed design conforms to these provisions to a reasonable extent.

h. *Urban – Rural Interface*. Urban development shall interface with rural areas through open space buffers at

least 100 feet wide and the length of the urban development, excluding public streets, or shall be transitioned from higher density development to lower density development at the urban - rural interface, or utilize other appropriate and equivalent transitional elements.

Applicant Response: While the portions of the overall EFP may be at the urban-rural interface, the subject property is not. The property is surrounded by lands that are within the City of Redmond Urban Growth Boundary and City Limits and the proposal carries out the desired land uses of the EFP. The proposal is consistent to the text of this section to the extent applicable.

i. ***Pocket parks/tot lots.*** **Fully developed "pocket parks" or "tot lots" shall be incorporated into medium and high density zoned residential subdivisions and site plans. These areas shall be developed for every twenty-five lots/units, a minimum of 3,000 square feet and privately maintained. Examples of amenities include: turf areas, benches, deciduous shade trees, irrigation, shrubs, natural or decorative features, and adequate trash receptable(s) and lighting.**

Applicant Response: The property and Master Development Plan area do not include any areas that are zoned for medium or high density residential; therefore pocket parks are not required or relevant to this review.

j. ***Canal trails*****. If canals or laterals are present, multi-use trails at least 10 feet wide shall be provided, subject to the Central Oregon Irrigation District's review and approval. Pedestrian amenities such as benches and trash receptacles shall be provided at appropriate locations (e.g., every 500 feet, at trailheads or intersections with public streets).**

Applicant Response: There are no canals on the subject property and the proposal extends sidewalks, bike lanes and/or trails to the edges of the property. The proposal plans for bicycle and pedestrian facilities that are consistent with the EFP, therefore the proposal is consistent with this text.

k. ***Green Design*****. Energy-efficient design through solar access setbacks, xeriscaping, and planting of drought-resistant trees to minimize water usage and provide shade.**

Applicant Response: This section generally applies to site development elements. The proposal includes Master Development Plan themes and concepts that are included as Exhibits to this application. Future building designs and/or site designs will be reviewed for conformance to Development Code requirements, which will implement this provision.

D. *Implementation*. Upon approval of a Master Development Plan, all subsequent development located within the area master plan boundaries shall be consistent with the approved master plan.

Applicant Response: The applicant understands that subsequent development applications will be required to be consistent with the approved Master Development Plan. In future land use submittals (the applicant anticipates Subdivisions and Site Plans), both of which will be designed to be in conformance with the Master Development Plan.

E. *Amendment/Modification to Master Development Plan.* Any modifications to the approved master development plan shall be subject to the standards and procedures in Article II, "Modifications", and subject to the review criteria contained in this section.

Applicant Response: This is a provision that would apply to future amendments and/or modifications. The Applicant understands this provision, however it does not apply at this time.

F. *Expiration of Master Development Plan*. An approved Master Development Plan or Partial Master Development Plan shall be subject to the requirements of Section 8.1605 of this Code concerning expiration, unless a specific timeline is approved through the land use review process.

Applicant Response: The applicant understands the approval timeframes that are prescribed in the Redmond Development Code. The applicant intends to initiate development as quickly as possible, subsequent to approval.

SUPPLEMENTARY PROVISIONS

8.0305 Establishment of Clear Vision Areas…
8.0340 Fences…

Applicant Response: The proposal is for a Master Development Plan, a Comprehensive Plan Map Amendment and a Zone Change. Site specific development is not proposed at this time. Clear vision areas, along with fence standards apply to site specific development; therefore these sections do not apply to the current proposal, but instead will be reviewed in association with subsequent development applications.

8.0385 Neighborhood Meeting.

1. *Purpose and Intent*. The purpose of the neighborhood meeting is to provide a forum for the applicant, surrounding neighbors, and interested members of the community to meet and consider a proposed land use application, and to discuss issues/concerns regarding the proposal prior to application submittal. Neighborhood meetings encourage citizen participation early in the development process, and an opportunity to revise the land use application to address the issues prior to application submittal.

Applicant Response: This section establishes a purpose. It does not contain any measurable development standards or approval criteria.

2. *Applicability*. Neighborhood meetings are encouraged prior to submitting any land use application. The following application types or development proposals shall be subject to the neighborhood meeting requirements:

A. Master Development Plans.

B. Residential or mixed use development proposals that generate 200 or more daily trip ends, or 20 or more p.m. peak hour trip ends, where a Transportation Impact Analysis (TIA) is required.

C. Wireless and Broadcast Communications Facilities.

Applicant Response: The application includes a Master Development Plan; therefore a Neighborhood Meeting is required. The applicant held a meeting on Monday July 21, 2025.

3. *Requirements and Procedures*. The neighborhood meeting must be held after a predevelopment meeting with City Staff, but before submittal of a land use application. The applicant shall be required to hold only one meeting prior to submitting an application for a specific site but may hold more if desired. If the development proposal is revised after the neighborhood meeting, and a major modification is requested, a second neighborhood meeting with a new notice shall be required before the revised application is submitted.

A. *Location and Time*. Neighborhood meetings shall be held in person at a location in reasonable proximity to the subject site. The meeting shall be held at a location open to the public., City Staff, and at a facility that is ADA accessible. The meeting shall be held on a weekday evening, or weekends at any reasonable time. Applicants may provide a virtual component for participants to join in the meeting. The virtual component shall not be done in lieu of the inperson requirements. ADA accommodations when requested by attendee must be provided.

Applicant Response: The meetings were held at the Hayden Homes office, 250 SE Timber Avenue, Redmond, OR 97756, which is approximately 1.25 miles from the development site and conforms to the requirement of this section.

B. ***Notice – Mail*. Mailed notice of the meeting shall be provided by the applicant to the neighboring property owners (within 750 feet outside city limits and 250 feet within city limits) and the Community Development Department between ten and 30 calendar days prior to the meeting. Notices must be sent first class and shall include the date, time, and location of the meeting, as well as a brief description of the development proposal and property location. The description shall take into consideration information provided by City staff at the pre-development meeting, include project contact information, a copy of the tax map or a GIS map that clearly identifies the location of the proposed development, and a conceptual site plan.**

Applicant Response: As detailed on the attached Exhibits, notice in accordance with the requirements of this section was mailed at least 10 days prior to the meeting. The notice was mailed to 9 property owners, which included all property owners within 750 feet of the subject properties, as established in DIAL – Deschutes County Records. The notice included the date, time, and location of the meeting, as well as a description of the proposal and the property location. The notice was completed as prescribed in this section.

C. ***Notice – Signage*. The applicant shall also post notice of the neighborhood meeting on the subject site or on an access easement to the site within clear view of a public street at least seven days in advance of the meeting. The sign must display the meeting date, time, and address as well as project contact information.**

Applicant Response: Notice for the meeting was posted on the site on July 9, 2025. As detailed on the attached Exhibit, the notice included meeting date, time, and address as well as project contact information. The provided notice conforms to the requirements of this section.

D. ***Meeting Requirements*. The developer must provide a sign-in sheet for attendees to provide their name, address, telephone number, and email address. At the meeting, the applicant shall provide a conceptual site plan and describe the major elements of the proposal. Depending on the type and scale of the particular application, the applicant should be prepared to discuss proposed land uses and densities; traffic impacts; proposed building size and height; proposed access and parking; and proposed landscaping, buffering and/or protection of natural resources as applicable. Attendees will have an opportunity to speak at the meeting and may identify any issues that they believe should be addressed. If no one arrives within 30 minutes of the scheduled start**

time for the meeting, the applicant may close the meeting and this requirement will be considered met upon the applicant's submittal of the documentation to that effect.

Applicant Response: The sign-in sheet, along with meeting materials that were presented at the meetings are included as Exhibits. As detailed in Exhibits, the applicant showed a conceptual plan and described the major elements of the proposal. Furthermore, the applicant discussed land uses and densities; traffic impacts; conceptual building sizes and heights; access and parking; and landscaping, buffering and/or protection of natural resources as applicable. The sole attendee was provided the opportunity to speak at the meeting.

E. ***Materials Submitted with Application*****. The neighborhood meeting notes that identify the major points discussed about the development, list of parties notified, signed affidavits of mailing and posting notices, copies of all materials provided by the applicant, and a signature sheet of attendees shall be included with the development application upon submittal.**

Applicant response: All elements described in this section are included as an Exhibit to this submittal.

F. ***Validity Period*****. The land use application shall be submitted to the City within 180 days of the neighborhood meeting. If an application is not submitted in this timeframe, the applicant shall be required to hold a new neighborhood meeting.**

Applicant Response: The meeting was held on July 21, 2025 and this application is being submitted in February 2026. While the application is not being submitted within 180 days of the Neighborhood Meeting, the applicant has corresponded with the sole attendee of the meeting, thus anticipates that another meeting will not be needed.

G. ***Denial*****. Failure of the applicant to hold a neighborhood meeting in accordance with these provisions prior to submittal of a land use application shall result in an incomplete application and the application may be rejected.**

Applicant Response: As detailed in the attached Exhibits, the application conducted a Neighborhood Meeting as required by the Code; therefore this section does not apply.

OFF-STREET PARKING & LOADING REQUIREMENTS

8.0500 Off-Street Parking…

Applicant Response: The proposal is for a Master Development Plan, a Comprehensive Plan Map Amendment and a Zone Change. Site specific development is not proposed at

this time. Parking standards apply to development, therefore this section does not apply to the current proposal, but instead will be reviewed in association with subsequent development applications.

AMENDMENTS

8.0750 Authorization to Initiate Amendments. An amendment to the text of this chapter (Redmond Development Code), to the Comprehensive Plan, or an amendment to the Comprehensive Plan Map may be initiated by City Council, Planning Commission, or Community Development Director. A property owner may initiate a request for a map or text amendment by filing an application with the Community Development Department.

Applicant Response: The property owner has initiated a request for a map amendment to slightly modify the amount of C-4A (adding 12.5 acres) and dividing the Industrial zoned land into a mix of M-1 and M-2, instead of just having M-1 on the subject property. In association with this application, the applicant has submitted the appropriate forms, thus has complied with this section.

8.0760 Criteria for Amendments. The burden of proof is upon the applicant. The applicant shall show the proposed change is:

1. In conformity with all applicable State statutes;

Applicant Response: This criterion only applies to the applicant's proposal change the amount and location of the C-4A, M-1 and M-2 designated lands; this section does not apply the Master Development Plan element of the submittal. As they relate to Land Use proceedings, State Statutes (Oregon Revised Statutes - ORS) are carried out through rules (Oregon Administrative Rules –OAR) which are developed by the Department of Land Conservation and Development (DLCD). Local jurisdictions (including the City of Redmond) develop a land use planning program based upon the adopted OARs. Local land use planning programs include the development and maintenance of a Comprehensive Plan, along with implementing ordinances, such as zoning ordinances, procedures, and land division ordinances, along with Public Facilities Plans and other implementing documents and provisions. DLCD reviews all Comprehensive Plans and implementing ordinances, and "acknowledges" those that are consistent with the OAR and Statewide Planning Goals. The City of Redmond has an "acknowledged" Comprehensive Plan, along with "acknowledged" implementing ordinances (including the Development Code). The current project is being reviewed for compliance with the acknowledged Comprehensive Plan, as implemented through the adopted and acknowledged Development Code; therefore conformity with applicable state statutes is achieved.

City of Redmond Code standards (the Amendment provisions of sections 8.0750 to 8.0770, along with the procedural elements of 8.1010 through 8.1035, and 8.1300 through 8.1380) were developed in compliance with the applicable State Statutes regarding noticing and public hearings. The applicability of the Statewide Planning Goals is

addressed in greater detail below. It is anticipated by the applicant that notice of the proposed amendment will be provided to DLCD and all required public hearings will be noticed in the local newspaper (public notice) as required by the City of Redmond Code, as well as the applicable State Statutes.

With regard to the statutory public hearing requirements, the proposal is subject to Sections 8.1300 through 8.1380 of the Redmond Development Code. These sections implement the quasi-judicial statutory requirements and are anticipated to be followed by the City through the review of the Map Amendment portion of the application. It is further anticipated that the Planning Commission and City Council's public hearing and review processes will conform to the statutory requirements for the purpose of the review.

Should the City or any party to the record suggest that a State Statute directly applies to the proposal, the applicant will further respond.

2. In conformity with the State-wide planning goals whenever they are determined to be applicable;

Applicant Response: There are 19 Statewide Planning Goals that express Oregon's land use priorities. Each local government throughout Oregon, including the City of Redmond, must adopt a comprehensive plan to implement these Statewide Planning Goals. The City of Redmond has an adopted and acknowledged Comprehensive Plan, and as detailed below, the proposed Comprehensive Plan Map Amendment and Zoning Map Amendment conform to all applicable policies of the Comprehensive Plan. Additionally, the City of Redmond has adopted other local land use regulations, including the Redmond Development Code and Public Facility Plans that have been developed to implement the policies of the Comprehensive Plan. As documented throughout this Burden of Proof narrative, the proposal conforms to all applicable approval criteria of the Development Code and the proposal is consistent with the relevant policies of the Comprehensive Plan; therefore the proposal is consistent with the relevant Statewide Planning Goals.

After consultation with the City of Redmond Planning Staff, the applicant understands that of the 19 Statewide Planning goals, Goals 1, 2, 9, 11, and 12 are relevant for discussion in this Comprehensive Plan Map Amendment and Zoning Map Amendment proposal. All other goals have been determined to either not apply to this application, or are clearly satisfied through the City's acknowledged Comprehensive Plan, local land use regulations, and/or functional plans.

Goal 1 - Citizen Involvement, "To develop a citizen involvement program that insures the opportunity for citizens to be involved in all phases of the planning process."

Applicant Response: A discussion of Goal 1 is relevant because the proposal includes a planning review; thus ensuring the opportunity for citizen involvement is necessary. Conformance with Goal 1 is achieved in the City of Redmond through *Chapter 1 - Citizen*

Involvement of the Redmond Comprehensive Plan and through the implementation procedures that have been adopted in the Redmond Development Code. Chapter 1 of the Comprehensive Plan identifies the Redmond Planning Commission as the official Citizen Involvement Committee for the City. The Redmond City Council, upon the recommendation of the Planning Commission, adopted the procedures in the Development Code, and those procedures have been acknowledged by the Land Conservation and Development Commission (LCDC). The adopted Development Code contains provisions to ensure an appropriate level of citizen involvement is achieved; in this case, in addition to a Neighborhood Meeting, hearings before both the Planning Commission and the City Council are required. The applicant expects that the Development Code's adopted citizen involvement procedures will be followed in the City's review of this application.

Citizen involvement is ensured via Development Code adopted notification and review procedures, including the pre-submittal Neighborhood Meeting and post-submittal Public Hearings; subject to the notice requirements of the Development Code. The Public Hearing notification procedures ensure that citizens are informed in three different ways about the public hearings: published notice, posted notice, and individual mailed notice. The notices inform citizens about the hearings and indicate that all interested parties may participate by submitting written or verbal testimony. The applicant submitted the required application and fees, and understands that public hearings, before the Planning Commission and the City Council, will be noticed and held in conformance with the public involvement procedures in the Redmond Development Code. The procedures in the adopted Development Code ensure conformity with Statewide Planning Goal 1.

Goal 2 – Land Use Planning, "To establish a land use planning process and policy framework as a basis for all decision and actions related to use of land and to assure an adequate factual base for such decisions and actions."

Applicant Response: A discussion of Goal 2 is relevant because the proposal includes a land use planning application, which must be based on a factual basis.

The proposal includes a plan to amend the Comprehensive Plan Map and Zoning Map, resulting in the following acreages on the subject property.

GROSS ZONING HISTORY & COMPARISON TABLE

ZONE DESIGNATION	EASTSIDE FRAMEWORK PLAN (ESFP)	REDMOND 2040 COMP PLAN	PROPOSED ZONING
C2 - CENTRAL BUSINESS DISTRICT COMMERCIAL	26.92 - AC	0.00 - AC	0.00 - AC
C4A - LIMITED SERVICE COMMERCIAL	22.98 - AC *	41.94 - AC	50.71 - AC
M1 - LIGHT INDUSTRIAL	144.04 - AC	162.62 - AC	85.76 - AC
M2 - HEAVY INDUSTRIAL	0.00 - AC*	0.00 - AC	68.09 - AC
PUB - PUBLIC SPACE	10.62 - AC**	0.00 - AC	0.00 - AC
TOTAL:	204.56 - AC	204.56 - AC	204.56 - AC

NOTES:

* - ADDITIONAL 12.5 ACRES OF C4A ON ADJACENT PARCEL TO NE IDENTIFIED IN EASTSIDE FRAMEWORK PLAN, CURRENTLY ZONED AS M-2. ADDITIONAL 18.3 ACRES OF M-2 ON ADJACENT PARCEL TO THE NW IDENTIFIED ON EASTSIDE FRAMEWORK PLAN, CURRENTLY ZONED M-1.

** - EASTSIDE FRAMEWORK PLAN DESIGNATED PUBLIC SPACES ADJACENT TO RIGHT OF WAYS ARE NOT DELINEATED OR INCLUDED IN AREA CALCULATIONS.

The proposal will be reviewed in accordance with the planning processes and policy framework that have been established in the adopted Redmond Development Code (an acknowledged local land use regulation). Because the proposed Comprehensive Plan Map Amendment and Zoning Map Amendment will follow the established local planning process, and it will neither alter the process for administration of the Development Code, nor the acknowledged procedural requirements (which ensure a factual base for all decisions). Therefore, the review will be consistent with Statewide Planning Goal 2.

Goal 3, Agricultural Lands
Goal 4, Forest Lands
Goal 5, Natural Resources, Scenic and Historic Areas, and Open Spaces

Applicant Response: Goals 3, 4, and 5 are not applicable because the subject property is not zoned for agriculture or forest use, and it does not contain any inventoried open spaces, scenic areas, historic resources or natural resources.

Goal 6, Air, Water and Land Resources

Applicant Response: Goal 6 is not directly applicable to the Map Amendment, because the proposed Comprehensive Plan Map Amendment and Zoning Map Amendment only modify the amounts and locations of zones on a map, the proposal will not have any direct impacts on air, water or land resources. Also, air and water quality are regulated by the Oregon Department of Environmental Quality, procedures that fall outside of the local land use review process.

Goal 7, Areas Subject to Natural Hazards
Goal 8, Recreational Needs

Applicant Response: Goals 7 and 8 are not applicable to the proposed Comprehensive Plan Map Amendment and Zoning Map Amendment because the subject property is neither within an identified natural hazard area, nor within an area identified for recreational use.

Goal 9 – Economic Development, "To provide adequate opportunities throughout the state for a variety of economic activities vital to the health, welfare, and prosperity of Oregon's citizens."

Applicant Response: This proposal includes a refinement to Employment lands, in order to facilitate and entitle a 204.56 acre property, so that it can provide for economic development. The Comprehensive Plan Map Amendment and Zone Change will add 12.5 acres of Commercial Zoned land (and decrease in the amount of Industrial Zoned Land of an equivalent amount) and it will provide a mix of Light (M-1) and Heavy (M-2) Industrial Land, instead of M-1 only. The proposal will place Commercial lands closer to existing development in the City, the City's Eastside Arterial, and density in generally. Furthermore, the amendment will allow for greater diversity in Industrial uses in the area, by adding M-2 lands to the development area.

All of the existing and planned zones are economic development ("Employment") zones. The planned configuration adds Commercial zoned lands (which the City EOA identifies as being at a deficit), only sacrificing Industrial Zone land (which the EOA identifies as being at a surplus). Furthermore, the planned configuration places the C-4A Zoned lands in locations where they are efficient and can be developed in the near-term, in an orderly fashion. Also, introducing the M-2 Zone into the site allows for a greater variety of Industrial uses, which, when combined with the associated Master Development Plan, will provide for timely and orderly development, and accommodate current market demands.

The planned changes provide for efficient urban style development, accommodating an associated Master Development Plan that the applicant is ready to execute; the planned Map Amendments will allow for the realization of the economic potential of the subject property. Additional steps for development of the site include the associated Master Development Plan, in addition to future Subdivision(s) and Site Plan Review(s). The proposal and associated steps will ultimately result in efficient development occurring on the site; development that is generally consistent with the Eastside Framework Plan. For the aforementioned reasons, the proposal will improve economic opportunities to the City in conformance with this goal.

Ultimately, the proposal will improve economic opportunities on the property and in the City, which will contribute to economic development consistent with Goal 9.

Goal 10 – Housing, "To provide for the housing needs of Citizens of the state."

Applicant Response: Goal 10 is not relevant because the property does not contain any lands that are designated for residential or housing purposes.

Goal 11- Public Facilities and Services, "To plan and develop a timely, orderly and efficient arrangement of public facilities and services to serve as a framework for urban and rural development."

Applicant Response: OAR 660-11 implements Goal 11, and notes, "Cities or counties shall develop and adopt a public facility plan for areas within an urban growth boundary containing a population greater than 2,500 persons…" The City of Redmond exceeds 2,500 people and has adopted water, wastewater, and transportation master plans. The City PFPs detail long-range infrastructure needs, along with a path to completion and financing mechanisms. The water and sewer extensions that are planned with the associated Master Development Plan (which includes the map amendments) are consistent with the City PFPs.

Collectively, the adopted local land use regulations (PFPs, the Development Code, and City Standards and Specification) provide a framework that ensures that timely, orderly, and efficient arrangement of public facilities and services are achieved throughout the City. The adopted provisions establish that needed public facilities improvements are made concurrent with development. Because the Map Amendments maintain the same amount of Employment land with mostly the same acreages (Commercial and Industrial), the planned improvements will be consistent with the City PFPs, additional improvements or right-of-way dedications are not needed at this time. Ensuring conformance with the adopted Development Code regulations will provide consistency with Goal 11.

Goal 12 – Transportation, "To provide and encourage a safe, convenient and economic transportation system."

Applicant Response: Goal 12 is implemented through the Transportation Planning Rule and OAR 660-12-0060, in addition to local land use regulations. As detailed in the Traffic Report, the changed zones only impact employment lands, and maintain similar acreages of Commercial and Industrial Lands. As detailed in the Traffic report, with the planned improvement, the proposal will adequately mitigate impacts to the transportation facilities and the proposal is consistent with the TPR. Furthermore, the current proposal includes a Traffic Impact Study, detailed findings of which are included in the attachment (also discussed immediately above).

Goal 13 – Energy Conservation, "To conserve energy."

Applicant Response: Goal 13 is not directly applicable because the proposed Comprehensive Plan Map Amendment and Zoning Map Amendment will not have any direct impacts on energy. This Goal encourages efficient use of lands. Through the Comprehensive Plan and the Eastside Framework Plan, the City of Redmond has determined how land will be most efficiently used in the area. The proposal is generally consistent with the Comprehensive Plan and the Eastside Framework Plan, thus the proposal conforms to this Goal to the extent applicable at this time. A complete review the applicable Comprehensive Plan provisions are included below.

Goal 14 – Urbanization - To provide for an orderly and efficient transition from rural to urban land use, to accommodate urban population and urban employment inside urban growth boundaries, to ensure efficient use of land, and to provide for livable communities.

Applicant Response: Goal 14 applies the creation and/or expansion of Urban Growth Boundaries. The property subject to the current application is located within the City of Redmond Urban Growth Boundary; the current proposal will only slightly change the location and acreages of Commercial and Industrial lands; all land will continue to be Employment land. Because the proposal will not alter the area of the UGB, and it conforms to the uses intended by the City (Employment), through the Eastside Framework Plan, this Goal is not relevant to the current review.

Goal 15 – Willamette River Greenway
Goal 16 – Estuarine Resources
Goal 17 – Costal Shorelands
Goal 18 – Beaches and Dunes
Goal 19 – Ocean Resources

Applicant Response: Goals 15-19 are not applicable to the proposed Comprehensive Plan Map Amendment and Zoning Map Amendment because the subject property is not within or contain the Willamette River Greenway, an Estuary, a Coastal Shoreland, a Beach, a Dune, or an Ocean.

3. In conformity with the Redmond Comprehensive Plan, land use requirements and policies; and

Applicant Response: Applicant has reviewed past land use decisions and consulted with the Redmond Planning Department in the design of the project and the preparation of this application, including the identification of the relevant Comprehensive Plan Policies. As described below, the proposed Comprehensive Plan Map Amendment and Zoning Map Amendment conforms to all relevant Comprehensive Plan policies. This section does not apply the Master Development Plan element of the submittal. In the event that Staff or another interested party believes that additional policies, goals, or overview sections are relevant, the Applicant will supplement the record with written documentation of conformance, as needed.

Relevant sections of the Comprehensive Plan are denoted in blue font below.

Statewide Planning Goal 1 – Citizen Involvement

GOALS AND POLICIES

GOAL 1 ENGAGEMENT

Develop and maintain a comprehensive community engagement and public information program that ensures the opportunity for the

community to be informed and involved in all phases of the planning process.

POLICY 1-1-1 Establish and maintain a citizen involvement program to provide for widespread citizen involvement that involves a representative cross-section of community members.

a) The City shall assign the Redmond Urban Area Planning Commission as its officially recognized Committee for Citizen Involvement (CCI) and

Applicant Response: The applicant has submitted for a Map Amendment and anticipates that the application will include hearings before the Planning Commission and the City Council, as prescribed by the Development Code. An application that is processed in accordance with the procedures of the Development Code, including all required public hearings will be consistent with this policy.

Statewide Planning Goal 2 – Land Use Planning and Procedures.

GOALS AND POLICIES

GOAL 1 COORDINATION
Ensure that Redmond's Comprehensive Plan, implementation tools, and administration procedures build on the community's vision for the future and align with regional, state, and federal plans and regulations.

POLICY 2-1-2 Maintain a Plan and associated implementation tools consistent with the Oregon Statewide Planning Goals and all other applicable state and federal regulations.

Applicant Response: A review of the Map Amendment's consistency with Oregon Statewide Planning Goals and other applicable state regulations was addressed above. As detailed therein, the proposal is entirely consistent with Oregon Planning Goals and other regulations that implement Oregon's Planning program. Furthermore, it is understood that the state and local laws were written to be consistent with federal regulations; therefore, the proposal (being consistent with state and local regulations) is also consistent with any applicable federal regulations.

POLICY 2-1-6 Maintain a Plan that designates a range of land uses based on findings with respect to:

- **Natural resource capacity and environmental quality;**
- **Projected population and economic growth;**
- **Location, capacity and level of services;**
- **Existing land use patterns;**
- **Projected land use and community needs; and**
- **Energy conservation and resources.**

Applicant Response: The proposal slightly alters the size and location of Commercial and Industrial zones on the property. The proposal does not modify the amount of Employment land within the City, and the locations of the C-4A, M-1 and M-2 areas are

generally consistent with the original designation (envisioned in the Eastside Framework Plan). The proposal only modifies the locations to align with the proposed Master Development Plan design, which will allow for an efficient street layout, design, and general aesthetic of the development. The proposal does not alter impacts to natural resource capacity or environmental quality of the site, it does not change the carrying capacity of the land, thus will accommodate the same population. Furthermore, the planned design integrates with the existing and planned land use pattern (as described in the EFP), it will accommodate community land needs, and it will not alter the potential impacts to energy or resources. The proposed amendment is consistent with this policy.

POLICY 2-1-7 Identify and assign land uses in a way that encourages the best relationship between places where people live, work, shop and recreate.

Applicant Response: The proposal slightly alters the size and location of Commercial and Industrial zones and it will slightly change the manner in which land uses are laid out. The planned zone changes maintain the same amount of Employment land in the City and slightly relocates the Commercial and Industrial lands in order to allow for a more efficient design, one that can respond to the development patterns in the City, current market demands, and long term public improvement requirement. The proposal does not impact any residential lands, but does add and relocate C-4A Zoned lands (wherein residential development is allowed). The relocated area is on the west side of the site, near the SE 9th Street Eastside Arterial improvements. Furthermore, the design includes substantial open space and walkway elements (along SE 13th Street and Hwy 126), which are consistent with the Comprehensive Plan and Eastside Framework Plan. The proposed design is consistent with this policy.

STATEWIDE PLANNING GOAL 5 - OPEN SPACES, SCENIC AND HISTORIC AREAS, AND NATURAL RESOURCES

GOALS AND POLICIES

GOAL 1 OPEN SPACE RESOURCES
Conserve open space and protect natural and scenic resources.

Applicant Response: The Map Amendments that are proposed are minor and do not impact any protected open spaces or scenic resources. The proposed Map Amendments are consistent with the Goals and Policies of this section.

STATEWIDE PLANNING GOAL 6 - AIR, WATER AND LAND RESOURCES QUALITY

GOALS AND POLICIES

GOAL 2 IMPROVE QUALITY
Improve the quality of air, water and land resources.

POLICY 6-2-3 Ensure compatibility between land uses by separating and buffering pollutant emitting land uses and sensitive populations through land use designation, zoning and site design.

Applicant Response: The proposal maintains the property for Employment purposes (C-4A, M-1 and M-2), the proposal slightly alters the sizes and the locations of the Commercial and Industrial areas. The C-4A Zoned area has been relocated to be near to the City's Eastside Arterial (SE 9th Street) improvements, and near other Commercial and established urban uses in the City. Light and Heavy Industrial areas are planned to be situated to the east, with the M-2 zone (heavier industrial uses) farther to the east. The proposed design does not significantly change the net acreage of any of Commercial or Industrial zones on the property. Given the fact that the lands are designated for Employment uses and the planned amendments retain land for Employment uses, the design maintains compatibility throughout the area, and will not introduce any new pollutant emitting uses.

STATEWIDE PLANNING GOAL 8

RECREATIONAL NEEDS

GOALS AND POLICIES

GOAL 2 SECURE LANDS FOR THE FUTURE
Redmond provides a comprehensive system of parks, natural resource areas and recreation amenities that serves current and future needs…

Applicant Response: The proposed Map Amendment does not alter or modify any land that is planned or designated for park use on the Comprehensive Plan. The proposal is consistent with the policies of this section.

STATEWIDE PLANNING GOAL 9
ECONOMIC DEVELOPMENT

GOAL 1 LAND SUPPLY

The City will plan for a 20-year supply of suitable commercial and industrial land on sites with a variety of characteristics (e.g., site sizes, locations, visibility, and other characteristics).

POLICY 9-1-1 Provide for an adequate supply of commercial and industrial land to accommodate the types and amount of economic development and growth anticipated in the future, as described in the City's most recent Economic Opportunities Analysis. The supply of commercial and industrial land should provide a range of site sizes and locations to accommodate the market needs of a variety of commercial and industrial employment uses. Some commercial development should occur in newly master planned residential neighborhoods.

a) Identify land to rezone (and re-designate) to provide for an adequate supply of commercial and industrial land and make efficient use of land. Some of land to rezone will likely be in the UH-10 zone on the west side of Redmond (consistent with Objective 9-1-1b).

b) As part of the City's master planning process, identify commercial

and employment land in or near to newly developing neighborhoods to provide opportunities for commercial employment centers, retail, and services to develop near new residential development. Areas in the UH-10 zone where the City may want to zone for Mixed-Use development include along the Highway 126 Corridor between 35th Street and Helmholtz.

Applicant Response: The City included an EOA as part of the 2020 Comprehensive Plan update. While that document is extensive (attached), the following text from the document is most relevant to this policy, as it related to the proposed Map Amendments:

5. Land Sufficiency and Conclusions

This chapter presents conclusions about Redmond's employment land sufficiency for the 2020- 2040 period. The chapter then concludes with a discussion about Redmond's land base and its ability to accommodate growth over the next 20 years, as well as recommendations for the City to consider, ensuring it meets its economic growth needs throughout the planning period.

Land Sufficiency

Exhibit 22 shows commercial and industrial land sufficiency within the Redmond UGB. It shows:

- **Vacant unconstrained land** from Exhibit 17 within the UGB. Exhibit 22 shows that Redmond has 1,298 gross acres of industrial land and 257 gross acres of commercial land.
- **Demand for commercial and industrial land** from Exhibit 11. Exhibit 22 shows Redmond will need a total of 411 gross acres for industrial uses and 415 gross acres for commercial uses over the 2020-2040 period.

  Exhibit 22 shows that Redmond has:

  - An 888-acre surplus of industrial land.
  - A 159-acre deficit of commercial land.

Exhibit 22. Comparison of the Capacity of Unconstrained Vacant Land with Employment Land Demand by Land Use Type, Redmond UGB, 2020-2040

Land Use Type	Land Supply (Suitable Gross Acres)	Land Demand (Gross Acres)	Land Sufficiency (Deficit)
Industrial	1,298	411	888
Commercial	257	415	(159)
Retail Commercial		*114*	
Office & Commercial Services		*302*	
Total	1,555	826	729

Source: ECONorthwest

The target industries identified are a combination of manufacturing businesses, commercial office businesses, and retail and commercial services for residents and visitors (see Potential Growth Industries). The site needs generally show that these businesses in Redmond will need sites of 25

acres or smaller, with some need for sites of 25 to 100 acres for large industrial uses or business parks (see Site Needs for Potential Growth Industries).

Exhibit 18 shows that Redmond has 27 sites (253 acres) of sites from 5 to 20 acres. About two- thirds of these sites are commercial. Redmond has 4 sites (154 acres) that are between 20 and 50 acres in size, three quarters of which are commercial. Redmond has two sites (889 acres) in sites larger than 50 acres, all of which is industrial. Redmond also has about 1,300 acres of land in the UH-10 where commercial services and office development could locate, as part of a master plan. In addition, the South Highway 97 Corridor Project development of a vibrant business district that accessible by car, bus, bike, or on foot. The area provides redevelopment opportunities for new commercial development.

Some businesses will need sites smaller than 5 acres for development. Redmond has 162 sites smaller than 5 acres (260 acres). In addition, development of sites larger than 5 acres is likely to result in parcelization of some sites into smaller sites. Redmond has a limited number of industrial sites, especially those that are development-ready, smaller than 5 acres.

Based on this information and the analysis in Exhibit 22, we conclude that Redmond has enough land within the UGB to accommodate development of expected growth within the UGB.

The Key takeaways from this report are that 1) Industrial lands are not split into "heavy" or "light" in this overall assessment, 2) the City has a surplus of Industrial lands and 3) the City has a deficit of Commercial lands. As detailed on the attached materials, the proposal will increase the amount of Commercial Zoned land (C-4A) by 12.5 acres, which is nearly the same as identified on the Eastside Framework Plan. Furthermore, rather than providing only M-1 zoned land, the design will include a mix of M-1 (Light Industrial) and M-2 (Heavy Industrial) zoned industrial land. This split provides the opportunity for a greater variety of allowed uses and was based upon a market assessment of current needs in the City. Given that the EOA does not specify the desired/intended mix of M-1 and M-2 Zoned industrial land and further because the increase to the amount of Commercial land will reduce the deficit of Commercial Lands in the City (while still allowing for a surplus of Industrial lands), the proposed map amendments are consistent with the EOA and this Comprehensive Plan policy.

POLICY 9-1-2 Provide for an adequate short-term supply of suitable commercial and industrial land to respond to economic development opportunities as they arise.
"Short-term supply" means suitable land that is ready for construction usually within one year of an application for a building permit or request for service extension…

STATEWIDE PLANNING GOAL 10
HOUSING

GOALS AND POLICIES

GOAL 1 LAND AVAILABILITY
Plan for a 20-year supply of suitable land for Redmond to meet housing needs within the existing urban growth boundary.

Applicant Response: The proposed map amendment will alter the size and location of Commercial and Industrial zoned lands. The proposal will not impact any lands that are planned to accommodate Redmond's housing needs.

STATEWIDE PLANNING GOAL 13

ENERGY CONSERVATION

GOALS AND POLICIES

POLICY 13-1-2 Locate land use activities with adequate density and intensity so as to reduce energy-consuming travel and development patterns.

Applicant Response: The proposal will sightly alter the size and locations of Commercial and Industrial Zoned lands. The proposed changes are relatively minor, the C-4A Zoned area is planned along the newly improved higher order street (SE 9th Street / Eastside Arterial) and the Industrial Zoned land changes will provide the opportunity for a greater variety of allow uses, increasing allowed intensity as the zoning areas approach the east side of the property. As designed, the density and/or potential alterations to energy consuming travel and/or development patterns will only slightly be modified. The proposal is consistent with these Goals and Policies.

STATEWIDE PLANNING GOAL 11

PUBLIC FACILITIES AND SERVICES

GOALS AND POLICIES
GOAL 1 LEVEL OF SERVICE
Provide public facilities, services and private utility systems at levels necessary and suitable for existing and proposed uses.

POLICY 11-1-1 Ensure development within the Redmond UGB is subsequent to or concurrent with the provision of an adequate level of public facilities and services and complies with utility and facility plans intended to serve the area.

Applicant Response: The subject property is within the UGB and the planned Map Amendments are within an area that includes a Master Development Plan. As part of the associated Master Development Plan, the applicant has assessed all public facilities and services. As detailed throughout this narrative, public facilities and services that are planned with the associated Master Development Plan are adequate to accommodate the anticipated development, as such, they are also sufficient to accommodate the minor Map Amendments.

STATEWIDE PLANNING GOAL 12

GOALS AND POLICIES

GOAL 1 ECONOMIC DEVELOPMENT

Provide a safe and efficient transportation network to complement key economic development priority areas, the comprehensive plan, recreational needs, and adopted state, regional and local plans and policies…

Applicant Response: As detailed on the submitted materials, the proposed Map Amendment will allow for development to occur as prescribed in the Eastside Framework Plan and the TSP. The application is supported by a TPR Analysis, along with a TIA for an associated Master Development Plan. As detailed in the TPR Analysis (and the TIA for the Master Development Plan), the proposed design and planned mitigation will provide a sufficient transportation system.

As detailed in in the traffic element of the submittal, a series of appropriately timed mitigations will allow for a safe and efficient transportation network. The noted improvements are not all needed due to the Map Amendments, however they are needed for a Master Development Plan, which includes the Map Amendments. As such, implementing the transportation improvements noted above and included in the detailed traffic report, along with future development's (Subdivision or Site Plan) conformance with Code standards will ensure consistency with the policies and goals of this chapter.

STATEWIDE PLANNING GOAL 13

ENERGY CONSERVATION

GOALS AND POLICIES

GOAL 1 EFFICIENCY

Advance the efficient use of resources in the built environment

POLICY 13-1-2 Locate land use activities with adequate density and intensity so as to reduce energy-consuming travel and development patterns.

Applicant Response: The most significant change of the Map Amendment element of this proposal is to relocated the C-4A Zoned area to the west side of the site. Providing this zone, at this location is efficient because it will place the Commercial area (which is more heavily used) along the SE 9th Street / Eastside Arterial roadway. Rather than placing this (more intensely used) area internal to the site (as noted on the current Comprehensive Plan) or along Hwy 126 (as noted on the Eastside Framework Plan / where access would be limited. The relocated Commercial zone (as proposed), places the higher intensity use area (the C-4A Zone) in an location that is well served with infrastructure, nearer to more dense development of the City, and potentially other modes of transportation. The proposed Map Amendment design improves the location of the C-4A Zone and it allow for a Master Development Plan that transitions, from Commercial to lower intensity Industrial, to higher intensity Industrial, from west to east. The resized and relocated zones are consistent with this policy.

STATEWIDE PLANNING GOAL 14

URBANIZATION

GOALS AND POLICIES

GOAL 1 GROWTH MANAGEMENT
Guide growth and development in a manner that implements the Redmond 2040 Vision.

POLICY 14-1-1 Promote the efficient use of land, including appropriate in-fill, redevelopment and new development. Encourage the city to grow its existing neighborhoods, amenities, town center and industrial areas into one connected well planned city.

Applicant Response: The proposal only impacts Employment land and the proposed changes will allow for efficient development of the site, generally consistent with the Eastside Framework Plan. Carrying out the design elements of the EFP, the overall project (including the Map Amendments) will adequately connect with the surrounding area and the proposed Map Amendments are consistent with these Goals and Policies.

4. That there is a change of circumstances, further studies justifying the amendment or mistake in the original zoning.

Applicant Response: The reason for the Map Amendments is because Watson Development has acquired the land and has established a comprehensive set of plans to implement the Eastside Framework Plan, based upon current market trends and land supply needs. Given the topography of the site, the necessary street and walkway layouts, the water and sewer design, desired use types, and intent to move the Commercial Zone (with the potential for mixed-use and/or residential uses) nearer to existing urban development, improvements and amenities, the proposed design is the best fit for timely and comprehensive development. While the original design (identified in the Eastside Framework Plan and the Comprehensive Plan) was a high level assessment, the current project is more granular, detailed, and responsive to current market demands. The process of thoroughly assessing a property and developing it with product types of to meet current market demands, constitutes a change of circumstances, which is sufficient for compliance with this approval criterion.

8.0765 Tentative Approval. Based on the facts presented at the hearing and the recommendation of the Planning Commission, if the Hearings Body determines that the applicant has met all applicable criteria for the proposed change, the Hearings Body shall give tentative approval of the proposed change. Such approval shall include any conditions, stipulations or limitations which the Hearings Body determines to be necessary to meet the criteria. An appeal of the Hearings Body's decision shall be processed and decided in the manner provided for in Article II of these standards. Upon completion of hearings process, the council shall, by order, effect the zone reclassification of the property. Provided, however, if the applicant fails to

abide by the conditions attached to the rezoning the Council may, at a later date, rezone the affected property to its original zoning by order.

Applicant Response: The applicant understands the procedural provisions established in this section.

8.0770 Public Hearing on Amendments. If a map change is initiated by the Planning Commission or City Council, or if an amendment to the text of these standards is to be considered, the City Council shall hold a public hearing on the proposed change. Notice of the hearing shall be published in a newspaper of general circulation in the City the week prior to the hearing. Before establishing a map change, the Council shall make findings that the proposed change meets the criteria set forth in Section 8.0760. Any change affected under this section shall be by ordinance.

Applicant Response: The current request has been initiated by a private landowner, not the Planning Commission or the City Council, therefore this section does not apply.

8.0775 Limitations on Re-Applications. No application of a property owner for an amendment to the text of these standards or to the zoning map shall be considered by the Hearings Body within the six month period immediately following a previous denial application; if in the opinion of the Hearings Body, new evidence or a change of circumstances warrant it, however, the Hearings Body may permit a new application.

Applicant Response: The applicant understands the procedural provisions established in this section.

VI. Summary and Conclusion:

Based on the discussion above as well as the exhibits included with this application, the applicant has documented that the proposal conforms to the applicable approval criteria for a Master Development Plan, a Comprehensive Plan Map Amendment and Zoning Map Amendment. Because the proposal conforms to all applicable criteria and standards, the applicant respectfully requests that the City approve the Master Development Plan, Comprehensive Plan Map Amendment and Zoning Map Amendment as proposed.

ATTACHMENT C

Landon Stevens

From: Christy,Deanna L (BPA) - TERR-REDMOND <dlshoemaker@bpa.gov>
Sent: Tuesday, April 21, 2026 7:15 AM
To: Jamie Buddenbohn; David Pilling; Tom Mooney; ddowning@coid.org; lwooderson@cec.coop; Joshua Wedding; Alex Sabin; donna.herman@cngc.com; david.j.sims@usps.gov; AHart3@republicservices.com; fred.lelacheur@rsandh.com; odotr4planmgr@odot.oregon.gov; ccdrailcrossinglur@odot.oregon.gov; Leslie,Brent C (BPA) - TERR-THE DALLES; MOREHOUSE Donald
Cc: Landon Stevens; Kyle Roberts; Fuller,Luci N (CONTR) - TERR-REDMOND
Subject: RE: REVIEW:

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Thank you. BPA has no comments as this does not presently affect us.

Deanna Christy
BONNEVILLE POWER ADMINISTRATION
DEPARTMENT OF ENERGY
Realty Specialist | Real Property | TERR-Redmond
dlshoemaker@bpa.gov | 541 516-3258 | 541 213-1801

From: Jamie Buddenbohn <jamie.buddenbohn@redmondoregon.gov>
Sent: Monday, April 20, 2026 2:49 PM
To: David Pilling <David.Pilling@redmondoregon.gov>; Tom Mooney <Tom.Mooney@redmondfireandrescue.org>; ddowning@coid.org; lwooderson@cec.coop; Joshua Wedding <Joshua.Wedding@redmondoregon.gov>; Alex Sabin <alex.sabin@redmondoregon.gov>; donna.herman@cngc.com; david.j.sims@usps.gov; AHart3@republicservices.com; fred.lelacheur@rsandh.com; odotr4planmgr@odot.oregon.gov; ccdrailcrossinglur@odot.oregon.gov; Leslie,Brent C (BPA) - TERR-THE DALLES <bcleslie@bpa.gov>; Christy,Deanna L (BPA) - TERR-REDMOND <dlshoemaker@bpa.gov>; MOREHOUSE Donald <donald.morehouse@odot.oregon.gov>
Cc: Landon Stevens <landon.stevens@redmondoregon.gov>; Kyle Roberts <kyle.roberts@redmondoregon.gov>
Subject: REVIEW:

Dear Reviewer(s),

The Redmond Planning Division has received an application that is ready for your review. Please see the SharePoint link for the project below:

SharePoint Link: Redmond East Gateway

Project #/ Name: 711-26-000038-PLNG (PA1) & 711-26-000039-PLNG (MD) | Redmond East Gateway
Applicant/Owner: Redmond East Gateway, LLC / Watson Development

Request:	Zoning Map Amendment and Master Development Plan
Location:	901 E Hwy 126 & No Situs Address, Redmond, OR 97756
Tax Lot Number(s):	1513150000101 & 1513150000102
Zone	M-1 & C4-A
Applicable Criteria:	Redmond Code, Chapter 8 Developmental Regulations, Article I – Zoning Standards; Article II – Land Use Procedures
Staff Contact:	Landon Stevens – 541.504.3044 or landon.stevens@redmondoregon.gov

Please email comments by **May 5th, 2026** and any questions to the Long Range Planner, Landon Stevens (cc'd in email).

We look forward to your comments.

Thank you,

Jamie

Jamie Buddenbohn | City of Redmond
Planning Permit Coordinator

phone **541.504.3059**
email **jamie.buddenbohn@redmondoregon.gov**

411 SW 9th Street Redmond, Oregon 97756

WWW.REDMONDOREGON.GOV

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Messages to and from this email address may be subject to Oregon Public Records Law.

Landon Stevens

From: Alex Sabin
Sent: Tuesday, April 21, 2026 7:02 AM
To: Landon Stevens
Subject: RE: REVIEW:

No comments from Building.

ALEX SABIN
Building Official | LEED®Green Associate
City of Redmond

phone 541-923-7764
email alex.sabin@redmondoregon.gov
411 SW 9th St. Redmond, OR 97756

WWW.REDMONDOREGON.GOV

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DISCLOSURE NOTICE:
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From: Jamie Buddenbohn <jamie.buddenbohn@redmondoregon.gov>
Sent: Monday, April 20, 2026 2:49 PM
To: David Pilling <David.Pilling@redmondoregon.gov>; Tom Mooney <Tom.Mooney@redmondfireandrescue.org>; ddowning@coid.org; lwooderson@cec.coop; Joshua Wedding <Joshua.Wedding@redmondoregon.gov>; Alex Sabin <alex.sabin@redmondoregon.gov>; donna.herman@cngc.com; david.j.sims@usps.gov; AHart3@republicservices.com; fred.lelacheur@rsandh.com; odotr4planmgr@odot.oregon.gov; ccdrailcrossinglur@odot.oregon.gov; bcleslie@bpa.gov; Shoemaker,Deanna L (BPA) - TERR-REDMOND <dlshoemaker@bpa.gov>; MOREHOUSE Donald <donald.morehouse@odot.oregon.gov>
Cc: Landon Stevens <landon.stevens@redmondoregon.gov>; Kyle Roberts <kyle.roberts@redmondoregon.gov>
Subject: REVIEW:

Dear Reviewer(s),

The Redmond Planning Division has received an application that is ready for your review. Please see the SharePoint link for the project below:

SharePoint Link: Redmond East Gateway

Project #/ Name: 711-26-000038-PLNG (PA1) & 711-26-000039-PLNG (MD) | Redmond East Gateway

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Staff Contact:	Landon Stevens – 541.504.3044 or landon.stevens@redmondoregon.gov

Please email comments by **May 5th, 2026** and any questions to the Long Range Planner, Landon Stevens (cc'd in email).

We look forward to your comments.

Thank you,

Jamie

Jamie Buddenbohn | City of Redmond
Planning Permit Coordinator

phone **541.504.3059**
email jamie.buddenbohn@redmondoregon.gov

411 SW 9th Street Redmond, Oregon 97756

WWW.REDMONDOREGON.GOV

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Landon Stevens

From: Tracy Terrall <tterrall@coid.org>
Sent: Friday, April 24, 2026 11:23 AM
To: Landon Stevens
Cc: Kelley O'Rourke
Subject: COID Comments on 711-26-000038-PLNG (PA1) & 711-26-000039-PLNG (MD) | Redmond East Gateway

[EXTERNAL]: This email originated from outside of the City. Do not click links or open attachments unless you

April 24, 2026

Sent Via Email Only

Re: 711-26-000038-PLNG (PA1) & 711-26-000039-PLNG (MD) | Redmond East Gateway
Tax Lot(s) #: 1513000000131 & 1513150000102
901 E Hwy 126 & No Situs Address, Redmond, OR 97756

Please be advised that Central Oregon Irrigation District (COID) has reviewed the application received on April 20, 2026, for the above reference project located at 901 E Hwy 126 & No Situs Address, Redmond, OR 97756 tax lot(s): 1513000000131 & 1513150000102. The applicant is requesting Zoning Map Amendment and Master Development Plan. COID has no facilities or water rights on the subject property. COID's E-Lateral and its associated infrastructure is near the scope of the project, to the West where it crosses HWY 126 near Jackson St. If the project requires modification to roadways or utilities affecting this lateral, COID requests review of those plans for approval.

Central Oregon Irrigation District

Tracy Terrall | Development Review Specialist
Central Oregon Irrigation District |1055 SW Lake Court Redmond, OR 97756 |541.504.7577

REDMOND FIRE & RESCUE

341 NW Dogwood Avenue, Redmond, OR 97756
Phone: (541) 504-5000 Fax: (541) 526-1254
www.rdmfire.org

April 21, 2026

Landon Stevens
Long Range Planner
City of Redmond
411 SW 9th Street
Redmond, OR 97756

Re: 711-26-000038-PLNG (PA1) & 711-26-000039-PLNG (MD) | Redmond East Gateway
Tax Lot ID: 1513150000101 & 1513150000102

Dear Landon,

Thank you for the opportunity to review the proposed site plan surrounding the above-named development project. These notes are provided regarding the plans received April 20, 2026 and are based on the current New Construction Guide. There may be more or less requirements needed based upon the final project design, however, Redmond Fire & Rescue will endorse this proposal predicated on the following criteria and conditions of approval.

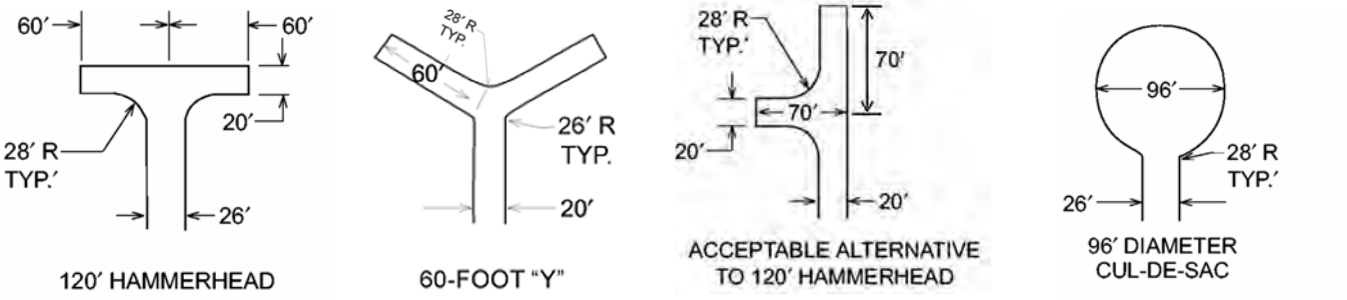
FIRE APPARATUS ACCESS:

1. **FIRE APPARATUS ACCESS ROADS:** Access roads shall be provided for every facility, building, or portion of a building hereafter constructed or moved into or within the jurisdiction. Access roads are not required to be modified for commercial buildings that undergo a change in occupancy, change in use, or conversion from agricultural or equine exempt to non-exempt unless there is a change to the structure's square footage or building footprint. (OFC 503.1.1)

   While access roads are noted, access raods to buildings to buildings shall be provided.

2. **FIRE ACCESS ROAD DISTANCE FROM BUILDINGS:** The access shall extend to within 150 feet of all portions of the exterior wall of the first story of the building as measured by an approved route around the exterior of the building or facility. (OFC 503.1.1)

3. **DEAD ENDS AND ROADS IN EXCESS OF 150 FEET (TURNAROUNDS):** Dead end fire apparatus access roads or roads in excess of 150 feet in length shall be provided with an approved turnaround. Diagrams of approved turnarounds are shown below: (OFC 503.2.5 & Figure D103.1)



If any dead end areas are proposed with any building construction in the future, they shall meet the above requirements. Cul-de-sace shall be 96 feet wide.

4. **ADDITIONAL ACCESS:** The fire code official is authorized to require more than one fire apparatus access road based on the potential for impairment for a single road by vehicle congestion, condition of terrain, climatic conditions or others factors that could limit access. (OFC 503.1.2)

5. **ADDITIONAL ACCESS ROADS – COMMERCIAL/INDUSTRIAL HEIGHT:** Buildings exceeding 30 feet in height or three stories in height shall have at least two separate means of fire apparatus access. (D104.1)

   If any proposed buildings will exceed 30 feet in height this requirement will need to be met.

6. **ADDITIONAL ACCESS ROADS – COMMERCIAL/INDUSTRIAL SQUARE FOOTAGE:** Buildings or facilities having a gross building area of more than 62,000 square feet shall have at least two approved separate means of fire apparatus access. Exception: Projects having a gross building area of up to 124,000 square feet that have a single approved fire apparatus access road when all buildings are equipped throughout with approved automatic sprinkler systems. (OFC D104.2)

7. **AERIAL FIRE APPARATUS ROADS:** Buildings with a vertical distance between the grade plane and the highest roof surface that exceeds 30 feet in height shall be provided with a fire apparatus access road constructed for use by aerial apparatus with an unobstructed driving surface width of not less than 26 feet. For the purposes of this section, the highest roof surface shall be determined by measurement to the eave of a pitched roof, the intersection of the roof to the exterior wall, or the top of the parapet walls, whichever is greater. Any portion of the building may be used for this measurement, provided that it is accessible to firefighters and is capable of supporting ground ladder placement. (OFC D105.1, D105.2)

   If any building requires aerial apparatus access this requirement must be met.

8. **AERIAL APPARATUS OPERATIONS:** At least one of the required aerial access routes shall be located within a minimum of 15 feet and a maximum of 30 feet from the building and shall be positioned parallel to one entire side of the building. The side of the building on which the aerial access road is positioned shall be approved by the Fire Marshal. Overhead utility and

power lines shall not be located over the aerial access road or between the aerial access road and the building. (D105.3, D105.4)

If any building requires aerial apparatus access this requirement must be met.

9. **MULTIPLE ACCESS ROADS SEPARATION:** Where two access roads are required, they shall be placed a distance apart equal to not less than one half of the length of the maximum overall diagonal dimension of the area to be served (as identified by the Fire Marshal), measured in a straight line between accesses. (OFC D104.3)

   If any building requires aerial apparatus access this requirement must be met.

10. **FIRE APPARATUS ACCESS ROAD WIDTH AND VERTICAL CLEARANCE:** Fire apparatus access roads shall have an unobstructed driving surface width of not less than 20 feet (26 feet adjacent to fire hydrants (OFC D103.1)) and an unobstructed vertical clearance of not less than 13 feet 6 inches. (OFC 503.2.1 & D103.1)

    If any building requires aerial apparatus access this requirement is required.

11. **NO PARKING SIGNS:** Where fire apparatus roadways are not of sufficient width to accommodate parked vehicles and 20 feet of unobstructed driving surface, "No Parking" signs shall be installed on one or both sides of the roadway and in turnarounds as needed. Signs shall read "NO PARKING - FIRE LANE" and shall be installed with a clear space above grade level of 7 feet. Signs shall be 12 inches wide by 18 inches high and shall have red letters on a white reflective background. (OFC D103.6)

    May be required in certain areas.

12. **NO PARKING:** Parking on emergency access roads shall be as follows (OFC D103.6.1-2):
    1. 20-26 feet road width – no parking on either side of roadway
    2. 26-32 feet road width – parking is allowed on one side
    3. Greater than 32 feet road width – parking is not restricted

    Note: For specific widths and parking allowances, contact the local municipality.

    May be required in certain areas.

13. **PAINTED CURBS:** Where required, fire apparatus access roadway curbs shall be painted red (or as approved) and marked "NO PARKING FIRE LANE" at 25-foot intervals. Lettering shall have a stroke of not less than one inch wide by six inches high. Lettering shall be white on red background (or as approved). (OFC 503.3)

    May be required in certain areas.

14. **FIRE APPARATUS ACCESS ROADS WITH FIRE HYDRANTS:** Where a fire hydrant is located on a fire apparatus access road, the minimum road width shall be 26 feet and shall extend 20 feet before and after the point of the hydrant. (OFC D103.1)

15. **SURFACE AND LOAD CAPACITIES:** Fire apparatus access roads shall be of an all-weather surface that is easily distinguishable from the surrounding area and is capable of

supporting not less than 75,000 pounds live load (gross vehicle weight). Documentation from a registered engineer that the final construction is in accordance with approved plans, or the requirements of the Fire Code may be requested. (OFC 503.2.3)

16. **TURNING RADIUS:** The inside turning radius and outside turning radius shall not be less than 30 feet and 50 feet respectively, measured from the same center point. (OFC 503.2.4 & D103.3)

    Will need to show apparatus tracking through the building sites. Utilize a WB-40.

17. **ACCESS ROAD GRADE:** Fire apparatus access roadway grades shall not exceed 10%. Alternate methods and materials may be available at the discretion of the Fire Marshal (for grade exceeding 10%). (OFC 503.2.7)

18. **ANGLE OF APPROACH/GRADE FOR TURNAROUNDS:** Turnarounds shall be as flat as possible and have a maximum of 5% grade with the exception of crowning for water run-off. (OFC 503.2.7 & D103.2)

19. **ANGLE OF APPROACH/GRADE FOR INTERSECTIONS:** Intersections shall be level (maximum 5%) with the exception of crowning for water run-off. (OFC 503.2.7 & D103.2)

20. **AERIAL APPARATUS OPERATING GRADES:** Portions of aerial apparatus roads that will be used for aerial operations shall be as flat as possible. Front to rear and side to side maximum slope shall not exceed 10%.

21. **GATES:** Gates securing fire apparatus roads shall comply with all of the following criteria: (OFC D103.5, and 503.6):

    1. Where a single gate is provided, the gate width shall be not less than 20 feet. Where a fire apparatus road consists of a divided roadway, the gate width shall be not less than 12 feet.
    2. Gates shall be of the horizontal swing, horizontal slide, vertical lift or vertical pivot type.
    3. Construction of gates shall be of materials that allow manual operation by one person.
    4. Gate components shall be maintained in an operative condition at all times and replaced or repaired when defective.
    5. Electric gates shall be equipped with a means of opening the gate by fire department personnel for emergency access. Emergency opening devices shall be approved by the fire code official.
    6. Methods of locking shall be submitted for approval by the fire code official.
    7. Electric gate openers, where provided, shall be listed in accordance with UL 325.
    8. Gates intended for automatic operation shall be designed, constructed and installed to comply with the requirements of ASTM F2200.
    9. Electric gates shall be equipped with a red fire access box equipped with a micro switch, MMTC Knox Box w/ Microswitch Fire Access Station KNX-2. The access box shall be secured using a model 3782 Knox exterior padlock with a 2" shackle.

Note: Gates are not allowed on secondary access roads.

22. **BOLLARDS:** Where secondary fire access roads are required, they shall be secured utilizing a removable bollard. The *fire code official* is authorized to require the installation and maintenance of gates or other *approved* barricades across fire apparatus access roads,

trails or other accessways, not including public streets, alleys or highways. The MaxiForce Removable Bollard MRRW-RS1-R, MRRW-RS2-R, MRSW-SS1-R, MRSW-SS2-R and MRSW-SS3-R are approved for use. maxiforcebollards.com (OFC 503.5)
May be required

23. **ACCESS DURING CONSTRUCTION:** Approved fire apparatus access roadways shall be installed and operational prior to any combustible construction or storage of combustible materials on the site. Temporary address signage shall also be provided during construction. (OFC 3307.1 and 505.1)

24. **TRAFFIC CALMING DEVICES:** Shall be prohibited on fire access routes unless approved by the Fire Marshal. (OFC 503.4.1).

FIREFIGHTING WATER SUPPLIES:

25. **COMMERCIAL BUILDINGS – REQUIRED FIRE FLOW:** The minimum fire flow and flow duration shall be determined in accordance with OFC Table B105.2. The required fire flow for a building shall not exceed the available GPM in the water delivery system at 20 psi residual. (OFC B105.3)
    Note: OFC B106, Limiting Fire-Flow is also enforced, except for the following:
    - The maximum needed fire flow shall be 3,000 GPM, measured at 20 psi residual pressure.
    - Redmond Fire & Rescue does not adopt Occupancy Hazards Modifiers in section B105.4-B105.4.1

    This will be calculated based upon when buildings are built.

26. **FIRE FLOW WATER AVAILABILITY:** Applicants shall provide documentation of a fire hydrant flow test or flow test modeling of water availability from the local water purveyor if the project includes a new structure or increase in the floor area of an existing structure. Tests shall be conducted from a fire hydrant within 400 feet for commercial projects, or 600 feet for residential development. Flow tests will be accepted if they were performed within 5 years as long as no adverse modifications have been made to the supply system. Water availability information may not be required to be submitted for every project. (OFC Appendix B)

    Modeling of the proposed water system can be provided and testing of area hydrants to determine available fire flow. Flow test data at existing hydrants exceeds 5 years.

27. **WATER SUPPLY DURING CONSTRUCTION:** Approved firefighting water supplies shall be installed and operational prior to any combustible construction or storage of combustible materials on the site. (OFC 3307.2)

FIRE HYDRANTS:

28. **FIRE HYDRANTS – COMMERCIAL BUILDINGS:** Where a portion of the building is more than 400 feet from a hydrant on a fire apparatus access road, as measured in an approved route around the exterior of the building, on-site fire hydrants and mains shall be provided. (OFC 507.5.1)

- This distance may be increased to 600 feet for buildings equipped throughout with an approved automatic sprinkler system.
- The number and distribution of fire hydrants required for commercial structure(s) is based on Table C105.1, following any fire-flow reductions allowed by section B105.3.1. Additional fire hydrants may be required due to spacing and/or section 507.5 of the Oregon Fire Code.

Until buildings are proposed, it is difficult to determine if this requirement will be met.

29. **FIRE HYDRANT(S) PLACEMENT:** Hydrant placement will be based on the following guidelines: (OFC C104)
    - Existing hydrants in the area may be used to meet the required number of hydrants as approved. Hydrants that are up to 600 feet away from the nearest point of a subject building that is protected with fire sprinklers may contribute to the required number of hydrants. (OFC 507.5.1)
    - Hydrants that are separated from the subject building by railroad tracks shall not contribute to the required number of hydrants unless approved by the Fire Marshal.
    - Hydrants that are separated from the subject building by divided highways or freeways shall not contribute to the required number of hydrants. Heavily traveled collector streets may be considered when approved by the Fire Marshal.
    - Hydrants that are accessible only by a bridge shall be acceptable to contribute to the required number of hydrants only if approved by the Fire Marshal.

    Current placement of the public hydrants are acceptable.

30. **PRIVATE FIRE HYDRANT IDENTIFICATION:** Private fire hydrants shall be painted red in color. (OFC 507)

    May be required if requirement 27 & 37 are not met.

31. **FIRE HYDRANT DISTANCE FROM AN ACCESS ROAD:** Fire hydrants shall be located not more than 15 feet from an approved fire apparatus access roadway unless approved by the Fire Marshal. (OFC C102.1)

32. **PHYSICAL PROTECTION:** Where fire hydrants are subject to impact by a motor vehicle, guard posts, bollards or other approved means of protection shall be provided. (OFC 507.5.6 & OFC 312.2)

33. **CLEAR SPACE AROUND FIRE HYDRANTS:** A 3-foot clear space shall be provided around the circumference of fire hydrants. (OFC 507.5.5)

34. **FIRE DEPARTMENT CONNECTION (FDC) LOCATIONS:** FDCs shall be located within 100 feet of a fire hydrant (or as approved). Hydrants and FDC's shall be located on the same side of the fire apparatus access roadway or drive aisle, fully visible, and recognizable from the street or nearest point of the fire department vehicle access or as otherwise approved. (OFC 912.2.1 & NFPA 13)

- Fire department connections (FDCs) shall normally be located remotely and outside of the fall-line of the building when required. FDCs may be mounted on the building they serve, when approved.
- FDCs shall be plumbed on the system side of the check valve when sprinklers are served by underground lines also serving private fire hydrants.

See provided Provate Fire Main Guide for fire vault requirements. Fire vaults shall be located near the main driveway entrance with FDC and a fire hydrant on the same side within 100 feet.

BUILDING ACCESS AND FIRE SERVICE FEATURES

35. **EMERGENCY RESPONDER RADIO COVERAGE:** In new buildings where the design reduces the level of radio coverage for public safety communications systems below minimum performance levels, a distributed antenna system, signal booster, or other method approved by Redmond Fire & Rescue shall be provided. (OFC 510)
    - Emergency responder radio system testing and/or system installation is required for this building. Please contact me (using my contact info below) for further information including an alternate means of compliance that is available. If the alternate method is preferred, it must be requested from Redmond Fire & Rescue prior to issuance of building permit.
    - Testing shall take place after the installation of all roofing systems; exterior walls, glazing and siding/cladding; and all permanent interior walls, partitions, ceilings, and glazing.

    Building specific requirement. Would be required if a building is 50,000 sq ft of larger. A fee in lieu is available.

36. **KNOX BOX:** A Knox Box for building access may be required for structures and gates. See Appendix B for further information and detail on required installations. Order via www.knoxbox.com or contact Redmond Fire & Rescue for assistance and instructions regarding installation and placement. (OFC 506.1)

    Required for any building containing a fire sprinkler or fire alarm system.

37. **FIRE PROTECTION EQUIPMENT IDENTIFICATION:** Rooms containing controls to fire suppression and detection equipment shall be identified as "Fire Control Room." Signage shall have letters with a minimum of 4 inches high with a minimum stroke width of 1/2 inch, and be plainly legible, and contrast with its background. (OFC 509.1)

    Required to be met. See private fire main guide for specific requirements.

38. **PREMISES IDENTIFICATION:** New and existing buildings shall have approved address numbers; building numbers or approved building identification placed in a position that is plainly legible and visible from the street or road fronting the property, including monument signs. These numbers shall contrast with their background. Numbers shall be a minimum of 4 inches high with a minimum stroke width of 1/2 inch. (OFC 505.1)

    Address numbers and suite numbers shall be posted on the building and be visible from the address side of the building.

39. **STREETS**: Streets within Redmond Fire & Rescue's Fire Districts shall align with the established grid system.

    The street labeled at SE Glacier Ave shall be named SE Juniper Ave. The cul-de-sac shall be named SE Juniper Ct.

40. **FIRE EXTINGUISHERS:** Portable fire extinguishers shall be selected, installed and maintained. (OFC 906.2 and NFPA 10)

    Shall be required in every building.

If you have questions or need further clarification, please feel free to contact me at **541-504-5010.**

Sincerely,

Tom Mooney

Tom Mooney
Fire Marshal
Tom.mooney@rdmfire.org

Cc: File

Landon Stevens

From: Jamie Buddenbohn
Sent: Wednesday, April 22, 2026 9:14 AM
To: Landon Stevens
Subject: FW: REVIEW:

Hi Landon,

Please see below.

Thanks,
Jamei

Jamie Buddenbohn | City of Redmond
Planning Permit Coordinator

phone **541.504.3059**
email jamie.buddenbohn@redmondoregon.gov

411 SW 9th Street Redmond, Oregon 97756

WWW.REDMONDOREGON.GOV

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From: CCD Rail Crossing LUR <CCDRailCrossingLUR@odot.oregon.gov>
Sent: Wednesday, April 22, 2026 8:43 AM
To: Jamie Buddenbohn <jamie.buddenbohn@redmondoregon.gov>
Subject: RE: REVIEW:

[EXTERNAL]: This email originated from outside of the City. Do not click links or open attachments unless you

Hi Jamie,

ODOT Rail Crossing does not have any concerns as this location is not within 500 feet of a rail crossing or track. Thank you for the opportunity to review.

Have a good day,

Ruth Price
Rail Crossing Program Coordinator
ODOT | Commerce and Compliance Division
455 Airport Rd SE, Building A | Salem, OR 97301
C: 541-250-6788

From: Jamie Buddenbohn <jamie.buddenbohn@redmondoregon.gov>
Sent: Monday, April 20, 2026 2:49 PM
To: David Pilling <David.Pilling@redmondoregon.gov>; Tom Mooney <Tom.Mooney@redmondfireandrescue.org>; ddowning@coid.org; lwooderson@cec.coop; Joshua Wedding <Joshua.Wedding@redmondoregon.gov>; Alex Sabin <alex.sabin@redmondoregon.gov>; donna.herman@cngc.com; david.j.sims@usps.gov; AHart3@republicservices.com; fred.lelacheur@rsandh.com; ODOT Reg 4 Planning Manager <ODOTR4PLANMGR@odot.oregon.gov>; CCD Rail Crossing LUR <CCDRailCrossingLUR@odot.oregon.gov>; bcleslie@bpa.gov; Shoemaker,Deanna L (BPA) - TERR-REDMOND <dlshoemaker@bpa.gov>; MOREHOUSE Donald <Donald.MOREHOUSE@odot.oregon.gov>
Cc: Landon Stevens <landon.stevens@redmondoregon.gov>; Kyle Roberts <kyle.roberts@redmondoregon.gov>
Subject: REVIEW:

This message was sent from outside the organization. Treat attachments, links and requests with caution. Be conscious of the information you share if you respond.

Dear Reviewer(s),

The Redmond Planning Division has received an application that is ready for your review. Please see the SharePoint link for the project below:

SharePoint Link: Redmond East Gateway

Project #/ Name:	711-26-000038-PLNG (PA1) & 711-26-000039-PLNG (MD) | Redmond East Gateway
Applicant/Owner:	Redmond East Gateway, LLC / Watson Development
Request:	Zoning Map Amendment and Master Development Plan
Location:	901 E Hwy 126 & No Situs Address, Redmond, OR 97756
Tax Lot Number(s):	1513150000101 & 1513150000102
Zone	M-1 & C4-A
Applicable Criteria:	Redmond Code, Chapter 8 Developmental Regulations, Article I – Zoning Standards; Article II – Land Use Procedures
Staff Contact:	Landon Stevens – 541.504.3044 or landon.stevens@redmondoregon.gov

Please email comments by **May 5th, 2026** and any questions to the Long Range Planner, Landon Stevens (cc'd in email).

We look forward to your comments.

Thank you,

Jamie

Jamie Buddenbohn | City of Redmond
Planning Permit Coordinator

phone **541.504.3059**
email jamie.buddenbohn@redmondoregon.gov

411 SW 9th Street Redmond, Oregon 97756

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ATTACHMENT D

No public comments were received by the Planning Division.

ATTACHMENT E

Redmond East Gateway

Master Plan

Transportation Element

December 2024

Prepared by: Transight Consulting, LLC
Engineer of Record: Joe Bessman, PE

PREFACE

The purpose of this report is to address City of Redmond Transportation requirements for the proposed Redmond East Gateway employment master plan. This area comprises nearly half the Senate Bill 1544 lands, which were specifically developed to bring employment opportunities to Central Oregon.

> *"Whereas Oregon needs a reliable supply of large-lot, high-value employment sites to attract investment and create jobs for Oregonians, and to be competitive for employment projects on a regional, national and global scale; and Whereas the City of Redmond contains a developable site of approximately 465 acres that is unique in this state, in that it is a large site that can be served readily with infrastructure, is adjacent to the city's employment and industrial lands, is adjacent to Oregon Route 126 and is close to the Redmond airport; and Whereas the need for the site is of statewide strategic economic development importance; and Whereas development on the site contributes so significantly to the state's economy, job base and ability to provide services that focused regulatory relief is a wise investment;*
>
> *- 2011 Senate Bill 1544*



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EXECUTIVE SUMMARY

This analysis follows development approvals for the 365-acre Senate Bill 1544 (SB1544) site that were obtained in 2012, which rezoned the properties from *Open Space Park Reserve* to support employment opportunities. The lands were modified in 2018 as part of a zoning swap to better position the more developable lands adjacent to existing City streets. The City's 2020 Transportation System Plan assumed that only a small portion of the SB1544 property would develop by 2040, so this analysis was prepared to show the impact of full build-out of the approximately 200-acre portion of the site. Similar to the 2012 analysis, this report highlights the congestion that occurs within the mid-City portions of the US 97 corridor and the need to invest in the parallel 9th Street – Airport Way "eastside arterial" corridor. The City is already advancing these plans, with the design and construction of the missing segment fully funded. This report highlights the need to extend these improvements to the Maple Avenue corridor, with new roundabouts at key connections with the OR 126 corridor and 9th Street as new connections are made.

Full build-out of the Redmond East Gateway ("REG") site will not only provide substantial transportation infrastructure to support the project, but the project will contribute toward Citywide needs with about $19M in Transportation SDC revenue (with full implementation of the City's draft SDC methodology). Together with the planned roundabouts and frontage contributions, these SDC funds can be prioritized to further leverage infrastructure needs along the 9th Street corridor.

As outlined within this report, initial priorities to support the REG development include completion of a multiuse pathway along the OR 126 frontage to access various housing initiatives along its eastern border, extension of Antler Avenue *Collector* streetscape improvements into the property, and the installation of a roundabout at the NE 9th Street/E Antler Avenue intersection, and a roundabout at the SE 9th Street/SE Evergreen Avenue intersection to support access to the initial development phases. Following these projects, additional improvements to major intersections along the NE 9th Street corridor will be needed (at Hemlock and Maple), building on other public and private improvement plans south of OR 126. The REG will also construct the OR 126/Veteran's Way single-lane roundabout when the SE 17th Street *Collector* is extended as the fourth leg of this intersection.

These improvements allow the 9th Street corridor to serve as a parallel route to US 97, helping to mitigate the highway congestion to the extent feasible given the highway's rail, canal, and utility constraints. Adoption of alternative mobility standards for US 97 intersections (as previously agreed between the City and ODOT within Intergovernmental Agreement #28621) should be completed to identify how US 97 congestion will be managed. Long-range planning efforts to support Redmond's east side should consider the feasibility of new "north central" east-west connections or further improvements along the 9th Street Eastside Arterial Project that can better connect the City's industrial, commercial, and residential lands, as well as the fairgrounds and airport.

Multimodal improvements are also planned within the REG that will interconnect the commercial and industrial areas to the OR 126 pathway and the SE 9th Street pathway. These connections will extend a planned system ODOT is constructing as part of its on-going OR 126 pavement preservation project, completing a pathway system that extends west to the US 97 corridor. Transit service is also expected to support this area in the future. Although the new deviated flex system is just starting service within Redmond, further coordination with CET will occur as part of future site plan entitlements as more specific access, layout, and sequencing information is known. Figure EX-1 provides a summary of the mitigation projects, general timing, and funding identified to support the REG.



**NE Maple Avenue / NE 9th Street Pro-Rata costs should be revisited pending actual roundabout costs on the 9th Street Eastside Arterial project.*

Figure EX-1. Summary of Mitigation Needs to Support REG.

SECTION 1. TRANSPORTATION PLANNING RULE COMPLIANCE

The purpose of this section of the report is to document the compliance of the Redmond East Gateway (REG) project with the Transportation Planning Rule (Oregon Administrative Rule 660-012, specifically addressing section -0060 on Plan and Land Use Regulation Amendments). This section of the report shows that rezoning of the property was previously prepared and approved by the City, County, and ODOT, and incorporated into the City's planning and land use assumptions within its 2020 Transportation System Plan. The REG project has proposed modifications to the location of internal zoning districts and requested modifications of the specific acreages.

BACKGROUND

The Redmond East Gateway site is included in the Eastside Framework Plan, which was approved in 2008 and effectively served as an Urban Reserve study in collaboration with Deschutes County. This plan provided a comprehensive land use and public infrastructure plan for the east area of the city. The plan designated the site for a combination of light and heavy industrial zoning, Central Business District Commercial zoning, and public space as shown in Figure 1-1. New roadways in a grid street system are shown within the site that were intended to provide additional connectivity to the surrounding lands and create alternate routes to OR 126 that will help relieve pressure on the City's 9th Street corridor. This planning work was primarily focused on land use rather than specific transportation mitigation, and the specific layout of streets is generally considered to be conceptual. Similar to other City of Redmond Area Plans, no specific transportation analysis was identified with this plan that describes the infrastructure or intersection treatments needed to support urbanization of these properties. This plan was used as a general land use guide within the Senate Bill 1544 work that followed and superseded it.

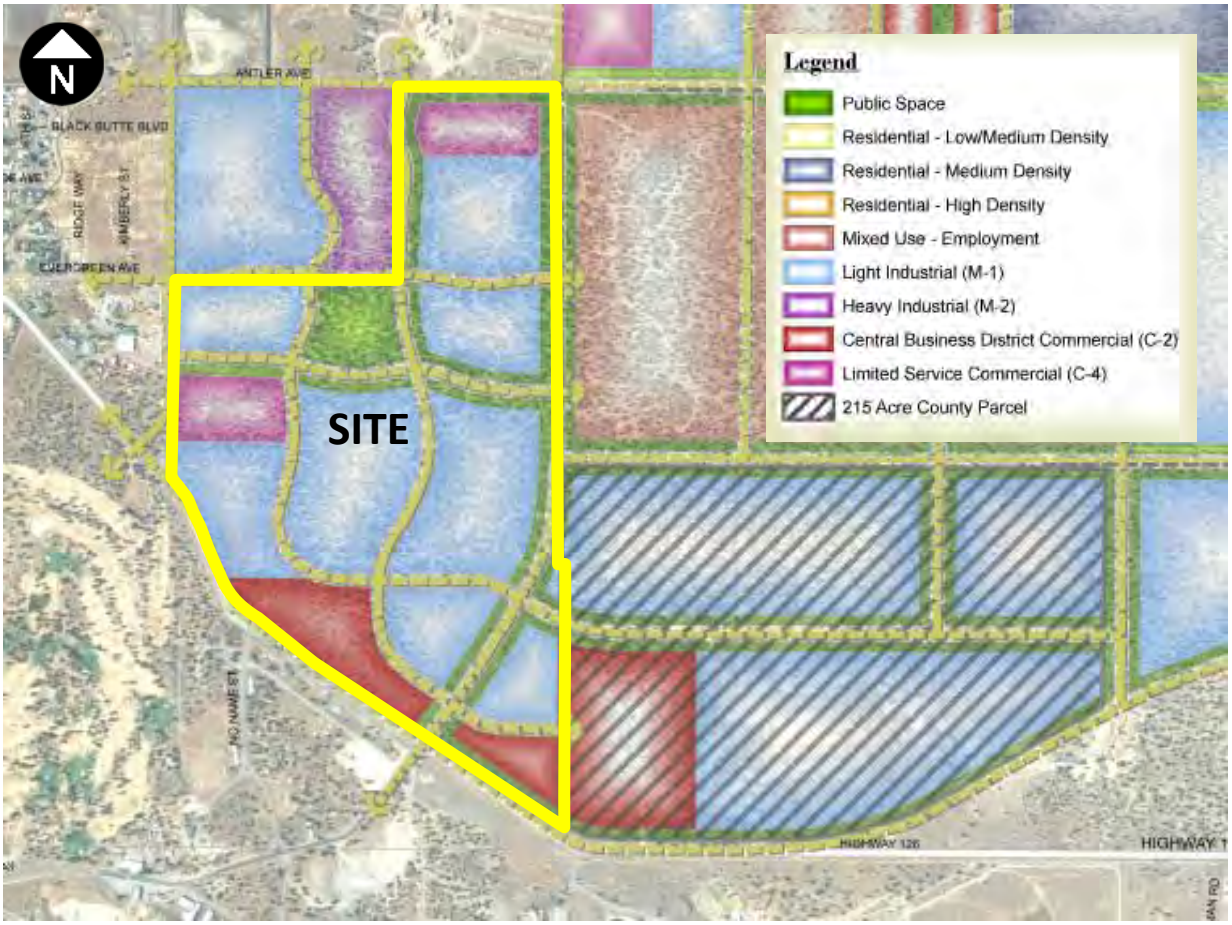


Figure 1-1. City of Redmond Eastside Framework Plan. *Source: City of Redmond.*

The original SB 1544 legislation was intended to support investment in Central Oregon and economic development through the creation of large-lot, high value employment lands. While the Eastside Framework Plan had been approved as a concept, this land retained its Open Space Park Reserve designation. This analysis was prepared specifically to address the provisions of the Senate Bill language related to transportation needs associated with the proposed rezoning of these lands from *Open Space Park Reserve* (OSPR) to *Light Industrial* (M-1) with supporting commercial uses within the City's *Limited Commercial* zoning, building on the vision from the Eastside Framework Plan.

The original traffic study for the SB 1544 lands was submitted to ODOT, Deschutes County, and the City of Redmond on December 28, 2012[1]. The analysis addressed the Transportation Planning Rule for the legislative zone change process to support the employment uses and developed a new limited supporting ("non-anchor") commercial use zoning designation to prevent these lands from developing with large-scale and regionally-attracting commercial anchors. There were no specific development plans known or

[1] *Senate Bill 1544 Transportation Analysis*, December 28, 2012, prepared by Kittelson & Associates, Inc. Engineer of Record: Joseph Bessman, PE.

proposed as part of the application, with this work intended to allow these lands to attract employment uses.

The original analysis was premised on employment assumptions within the City's Economic Opportunities Analysis for the industrial lands and a supplemental economic evaluation prepared by Johnson Reid[2] to support the commercial uses. This identified up to 3,606 light and heavy industrial employees within the property boundary and up to 373,583 square-feet of supporting commercial uses. The commercial uses would serve not just the Senate Bill 1544 lands, but also surrounding lands within the City's *Eastside Framework Plan.*

The Senate Bill 1544 traffic study showed five intersections that were forecast to exceed City of Redmond and/or ODOT performance thresholds with the rezone:

- US 97/Evergreen Avenue;
- US 97/Veterans Way;
- OR 126/Veterans Way;
- OR 126/9th Street; and,
- Airport Way/Veterans Way

The potential mitigation measures identified at these intersections were complicated by rail and utility corridors. While the previously adopted City of Redmond Transportation System Plan (TSP) identified critical north-south and east-west constraints, the identified solution to these issues within the 2008 TSP and the initial planning for these lands was the completion of the Reroute Phase 2, which would have bypassed the south US 97 corridor and portions of the completed northern Reroute section. As noted in the 2008 TSP, this highway project was not considered "reasonably likely" and therefore left east-west and north-south capacity needs unaddressed within the transportation system plan, with partial mitigation provided by the "Westside Arterial" along the Helmholtz Way alignment and other local street extensions.

Given the scale of these larger system needs, the traffic study prepared for the SB 1544 project sought to develop a parallel north-south corridor along the east side of US 97 along the Airport Way – 9th Street alignment. This new connection, along with provision of alternate mobility standards on the US 97 corridor and various minor intersection improvements were accepted as appropriate mitigation for the site impacts, while also providing capacity beyond the needs of the SB 1544 lands and thereby supporting the development of additional eastern Redmond lands. These improvements were coupled with more specific language that would limit the allowable commercial uses within the commercial zoning. The overall recommended solution from SB 1544 is illustrated in Figure 1-2.

[2] *Quantification of Support for Commercial Space in the Redmond Eastside Framework Plan Industrial Park*, Johnson Reid, October 17, 2012.

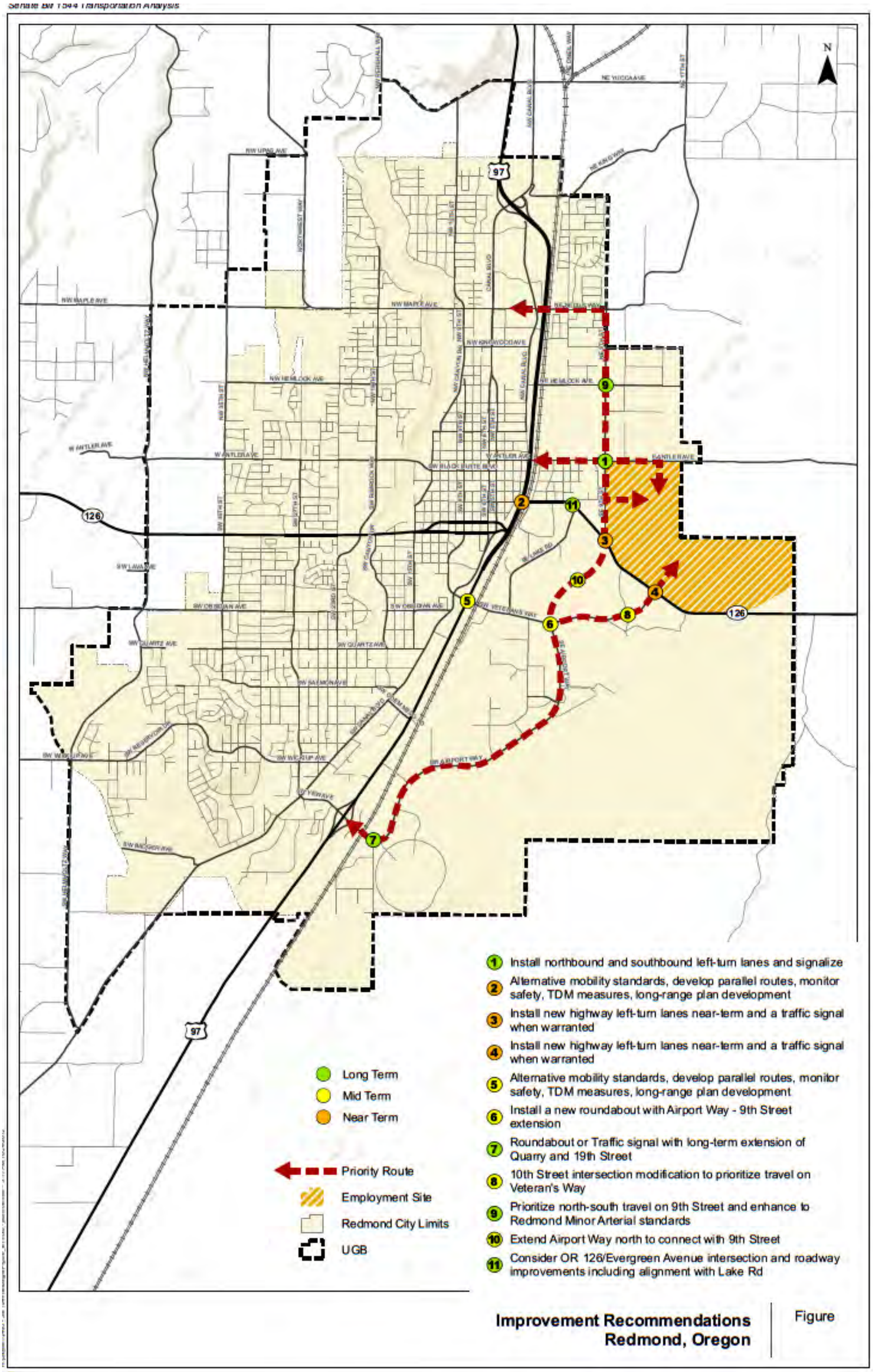


Figure 1-2. Original Senate Bill 1544 Mitigation.

The boundary of the original SB 1544 lands was shifted in 2019 as 156 acres of land along the OR 126 corridor were swapped with an equivalent acreage and zoning designation east of the NE 17th Street corridor to provide more buildable lands within the City's Urban Growth Boundary as a means of expediting development. Both the original boundary of the SB 1544 lands and the updated boundary with the completed exchange include the subject property. This is illustrated in Figure 1-3.

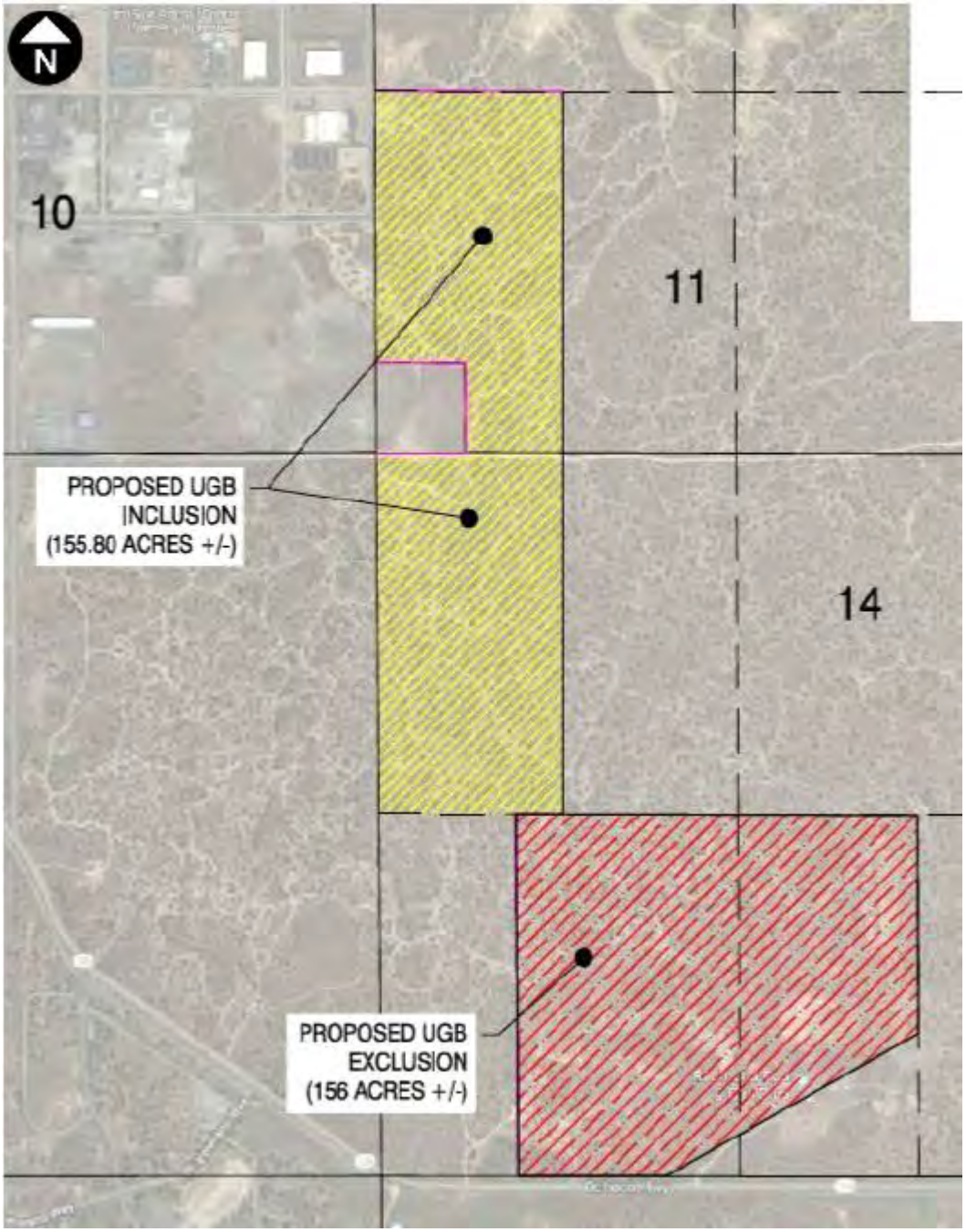


Figure 1-3. 2019 Senate Bill 1544 Land Exchange.

As a result of the land swap, as the zoning areas remained unchanged the overall trip generation and distribution are also expected to remain the same. However, the specific routing of trips will vary, and

with the location of commercial lands farther from the highway the result is an increased reliance on the City system and reduced highway impacts.[3]

From 2018 through 2020 the City of Redmond also prepared an update to their Transportation System Plan. As the Senate Bill 1544 lands had already been rezoned they were included within this update as part of the growth assumptions. The outlined purpose of the TSP Update was to revisit the south US 97 corridor and incorporate findings from the separate ODOT-funded study, to incorporate plans for the DSL large-lot industrial site contemplated south of SW Airport Way, as well as the integration of various area plans that had been undertaken by the City, as well as to review the unaddressed east-west and north-south connectivity needs.

Ultimately, the revised TSP did not consider any new connections or crossings of US 97 within northern Redmond but placed a higher priority for the improvements outlined within the Senate Bill 1544 process to develop the 9th Street corridor. Many, but not all of the constrained US 97 intersections were identified (and later approved) for alternate mobility targets, accepting higher levels of congestion and delay without any identified capacity improvements at the impacted locations, but with the expectation that new connections and development of this parallel route could help relieve the congested and constrained highway system.

Following this plan, the City's 2040 Comprehensive Plan, adopted December 8, 2020, modified the zoning for the site to *Limited Service Commercial (C4A)* and *Light Industrial (M1)* with the boundaries shown in Figure 1-4.

[3] *Senate Bill 1544*, August 19, 2019, prepared by Transight Consulting, LLC.

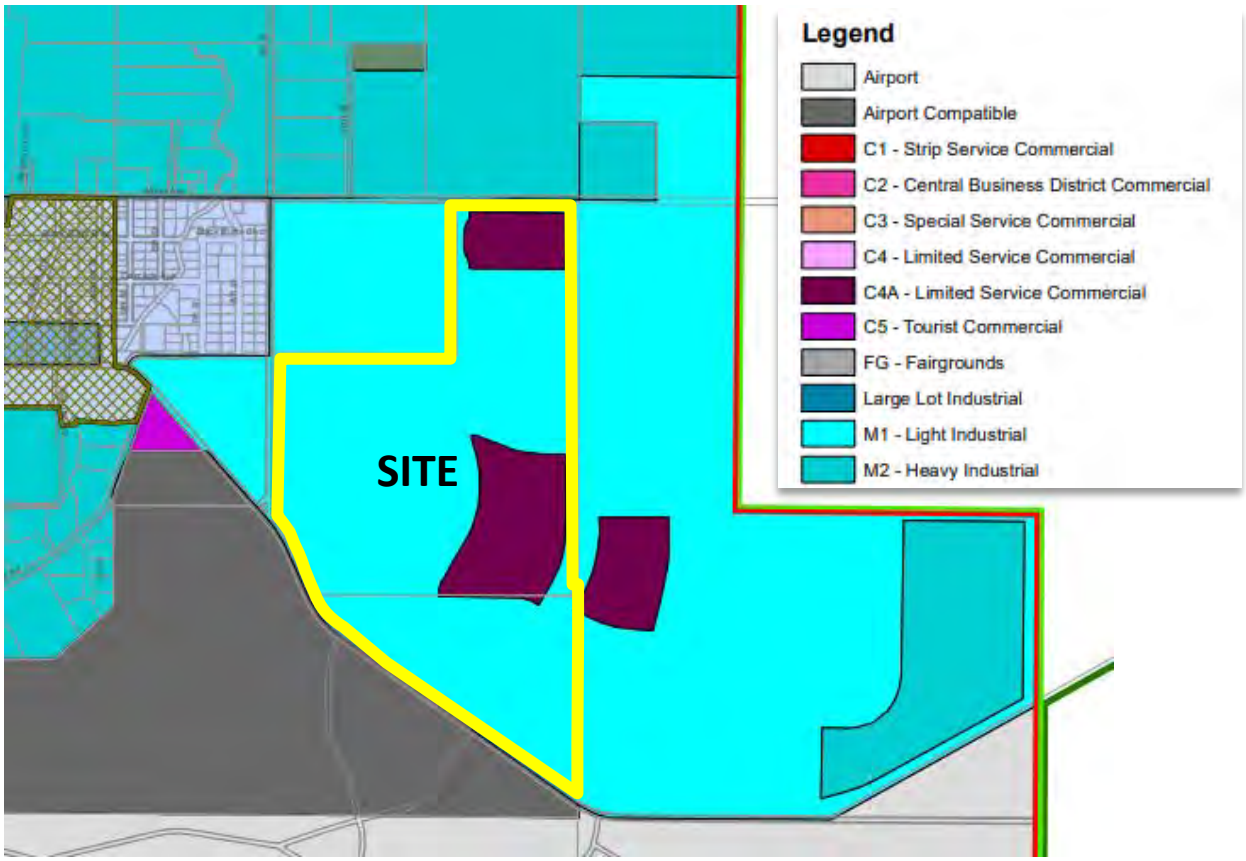


Figure 1-4. Existing Zoning. *Source: DIAL*

Planning for the 9th Street extension to connect Airport Way and OR 126 was initiated around 2017, with roundabouts selected as the preferred intersection treatment at the 9th Street connection with Airport Way and with OR 126. A Design Acceptance Package was prepared for ODOT's approval of the planned roundabout at the OR 126/9th Street intersection, as this also required coordination with the freight industry due to the capacity reduction requirements adopted through Oregon Revised Statue (ORS) 366.315. This planning work, along with coordination with the Redmond Airport, identified a revised alignment for the 9th Street extension that would largely avoid the airport's Runway Protection Zone (RPZ), thereby improving airport safety and better positioning the airport for future expansion (see Figure 1-5). This project is separately proceeding as a fully [City] funded Progressive Design Build effort was initiated in the spring of 2024, with planning and design work on-going.



Figure 1-5. Revised Eastside Arterial alignment around the Redmond Airport's Runway Protection Zone and reconnection of SW Veteran's Way. *Source: December 10, 2019 DAP, Murray Smith & Associates.*

The plans for 9th Street revise what had been approved within SB 1544, as the new roundabout on OR 126 largely dictates the control form that will ultimately be required at the OR 126/Veteran's Way intersection for consistent driver expectations. While this was identified as a "traffic signal or roundabout" in the prior and current Transportation System Plan, it is now understood to be a future roundabout unless modified through an alternatives analysis process as part of the design-build process.

There are other area plans that will also influence planning efforts within this area. ODOT is currently completing a pavement project along OR 126 that will extend to the SW Evergreen Avenue intersection with OR 126 (these plans will include removal of the Evergreen Avenue connection to the highway). This corridor plan will include highway resurfacing as well as a new multiuse pathway system on the north side of the highway. There are ongoing discussions to continue this system through the Opportunity Foundation site to connect with the planned OR 126/9th Street roundabout, then extending through the subject REG property. When complete, this pathway system will tie in with the County's CORE3 site located east of this property that will serve as a training facility for emergency personnel, as well as the Oasis Village low-barrier housing facility. To the west, Heart of Oregon has plans to expand its campus along SE 9th Street. There are on-going discussions related to Lake Road which include revising its identified restriction to right-in, right-out shown in the Transportation System Plan to instead include

widening to a three-lane section (which is also identified in the Transportation System Plan) and allowing it to support left-in, right-in, right-out movements.

There are several other private projects within the surrounding area served by the 9th Street corridor that will further influence area traffic patterns; these are in various stages of review and entitlements, and include distribution/intermodal facilities, industrial uses, manufacturing, commercial, jobs training, and housing.

The City has made completion of the 9th Street corridor its highest priority capital improvement project. Completion of the 9th Street improvements, including a new roundabout at the OR 126/9th Street intersection and Airport Way/Veteran's Way intersection, are fully funded and will be constructed in phases over the next few years from the south toward the north. The City has been modifying the phasing to support tentative plans being developed through the REG project to the extent possible, with the intent of eliminating throw-away costs and extending the benefit of these improvements.

AREA AND PROPERTY DESCRIPTION

The overall site consists of 196.66 acres of land encompassing tax lots 1513150000101 and 1513150000102. As described above, the tax lots are currently zoned *Limited Service Commercial (C4A)* and *Light Industrial (M1)*. The parcels are located within City limits and are shown in Figure 1-6.

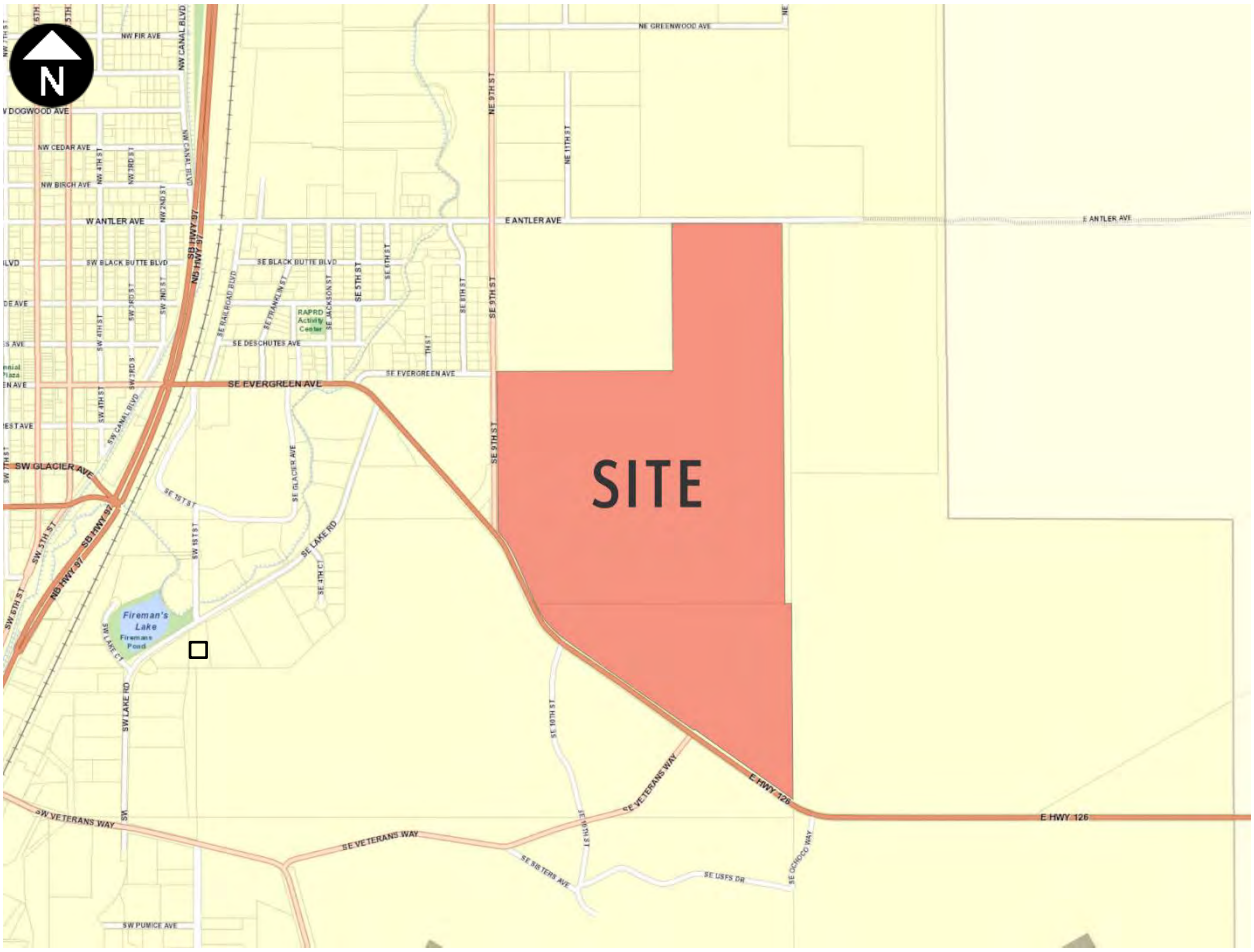


Figure 1-6. Site Vicinity Map. *Source: Deschutes County DIAL.*

PROPOSED ZONING DESIGNATIONS

The preliminary master plan for Redmond East Gateway project generally matches the roadway network shown in the prior Eastside Framework Plan and Senate Bill 1544 analysis, with a grid network of streets providing north-south and east-west connections. The site will utilize the existing SE 9th Street intersection with OR 126 and will build NE 17th Street south to OR 126 to connect at the SE Veterans Way/OR 126 intersection, consistent with the Eastside Framework Plan. This will provide another route south, relieving pressure on the 9th Street corridor and providing a more direct route east toward Prineville. Within the site, additional connectivity will be provided by north-south roads: SE 11th Street, SE 13th Street, and SE 14th Street. East-west connectivity between SE 9th Street and SE 17th Street will be provided by the extension of Evergreen Avenue, and SE Forest Avenue will connect SE 11th Street to SE 17th Street. The streets within the site are planned to be a mix of *Local Streets* and *Local Industrial Streets*, with the *Local Industrial Streets* located adjacent to the light and heavy industrial lands.

The heavy industrial uses are planned along the east side of the site adjacent to SE 17th Street, and the light industrial uses are planned along the south side of the site and centrally located. *Limited Service Commercial* lands abut the SE 9th Street frontage, providing the most direct access to these lands from the City's 9th Street corridor. Landscape buffer areas are included around the *Limited Service Commercial* area separating it from the light industrial lands. The preliminary plan is shown in Figure 1-7.

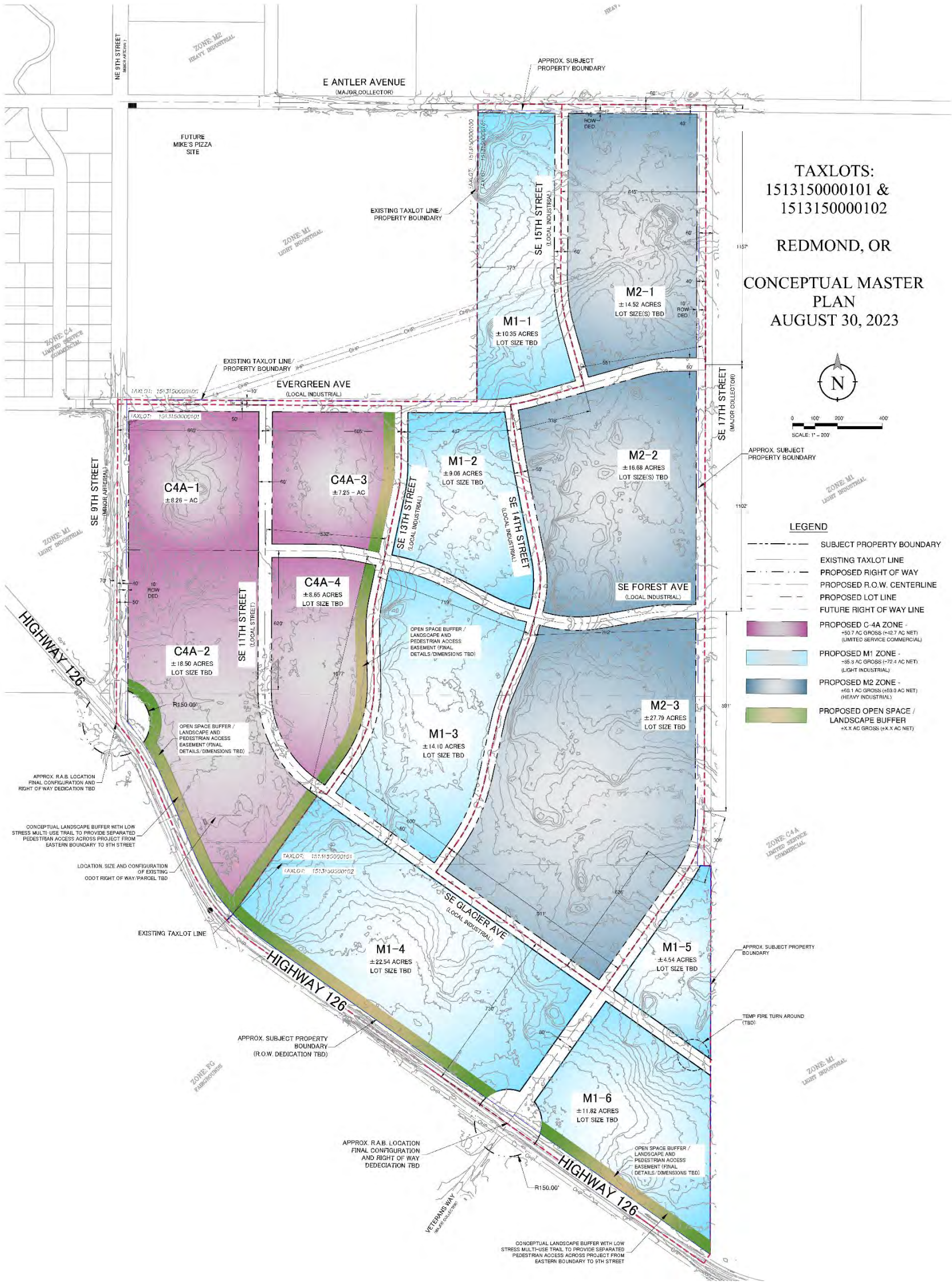


Figure 1-7. Preliminary Site Plan. (*Source: Know Ledge Engineering, LLC. Dated August 30, 2023)*

LAND USE AREAS

The proposed acreage for each zone in the site is as follows:

- Limited Service Commercial: 50.7 gross acres (42.7 net acres)
- Light Industrial: 85.8 gross acres (72.4 net acres)
- Heavy Industrial: 68.1 gross acres (59.0 net acres)

A comparison to the existing zoning shows that that the *Limited Service Commercial* is proposed to be increased by 8.8 acres, and the remaining land will be divided between *Light* and *Heavy Industrial*. Table 1-1 summarizes the specific zoning area changes proposed.

Table 1-1. Existing and Proposed Zoning Comparison

Zone Designation	Existing Zoning	Proposed Zoning	Difference
Limited Service Commercial (C4A)	41.9 ac	50.7 ac	+8.8 ac
Light Industrial (M1)	162.4 ac	85.8 ac	-76.9 ac
Heavy Industrial (M2)	0 ac	68.1 ac	+68.1 ac

Redmond Development Code 8.0190 includes a table identifying commercial and industrial zones and whether various land uses are permitted outright, permitted conditionally, or not allowed. Each of the existing and proposed zones is discussed below.

Limited Service Commercial: This zoning permits a wide variety of uses including multifamily complexes, attached single family, triplex and quadplex about a ground floor, dining, commercial retail, office, appliance repair, and public facilities among other uses. Many of these uses are limited in size to 10,000 square-feet. This land use does not permit "big box" retail as the primary focus of the commercial portion is to serve the adjacent industrial lands and east side residents. This is consistent with the SB 1544 language which states the following:

> **(3) If the city adopts changes authorized by subsection (2) of this section:**
> **(a) The city shall adopt a zoning designation or zoning overlay that restricts retail commercial activities allowed on the site to activities that:**
> **(A) Are necessary to support the planned employment uses;**
> **(B) Are not large-scale retail commercial activities, as that term is used in the land use regulations of the city; or**
> **(C) Help contain overall trips within the site.**

Light Industrial: This zoning permits light industrial manufacturing and associated uses, wholesale distribution, contractor services, etc. This zone also permits restaurants, bars, and other dining establishments.

Heavy Industrial: This zoning focuses primarily on industrial-related uses including heavy and light industrial, wholesale distribution, manufacturing and assembly, warehousing, etc. Certain commercial uses (Restaurants, bars, and bakeries) are also allowed outright.

TRIP GENERATION COMPARISON

To assess the potential transportation impact of the proposed zone change, review of the trip generation potential of a reasonable 'worst-case' development scenario in the existing zoning was compared to the trip generation potential of the proposed zoning. Details on these scenarios are presented below.

Existing Zoning Land Use Scenario

Review of the allowable uses in the Light Industrial (M1) zoning shows that a reasonable 'worst-case' trip generation for this area would occur with development as an Industrial Park. The *Limited Service Commercial* (C4A) zoning is much more flexible, allowing supporting commercial, office, and multifamily housing. Based on the economic analysis by Johnson Reid, the industrial lands can support up to 10% commercial, which would equate to nearly 17 net acres or approximately half of the *Limited Service Commercial* zoning. However, a review of the trip generation rates for commercial retail developments shows that smaller commercial developments (<150,00 square feet) result in higher trip generation. Therefore, a reasonable 'worst-case' for this zoning would be a smaller shopping retail area (~35%) and the remainder in multifamily housing. The land use assumptions for the existing zoning are summarized in Table 1-2.

Table 1-2. Summary of Land Use Assumptions by Zoning District

Proposed Zoning	ITE Land Use Classification	Assumed Density
Limited Service Commercial (C4A)	Multifamily (Low-Rise) – (65% Area) Shopping Plaza – (35% Area)	24 units/acre 25% FAR
Light Industrial (M1)	Industrial Park	0.40 FAR (Single-Story Buildings)

Trip Generation Potential of Existing Zoning

Based on this land use scenario, trip generation estimates were prepared by translating the land areas and assumed densities with standard "per-unit" information published by the Institute of Transportation Engineers (ITE) within the current industry reference (ITE's *Trip Generation*, 11th Edition). This reference provides cordon-area trip generation surveys of similar uses throughout the US.

The light industrial zone is expected to be comprised of multiple tenants. This type of development would be best represented by ITE's *Industrial Park* land use classification, which is described below:

- ***ITE Land Use 130: Industrial Park*** *- An industrial park contains several individual industrial or related facilities. It is characterized by a mix of manufacturing, service, and warehouse facilities with a wide variation in the proportion of each type of use from one location to another. Many industrial parks contain highly diversified facilities. Some parks in the database have a large number of small businesses and others have one or two dominant industries.*

The Limited Service Commercial lands will support a variety of uses. As specific tenants are not yet known, it was assumed that this zoning district will predominately consist of multifamily housing along with a variety of smaller commercial uses. The residential and commercial uses were represented using generalized classifications as identified below:

- ***ITE Land Use 221: Multifamily Housing (Low-Rise)*** *- Low-rise multifamily housing includes apartments, townhouses, and condominiums located within the same building with at least three*

other dwelling units and that have two or three floors (levels). Various configurations fit this description, including walkup apartment, mansion apartment, and stacked townhouse.

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

- ***ITE Land Use 821: Shopping Plaza*** *- A shopping plaza is an integrated group of commercial establishments that is planned, developed, owned, and managed as a unit. Each study site in this land use has between 40,000 and 150,000 square feet of gross leasable area (GLA). The term "plaza" in the land use name rather than "center" is simply a means of distinction between the different shopping center size ranges. Various other names are commonly used to categorize a shopping plaza within this size range, depending on its specific size and tenants, such as neighborhood center, community center, and fashion center.*

  Its major tenant is often a supermarket but many sites are anchored by home improvement, discount, or other stores. A shopping plaza typically contains more than retail merchandising facilities. Office space, a movie theater, restaurants, a post office, banks, a health club, and recreational facilities are common tenants. A shopping plaza is almost always open-air and the GLA is the same as the gross floor area of the building.

  The 150,000 square feet GLA threshold value between shopping plaza and shopping center (Land Use 820) is based on an examination of trip generation data. For a shopping plaza that is smaller than the threshold value, the presence or absence of a supermarket within the plaza has a measurable effect on site trip generation. For a shopping center that is larger than the threshold value, the trips generated by its other major tenants mask any effects of the presence or absence of an on-site supermarket. ITE's Trip Generation includes information for aggregated general commercial land uses in Shopping Center (>150,000 square-feet), Shopping Plaza (40,000 to 150,000 square-feet), and Strip Retail Plaza (<40,000 square-feet). For commercial areas totaling between 40,000 and 150,000 square-feet we would typically apply the Shopping Plaza land use code as summarized below.

  The presence or absence of a supermarket in a shopping plaza has been determined to have a measurable effect on site trip generation. Therefore, data are presented for two subcategories for this land use: sites with a supermarket anchor and sites without a supermarket.

To better represent the commercial portion of the site, the Shopping Plaza data without a supermarket was utilized to estimate the trip generation.

The pass-by rate provided by the ITE Manual for Shopping Plazas between 40 and 150 ksf is 40-percent, with larger shopping centers having lower pass-by rates. This variation in pass-by trip rate generally

assumes that the larger the retail center is the more likely it is to serve as a regional draw, whereas smaller sites cater toward convenience-oriented travelers that are already on the transportation system.

The ITE trip rates identify the driveway impact of each land use without any account for internalization between compatible uses. The commercial portion of the site is planned to primarily serve the other land uses as was assumed in the original trip generation for the Senate Bill 1544 lands. Internal trip rates were calculated through the EPA's recently released *Mixed-Use Trip Generation Model, V4* (see technical appendices), which accounts for the mix of land uses and various trip characteristics calibration data. The preparation of this assessment included broad assumptions related to specific retail uses, and the combination of manufacturing area, light industrial employees, and warehousing area. Based on the generalized assumptions and estimates, this methodology shows about a 6 percent daily and weekday p.m. peak hour internal capture due to walking (1.4%) and internal vehicular trips (4.6%), and a slightly lower rate of five percent during the morning commute hour. These results were similar across the "existing" and "proposed zoning" scenarios so were similarly applied to both. Table 1-4 summarizes the estimated trip generation potential of this reasonable 'worst-case' trip generation scenario.

Proposed Zoning Land Use Scenario

The proposed zoning land use scenario is based directly on the preliminary plan and discussions with the development team, which includes a higher number of multifamily housing units and smaller amounts of commercial as well as varying densities for the light and industrial zones. Table 1-3 summarizes the land uses and how they were converted to ITE Land Use classifications, as well as what assumed density was applied to each zoning district.

Table 1-3. Summary of Development Assumptions by Zoning District

Proposed Zoning	ITE Land Use Classification	Assumed Density
Limited Service Commercial (C4A)	Multifamily (Low-Rise) – (75% Area) Shopping Plaza – (25% Area)	24 units/acre 25% FAR
Light Industrial (M1)	Industrial Park	0.40 FAR (Single-Story Buildings)
Heavy Industrial (M2)	Industrial Park	0.30 FAR (Single-Story Buildings)

Trip Generation of Proposed Zoning

The proposed development contains both light and heavy industrial districts with varying densities and are expected to be comprised of multiple users. These are both best represented by ITE's Industrial Park land use classification, which was described in the previous section.

The *Limited Service Commercial* lands will support a variety of use types. As discussed in the previous section, these are represented by ITE's Multifamily Housing (Low-Rise) and Shopping Plaza land use classifications.

Similar to the existing zoning scenario, trip reductions were applied for internal and pass-by trips. Table 1-4 details the trip generation comparison based on the application of the above categories for the existing and proposed zoning.

Table 1-4. Trip Generation Comparison (ITE 11th Edition)

Land Use	ITE Code	Size	Daily Trips	Weekday AM Peak Hour			Weekday PM Peak Hour		
				Total	In	Out	Total	In	Out
Existing Zoning									
Shopping Plaza *Pass-by Trips (40%)*	821	134,165 sf	9,059 *-3,624*	232 *-93*	144 *-58*	88 *-35*	696 *-278*	341 *-136*	355 *-142*
Multifamily Housing (Low-Rise)	220	549 units	3,701	220	53	167	280	176	104
Industrial Park	130	2,420,194 sf	8,156	823	667	156	823	181	642
Total Trips Existing Zoning *Internal/Multimodal Trips* *Pass-by Trips* Net New Trips			20,916 *-1,255* *-3,624* 16,037	1,275 *-64* *-93* 1,118	864 *-43* *-58* 763	411 *-21* *-35* 355	1,799 *-108* *-278* 1,413	698 *-42* *-136* 520	1,101 *-66* *-142* 893
Proposed Redmond East Gateway Use									
Shopping Plaza *Pass-by Trips (40%)*	821	116,251 sf	7,849 *-3,140*	201 *-80*	125 *-50*	76 *-30*	603 *-241*	295 *-118*	308 *-123*
Multifamily Housing (Low-Rise)	220	769 units	5,180	307	74	233	392	247	145
Industrial Park	130	2,032,510 sf	6,849	691	559	132	691	152	539
Total Trips Proposed Zoning *Internal/Multimodal Trips* *Pass-by Trips* Net New Trips			19,878 *-1,193* *-3,140* 15,546	1,199 *-60* *-80* 1,059	758 *-38* *-50* 670	441 *-22* *-30* 389	1,686 *-101* *-241* 1,344	694 *-42* *-118* 534	992 *-60* *-123* 809
Trip Difference (Proposed Zoning Trips – Existing Zoning Trips)									
Net New Trip Difference			-491	-59	-93	+34	-69	+14	-84

As shown in Table 1-4, comparing the potential trip generation of the site shows there will be a net decrease in daily activity of nearly 500 trips, of which about 60 fewer trips will occur during the weekday a.m. peak hour and nearly 70 fewer trips will occur during the weekday p.m. peak hour. This shows that the small increase in commercial land area is offset by the more substantial shift from light to heavy industrial uses. The purpose of this comparative scenario using similar density assumptions across "like" zones shows that the transition from light industrial to heavy industrial and commercial does not create more trips.

TRANSPORTATION PLANNING RULE COMPLIANCE

Table 1-5 summarizes the applicable criteria for compliance with the Transportation Planning Rule. Further discussion of the applicable items noted in the table is provided below.

Table 1-5. Summary of Criteria in OAR 660-012-0060

Section	Criteria	Applicable?
1	Describes how to determine if a proposed land use action results in a significant impact.	Yes, see response below
2	Describes measures for complying with Criterion #1 where a significant impact is determined.	No
3	Describes measures for complying with Criteria #1 and #2 without assuring that the allowed land uses are consistent with the function, capacity and performance standards of the facility.	No
4	Determinations under Criteria #1, #2, and #3 are coordinated with other local agencies.	Yes
5	Indicates that the presence of a transportation facility shall not be the basis for an exception to allow development on rural lands.	No
6	Indicates that local agencies should credit developments that provide a reduction in trips.	No
7	Outlines requirements for a local street plan, access management plan, or future street plan.	No
8	Defines a mixed-use, pedestrian-friendly neighborhood.	No
9	Outlines requirements under which a local government may find that an amendment to a zoning map does not significantly affect an existing and planned transportation facility.	No
10	Outlines requirements under which a local government may amend a plan without applying performance standards related to motor vehicle traffic congestion, delay or travel time.	No
11	Outlines requirements under which a local government may approve an amendment with partial mitigation.	No

As noted in Table 1-5, there are two criteria that apply to this specific Plan and Land Use Regulation Amendment. These criteria are provided below in italics with responses shown in standard font.

> *OAR 660-012-0060 (1) Where an amendment to a functional plan, an acknowledged comprehensive plan, or a land use regulation (including a zoning map) would significantly affect an existing or planned transportation facility, the local government must put in place measures as provided in section (2) of this rule, unless the amendment is allowed under section (3), (9) or (10) of this rule, 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. A plan or land use regulation amendment significantly affects a transportation facility if it would:

(a) Change the functional classification of an existing or planned transportation facility (exclusive of correction of map errors in an adopted plan);

(b) Change standards implementing a functional classification system; or

(c)(A) Result in types or levels of travel or access that are inconsistent with the functional classification of an existing or planned transportation facility;

(c)(B) Degrade existing or planned facilities such that they would not meet the performance standards in the adopted TSP, or

(c)(C) Degrade the performance of an existing or planned transportation facility that is otherwise projected to not meet the performance standards in the TSP.

Response: The proposed rezone shows a net reduction in trip generation potential between the existing and proposed zoning. Accordingly, the rezone will not change standards, provide levels of travel that are inconsistent with the functional classification of existing or planned facilities, or degrade the performance of transportation facilities. Accordingly, this rezone does not create a significant impact on the transportation system.

OAR 660-12-0060 (4) Determinations under sections (1)–(3) of this rule shall be coordinated with affected transportation facility and service providers and other affected local governments.

Response: The proposed rezone is located near an ODOT facility (OR 126 and US 97 corridors). The rezone will therefore require coordination with and approval by ODOT. A copy of this study has been provided to ODOT for their review and comment.

TRANSPORTATION PLANNING RULE FINDINGS

This analysis shows that rezoning a portion of the site's light industrial lands to a combination of Commercial Limited and Heavy Industrial reduces the overall trip generation potential of the site. This does not create a significant impact and remains in compliance with the Transportation Planning Rule.

SECTION 2. TRIP GENERATION REPORT

This section of the report was prepared to directly comply with Redmond Development Code 8.2815: *Transportation System Analysis*.

1. Description of the Proposed Development

The overall site consists of 196.66 acres of land encompassing tax lots 1513150000101 and 1513150000102. The tax lots are currently zoned *Limited Service Commercial (C4A)* and *Light Industrial (M1)*. The parcels are located within City limits and are shown in Figure 2-1.

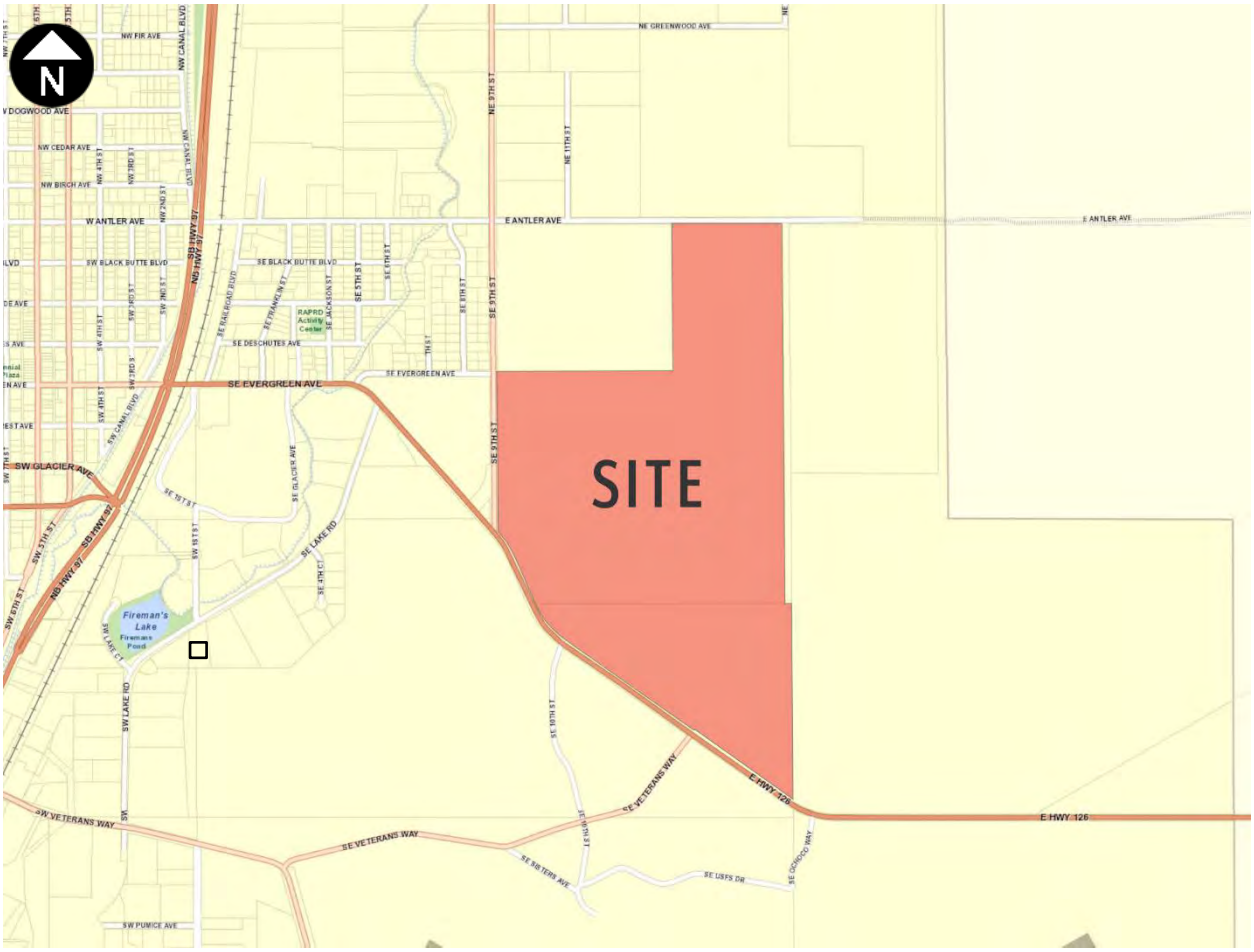


Figure 2-1. Site Vicinity Map. *Source: Deschutes County DIAL.*

As discussed within the TPR compliance section of the report, this site was previously included in the Eastside Framework Plan, which was adopted in 2008, it was rezoned in 2012, and the boundaries have subsequently been shifted toward more developable areas. As addressed within the preceding report section, the plans for the site are consistent with the zoning designations that are currently in place, and the shifting of zones within this master plan remains compliant with the Transportation Planning Rule.

2. CONCEPTUAL SITE PLAN

The preliminary master plan for Redmond East Gateway generally matches the roadway network shown in the Eastside Framework Plan with a grid network providing north-south and east-west connections. The site will utilize the existing SE 9th Street intersection with OR 126 and will build NE 17th Street south to OR 126 to connect at the SE Veterans Way/OR 126 intersection, consistent with the configuration identified within the Eastside Framework Plan. Within the site, additional connectivity will be provided by north-south roads: SE 11th Street, SE 13th Street, and SE 14th Street. East-west connectivity between SE 9th Street and SE 17th Street will be provided by the extension of Evergreen Avenue and SE Forest Avenue will connect SE 11th Street to SE 17th Street. The streets within the site are planned to be a mix of *Local Streets* and *Local Industrial Streets*, with the *Local Industrial Streets* located adjacent to the light and heavy industrial lands.

The planned land uses also include *Limited Service Commercial* areas within the western portion of the site, located along SE 9th Street and accessed from SE Evergreen Avenue. Landscape buffers are planned around the *Limited Service Commercial* area separating it from the *Light Industrial* zoned land. The preliminary site plan is shown in Figure 2-2.

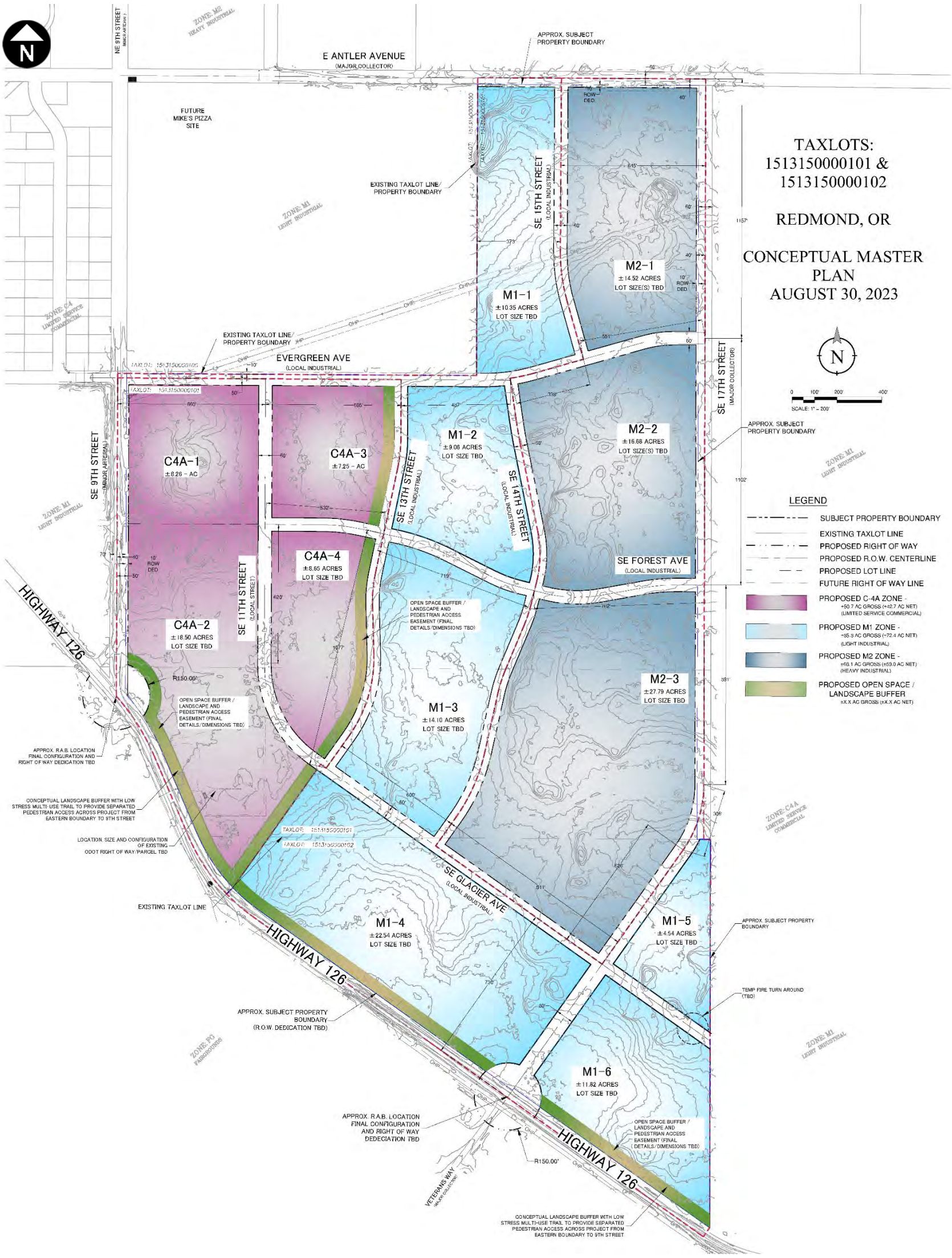


Figure 2-2. Preliminary Site Plan. (*Source: Know Ledge Engineering, LLC. Dated August 30, 2023)*

3. TRIP GENERATION

The zoning of the Redmond East Gateway allows a wide variety of uses that include multifamily residential, commercial/office, and both heavy and light industrial. There are no current development plans or specific tenants identified, and it is expected that the site could accommodate a range of tenants similar to the diverse businesses located along or contemplating development within the airport, fairgrounds, and 9th Street industrial lands. Table 2-1 summarizes the land areas by zoning district.

Table 2-1. Zoning Comparison Table

Zone Designation	Proposed Zoning
Limited Service Commercial (C4A)	50.7 Gross Acres 42.7 Net Acres
Light Industrial (M1)	85.8 Gross Acres 72.4 Net Acres
Heavy Industrial (M2)	68.1 Gross Acres 59.0 Net Acres

As identified within the rezoning discussion that preceded the scoping memo, Table 2-2 summarizes the general zoning districts and how they were converted to ITE Land Use classifications. Generalized Floor to Area (FAR) ratios were provided for each of these zoning districts based on net acreage, as also summarized within the table.

Table 2-2. Summary of Development Assumptions by Zoning District

Proposed Zoning	ITE Land Use Classification	Assumed Density
Limited Service Commercial (C4A)	Multifamily (Low-Rise) – (75% Area) Shopping Plaza – (25% Area)	24 units/acre 25% FAR (Net)
Light Industrial (M1)	Industrial Park	0.40 FAR (Net) (Single-Story Buildings)
Heavy Industrial (M2)	Industrial Park	0.30 FAR (Net) (Single-Story Buildings)

The proposed development contains both light and heavy industrial districts with varying densities and are expected to be comprised of multiple users. This could include uses such as lower-intensity storage, warehousing, or data centers, or flex-industrial spaces. To provide a conservative assessment of uses, these types of uses are best represented by ITE's broad *Industrial Park* land use classification, which is described below.

> ***ITE Land Use 130: Industrial Park*** *- An industrial park contains several individual industrial or related facilities. It is characterized by a mix of manufacturing, service, and warehouse facilities with a wide variation in the proportion of each type of use from one location to another. Many industrial parks contain highly diversified facilities. Some parks in the database have a large number of small businesses and others have one or two dominant industries.*

If the future development plans include highly automated facilities (such as those planned for Mike's Pizza), data centers, material stockpile/storage (such as Basalite), or other types of land-intensive but low-

intensity uses these estimates could be very conservative. However, this assumption provides broad flexibility to accommodate a variety of tenants, including higher-intensity manufacturing or distribution facilities.

The *Limited Service Commercial* lands will support a variety of commercial, multifamily residential, and offices uses. As discussed within the zone change analysis, these are represented by a combination of ITE's *Multifamily Housing (Low-Rise)* and *Shopping Plaza* land use classifications as described below.

> ***ITE Land Use 821: Shopping Plaza*** *- A shopping plaza is an integrated group of commercial establishments that is planned, developed, owned, and managed as a unit. Each study site in this land use has between 40,000 and 150,000 square feet of gross leasable area (GLA). The term "plaza" in the land use name rather than "center" is simply a means of distinction between the different shopping center size ranges. Various other names are commonly used to categorize a shopping plaza within this size range, depending on its specific size and tenants, such as neighborhood center, community center, and fashion center.*
>
> *Its major tenant is often a supermarket but many sites are anchored by home improvement, discount, or other stores. A shopping plaza typically contains more than retail merchandising facilities. Office space, a movie theater, restaurants, a post office, banks, a health club, and recreational facilities are common tenants. A shopping plaza is almost always open-air and the GLA is the same as the gross floor area of the building.*
>
> *The 150,000 square feet GLA threshold value between shopping plaza and shopping center (Land Use 820) is based on an examination of trip generation data. For a shopping plaza that is smaller than the threshold value, the presence or absence of a supermarket within the plaza has a measurable effect on site trip generation. For a shopping center that is larger than the threshold value, the trips generated by its other major tenants mask any effects of the presence or absence of an on-site supermarket.*
>
> *The presence or absence of a supermarket in a shopping plaza has been determined to have a measurable effect on site trip generation. Therefore, data are presented for two subcategories for this land use: sites with a supermarket anchor and sites without a supermarket.*

- ***ITE Land Use 221: Multifamily Housing (Low-Rise)*** *- Low-rise multifamily housing includes apartments, townhouses, and condominiums located within the same building with at least three other dwelling units and that have two or three floors (levels). Various configurations fit this description, including walkup apartment, mansion apartment, and stacked townhouse.*
    - *A walkup apartment typically is two or three floors in height with dwelling units that are accessed by a single or multiple entrances with stairways and hallways.*
    - *A mansion apartment is a single structure that contains several apartments within what appears to be a single-family dwelling unit.*
    - *A fourplex is a single two-story structure with two matching dwelling units on the ground and second floors. Access to the individual units is typically internal to the structure and provided through a central entry and stairway.*

  A stacked townhouse is designed to match the external appearance of a townhouse. But, unlike a townhouse dwelling unit that only shares walls with an adjoining unit, the stacked townhouse units share both floors and walls. Access to the individual units is typically internal to the structure and provided through a central entry and stairway.

As the site is currently undeveloped, there are no trip credits for current uses applied to this analysis. Trip reductions do apply within this mixed-use site, including both pass-by and internal trip reductions. The application of pass-by rates were based directly on the rates included within the ITE Trip Generation Manual and only apply to the commercial component of the site. These trips were assigned to the surrounding streets based on the proportion of volume on OR 126 and 9th Street, and in review of the location of the commercial lands within the site.

Internal trip rates were calculated through the EPA's recently released *Mixed-Use Trip Generation Model, V4* (see technical appendices), which accounts for the mix of land uses and various trip characteristics setting calibration data. The preparation of this assessment included broad assumptions related to specific retail uses, and the combination of manufacturing area, light industrial employees, and warehousing area. Based on the generalized assumptions and estimates, this methodology shows about a 6 percent daily and weekday p.m. peak hour internal capture due to walking (1.4%) and internal vehicular trips (4.6%), and a slightly lower rate of five percent during the morning commute hour.

Table 2-3 details the trip generation estimates based on the application of the various land use classifications and densities.

Table 2-3. Trip Generation Comparison (ITE 11th Edition)

Land Use	ITE Code	Size	Daily Trips	Weekday AM Peak Hour			Weekday PM Peak Hour		
				Total	In	Out	Total	In	Out
Shopping Plaza	821	116,251 SF	7,849	201	125	76	603	295	308
Pass-by Trips			*-3,140*	*-80*	*-50*	*-30*	*-241*	*-118*	*-123*
Multifamily Housing (Low-Rise)	220	769 Units	5,180	307	74	233	392	247	145
Industrial Park	130	2,032,510 SF	6,849	691	559	132	691	152	539
Total Trips Proposed Zoning			19,878	1,199	758	441	1,686	694	992
Internal/Multimodal Trips			*-1,193*	*-60*	*-38*	*-22*	*-101*	*-42*	*-60*
Pass-by Trips			*-3,140*	*-80*	*-50*	*-30*	*-241*	*-118*	*-123*
Net New Trips			**15,546**	**1,059**	**670**	**389**	**1,344**	**534**	**809**

For validation purposes, trip generation estimates were subsequently prepared and presented to the City of Redmond within the Transportation Phasing Memorandum. Unlike the values shown in Table 2-3 that were based on assumed density and building square-footage, these trip generation values were based on estimated *employment* for the industrial lands. While these estimates also remain preliminary and subject to change (and do not include pass-by information), these estimates result in similar values of approximately 1,411 weekday p.m. peak hour trips. These values are summarized in Table 2-4 and are provided for validation only, demonstrating that the more refined tenant mix anticipated within these lands matches with the original density assumptions. The impact assessment (and infrastructure sizing) within this report based on the values shown in Table 2-3.

Table 2-4. Revised Weekday PM Peak Hour Trip Generation by Phase

Land Use	ITE Code	Size	Total PM Trips
Phase 1: Industrial Park	130	485 Employees	204
Phase 2: Industrial Park	130	350 Employees	147
Phase 2: Commercial	945/ 821	12-Pos 40KSF	193
Phase 2: Residential (MF)	220	160 Units	82
Phase 3: Residential (MF)	220	445 Units	227
Phase 3: Retail	821	65KSF	202
Phase 4: Industrial Park	130	335 Employees	114
Phase 5: Industrial Park	130	610 Employees	207
Phase 6: Industrial Park	130	369 Employees	125
Total *Internalization 6%* **Net New Trips**			1,501 *-90* **1,411**

The Redmond Development Code requires a Transportation Impact Analysis for all new developments expected to generate more than 200 weekday daily trips or 20 weekday p.m. peak hour trip ends. As shown in Table 2-3, full build-out of the entire site over the planning period could generate nearly 15,550 weekday daily trips, including about 1,344 vehicular trips during the weekday p.m. peak hour. This is a significant number of trips, and with surrounding development patterns including larger-scale but low-density employment uses this could be an overestimate of the development potential, particularly within the 20-year planning horizon. Accordingly, this traffic study is developed as a phased plan, so that infrastructure can be extended on a per-plat basis with further refinement of these estimates based on the actual development plans.

Given the amount of land assigned to industrial uses, truck traffic from the property is expected to be higher. The ITE Trip Generation Appendices includes information on the time-of-day distribution for trucks. Although, this data isn't available for Industrial Parks, it is available for General Light Industrial, Manufacturing, and Warehousing, which are similar uses. A review of the data shows that peak truck trip times are generally between 8:00 a.m. and 4:00 p.m. Overall, the number of trucks traveling during the critical weekday p.m. peak hour is expected to be approximately 5-percent of the total weekday p.m. peak hour trips for the REG property.

SECTION 3. TRANSPORTATION IMPACT ANALYSIS REPORT

1. TRANSPORTATION FACILITIES EVALUATION

Area Infrastructure

The primary transportation corridors in the site vicinity include NE Hemlock Avenue, E Antler Avenue, OR 126, and Veterans Way in the east-west direction, and US 97, NE 9th Street, SE 17th Street, and Airport Way in the north-south direction. The functional classification of the surrounding transportation corridors is illustrated in Figure 3-1, and Figure 3-2 summarizes the City's cross-section standards for Antler Avenue (*Major Collector*), SE 9th Street (*Minor Arterial*), and SE 17th Street (*Major Collector*) as contained within the adopted 2020 Transportation System Plan.

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

- NE Hemlock Avenue provides an east-west connection from NE 17th Street to the west, intersecting with the NE 9th Street corridor at an all-way stop-controlled intersection then extending across the BNSF mainline with an at-grade active crossing and terminating with a right-in, right-out connection to US 97. It is classified as a *Major Collector* and has a two-lane cross-section throughout. Sidewalks are provided along the roadway adjacent to new development with gaps in older and undeveloped sections. There are no separate striped bicycle lanes. It has a 35 mph posted speed.
- E Antler Avenue provides an east-west connection from a right-in/right-out intersection at US 97 east across the BNSF mainline with an at-grade active crossing extending to NE 11th Street, west of the site frontage. At this point, E Antler Avenue is an improved, narrow paved road that provides access to additional undeveloped properties. E Antler Avenue is striped as a two-lane roadway with minimal shoulders and is classified as a *Major Collector*. Intermittent sidewalks are provided on the west end and on the north side of the roadway west of NE 11th Street. It has a 60-foot right-of-way along the frontage and a posted speed of 25 mph on the improved portions.
- OR 126 is classified as a *State Highway* in the City of Redmond Transportation System Plan and a *Statewide Highway* within the Oregon Highway Plan. The classification changes to a *Statewide Expressway* east of the City limits. It provides a regional east-west connection to the west to Sisters and US 20 and to the east to Prineville and US 26. Within the study area it has a two-lane cross-section, paved shoulders, and a posted speed that ranges from 35 mph to 55 mph.
- Veterans Way currently provides a connection between OR 126 and US 97. Future plans show a realignment of the east portion of Veterans Way from its current connection to Airport Way to a future SE 9th Street extension, north of the current Veterans Way/Airport Way intersection. SW Veterans Way west of Airport Way is classified as a *Minor Arterial*, while the east portion of SE Veterans Way is classified as a *Major Collector*. Veterans Way has a two-lane cross-section with gravel shoulders on the east end that transition to paved bicycle lanes. The posted speed throughout is 45 mph.

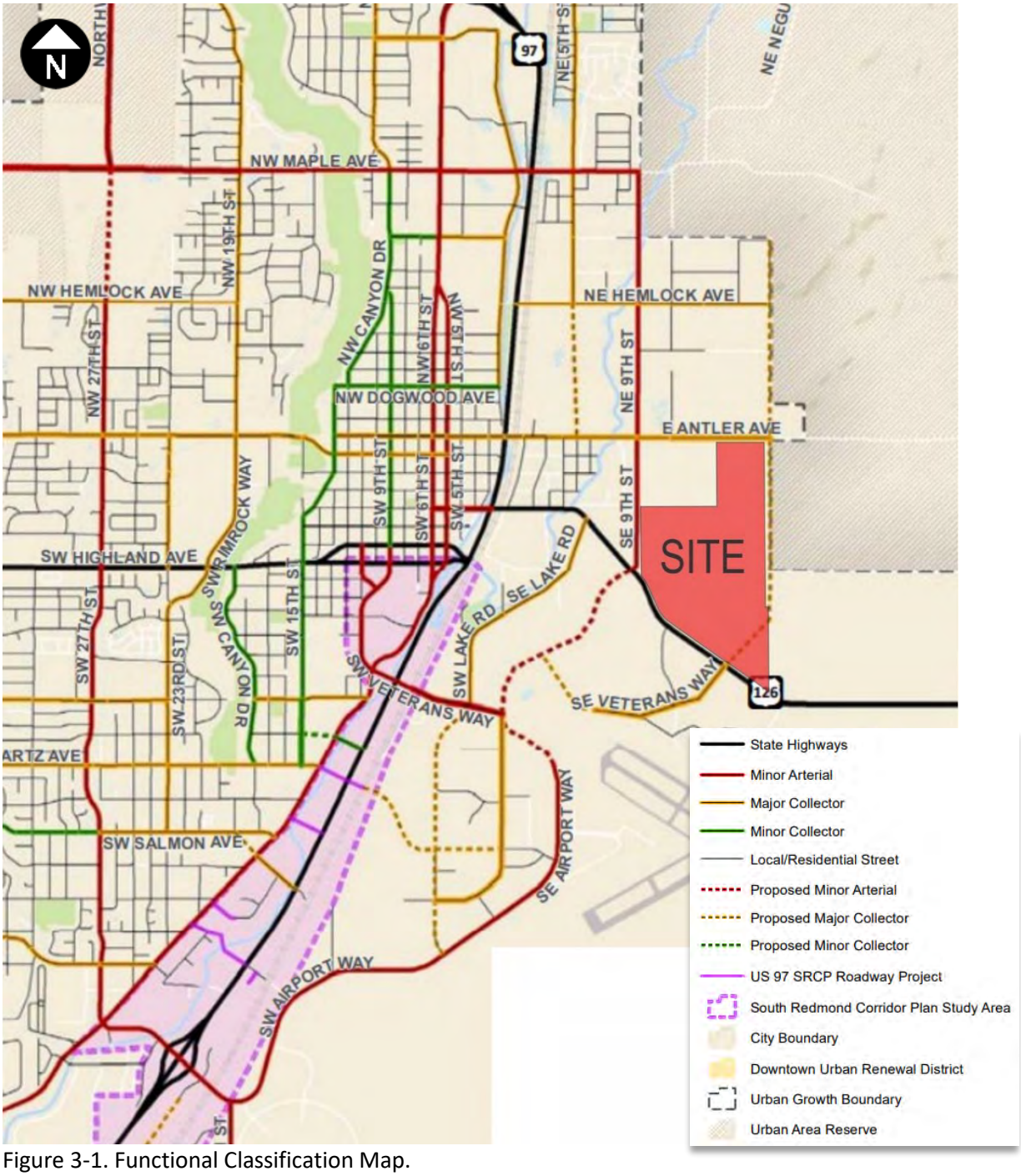


Figure 3-1. Functional Classification Map.
Source: Redmond Transportation System Plan Dated: December 2020

Figure 5: Major Collector Typical Section

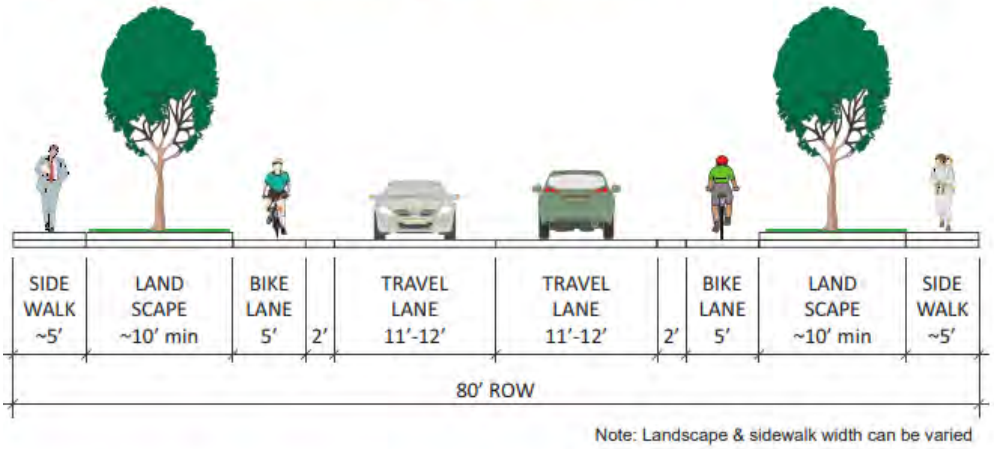


Figure 6: Minor Arterial Typical Section

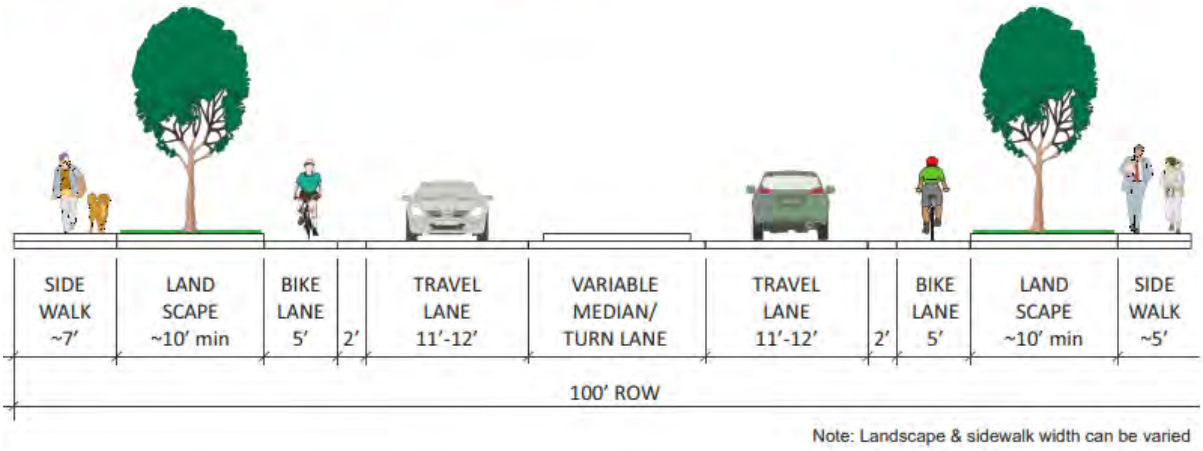


Figure 3-2. City of Redmond roadway cross-section standards. *Source: 2020 Transportation System Plan*.

- US 97 is classified as a *State Highway* in the City of Redmond Transportation System Plan and a *Statewide Expressway* in the Oregon Highway Plan. It provides the major north-south regional route in Central Oregon. US 97 is a four-lane divided highway with bicycle lanes. Within the study area, the roadway shifts from a rural design with gravel shoulders north of E Antler Avenue, to curb and gutter between E Antler Avenue and SW Evergreen Avenue, and then to a more urban design with sidewalks on the east side of US 97 south of SW Evergreen Avenue. Access to the highway is limited to major cross-streets. The posted speed ranges from 40 mph to 55 mph.
- NE 9th Street is a north-south *Minor Arterial* on the east side of Redmond connecting from NE Negus Way to the north to OR 126 to the south. North of NE Hemlock Avenue it has been improved to a three-lane section with curb, gutter, and bicycle lanes. Complete sidewalks are provided on the west side and sidewalks or graveled paths are provided on the east side. South of NE Hemlock the roadway has a two-lane cross-section with gravel shoulder and no dedicated pedestrian or bicyclist facilities. Along the site frontage, SE 9th Street has a 70-foot right-of-way and a posted speed of 40 mph. As part of the Eastside Arterial Project in the City's 5-year Capital Improvement Program, it will be extended south from OR 126 to SW Veterans Way. The project includes roundabouts at the SE 9th Street/OR 126 and SE 9th Street/SW Veterans Way intersections

and improves NE/SE 9th Street north from OR 126 to NE Hemlock Avenue to include a three-lane section with curb, gutter, and bicycle lanes matching the NE 9th Street cross-section to the north.

- 17th Street, a *Major Collector*, is currently built between NE Kingwood Avenue and NE Greenwood Avenue north of the site. The existing portion of NE 17th Street has a two-lane cross-section and sidewalks on the west side. The portion of SE 17th Street to be built with the REG project will not connect in the near term with the existing portion of NE 17th Street. It will, however, follow the City's planned alignment and connect to SE Veterans Way at OR 126.
- Airport Way is classified as a *Minor Arterial* and provides a north-south route between Veterans Way and US 97 near the south end of Redmond. Its cross-section varies between two and three lanes and includes bicycle lanes throughout. Turn lanes are provided at major intersections and pedestrian facilities are provided adjacent to newer developments. The posted speed is 45 mph. A roundabout at the SW 19th Street/SW Airport Way intersection is included in the City's 5-Year Capital Improvement Plan and is planned for construction in 2026/2027.

As summarized, both SE 9th Street and Antler Avenue currently contain a narrower right-of-way than is standard for this type of roadway and do not have the required pedestrian and bicycle facilities along the site frontage. SE 17th Street from E Antler Avenue to OR 126 will be built with the proposed development.

Pedestrian and Cyclist Network

The existing pedestrian and cyclist network is somewhat limited within this developing portion of the City. Streets, sidewalks, and bicycle lanes are being extended as development occurs.

A review of the City's adopted 2020 Transportation System Plan shows no planned priority pedestrian routes within the vicinity of the site. However, multiple planned bicycle facilities are located either along the site frontage or within the site. These include the following:

- Project B30 – Bicycle lanes are planned on SE 17th Street as part of Project S17 for a proposed Collector.
- Project B37 – Bicycle lanes are planned on SE 9th Street from OR 126 to NE Hemlock Avenue for approximately 1 mile with an estimated cost of $1.4 million.
- Project B38 – Bicycle lanes are planned on E Antler Avenue from SE 9th Street to NE 17th Street for approximately 0.1 miles with an estimated cost of $200,000.
- Project B46 – A proposed shared use path is planned on OR 126 from just west of SE Evergreen Avenue east to the city limits.

These projects are illustrated in Figure 3-3 from the TSP.

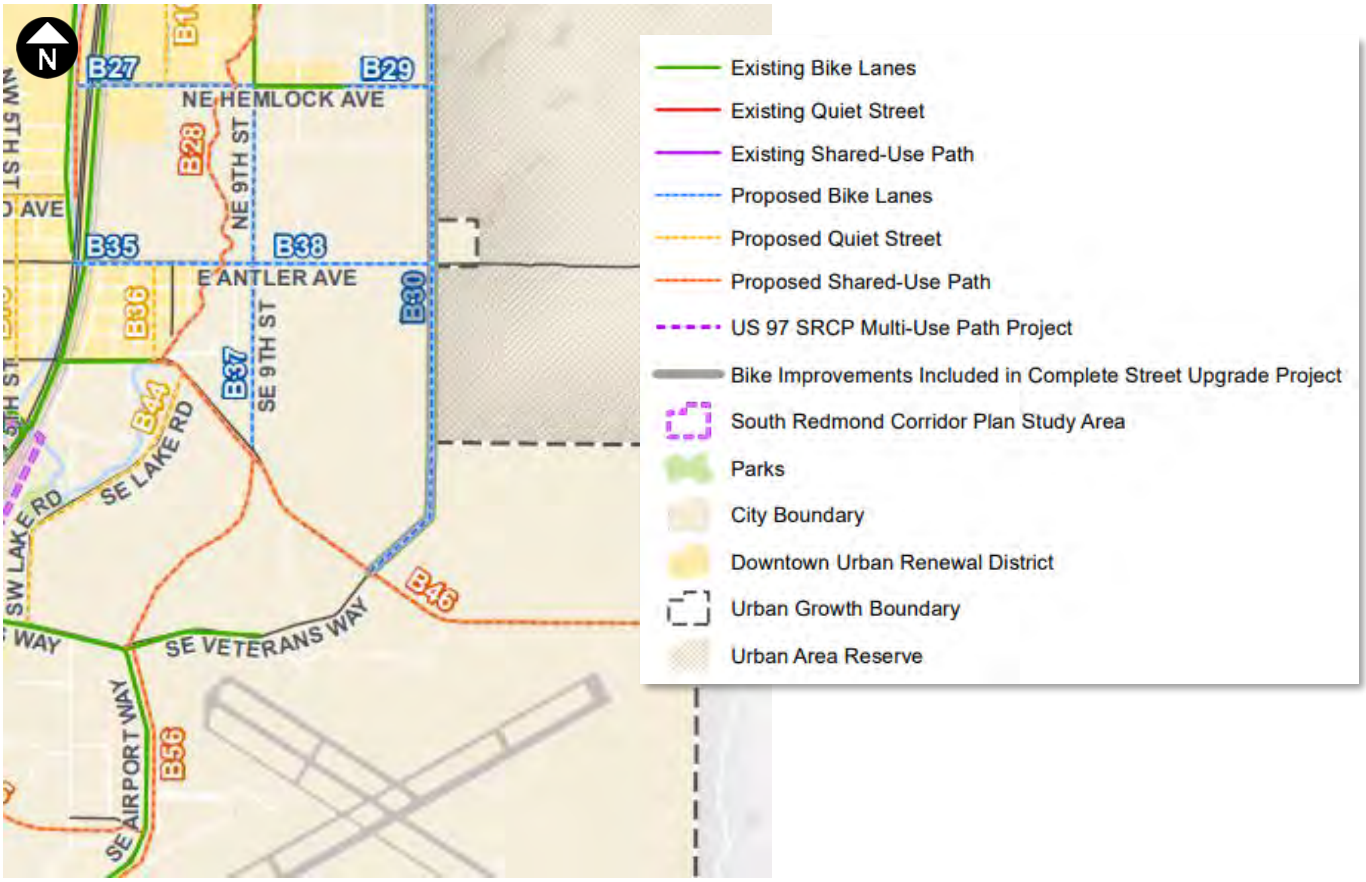


Figure 3-3. Existing and Planned Bicycle Facilities from 2020 TSP.

Transit Service

Cascades East Transit provides two flex routes through the City of Redmond covering the southeast and northwest quadrants of the City, as shown in Figure 3-4. No transit service is currently provided to northeast Redmond, and the uses in this portion of the City would generally be considered non-transit supportive due to their low density.

The expectation is that transit service will be provided throughout all four quadrants of the City in the future, with service to "northeast" Redmond prioritized along the 9th Street arterial corridor (and integrated into the City's planned EAP streetscape), allowing it to serve multiple uses (including the Heart of Oregon Campus, Northpoint Village, the proposed BHDevco distribution facility, and REG). Longer-term, CET may provide transit service along the 17th Street collector route. However, constructing transit stops for service that does not exist is not required and would not be prudent until the specific routes are known.

The proposed streetscape adjacent to and within REG can readily accommodate future transit stops. The location and details on where these stops should occur can be provided within subsequent site plan applications based on the future location of transit routes and CET's ability to serve those sites.

Based on my discussions with CET staff, it is my understanding that the agency is preparing to conduct a Transit Master Plan update. It is recommended that the City coordinate with CET within this update process to consider how transit service can extend throughout northeast (and southwest) Redmond,

particularly with the affordable housing, low barrier housing, employment, and HOC. An ideal near-term transit location for the City to consider would be near the SE 9th Street/SE Evergreen Avenue intersection, with this stop serving both the Heart of Oregon Campus, Wild Mike's, and REG. This location would benefit from the planned roundabout and pathway system that will be constructed by REG, and with the enhanced roundabout crossings the transit stop could be located on either side of the corridor based on CET routing guidance.

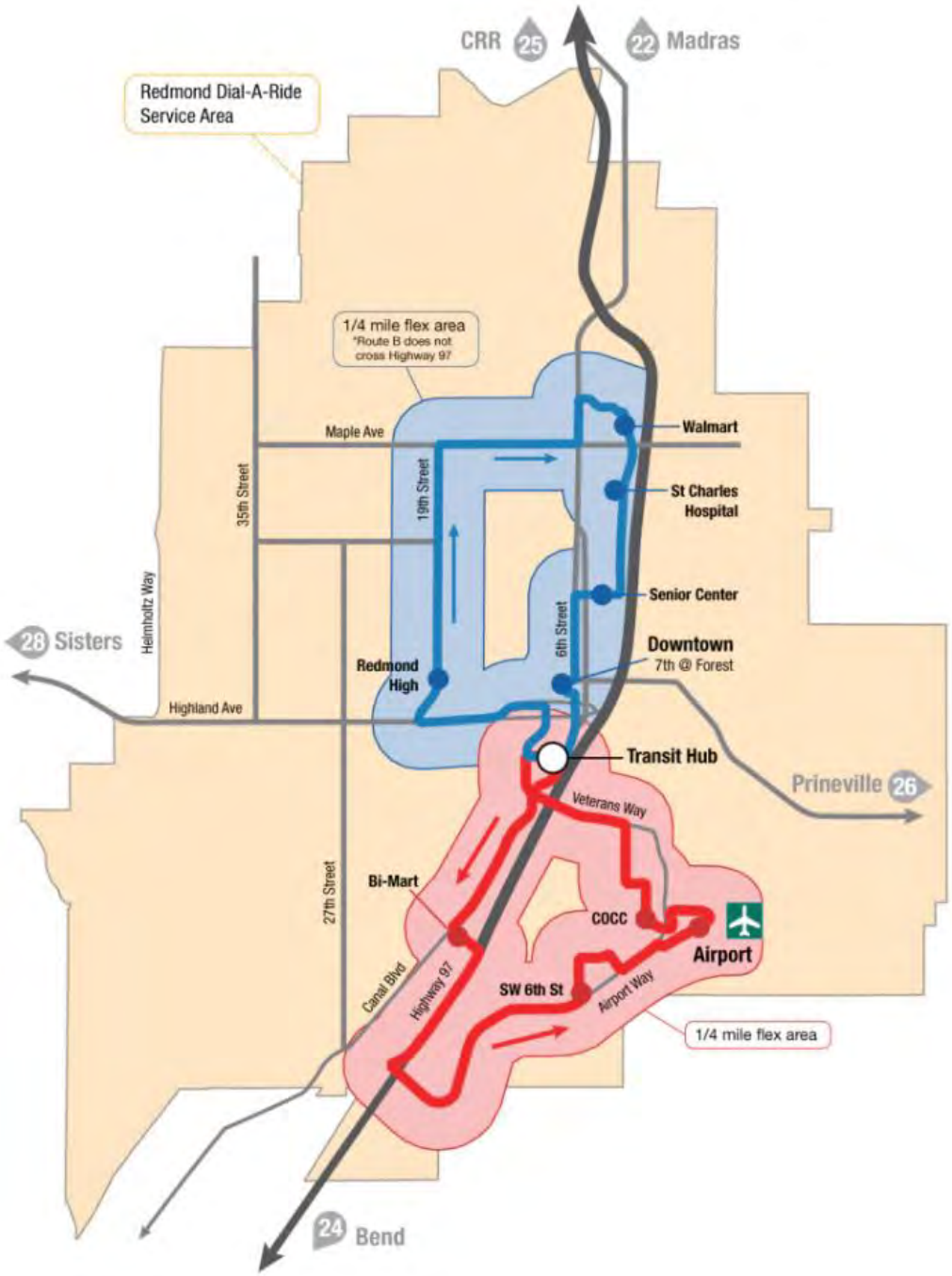


Figure 3-4. Redmond Transit Flex Routes. *Source: Cascades East Transit*

In addition to the deviated flex service, regional (inter-community) transit service is provided through Cascades East Transit's *Community Connector* system, with service to Madras, Prineville, Sisters, and

Bend. Buses travel to and from Bend at approximately 90-minute headways on weekdays. No service is available on weekends. Service to Madras, Sisters, and Prineville is more limited throughout the day, and generally only available during the commute periods. Regional transit service is provided from the Redmond Transit Hub located at SW 6th Street and SW Kalama Avenue.

Since March 21, 2020, fares have been eliminated for all Cascade East Transit services with the exception of the recreational shuttles. This was done to reduce passenger interaction with fareboxes and maintain social distance safety during the COVID-19 pandemic.

Regional transit service is available outside of Central Oregon to Portland, Eugene, Ontario, Chemult, Salem, and Prairie City through multiple providers. These services are available from the Bend Hawthorne station and the Redmond Transit Hub, depending on the provider. Regional (inter-community) transit service is provided through Cascades East Transit's *Community Connector* system, with service to Madras, Prineville, Sisters, and Bend. Buses travel to and from Bend at approximately 90-minute headways on weekdays. No service is available on weekends. Service to Madras, Sisters, and Prineville is more limited throughout the day, and generally only available during the commute periods. Regional transit service is provided from the Redmond Transit Hub located at SW 6th Street and SW Kalama Avenue.

Ride Sharing

Ride sharing is available within Central Oregon through online providers such as UBER and LYFT. The service boundary for LYFT is more limited, providing on-demand service throughout Bend, Redmond, Prineville, Terrebonne, and Sisters. Uber service boundaries include Warm Springs, Madras, and La Pine. These on-demand ride sharing services are available all days and hours, with ride costs based on distances.

Truck Circulation

The Industrial Park portion of the site is expected to draw a higher number of trucks from OR 126 and US 97. Trucks from OR 126 will primarily access the site at the new OR 126/SE 17th Street intersection as this provides a direct entrance into the industrial lands. Trucks to and from US 97 are expected to mostly utilize OR 126, with a smaller number utilizing E Antler Avenue to the right-in/right-out connection at US 97.

Trucks to the commercial and residential uses on the property will also have access from the SE 9th Street/OR 126 intersection and from E Antler Avenue to SE 9th Street.

2. TRIP DISTRIBUTION

The Redmond East Gateway development is expected to consist of a mix of industrial, residential, and commercial uses consistent with previous studies for the SB 1544 lands. As such, the trip distribution pattern was developed based on the previous work conducted for the SB 1544 lands as well as newly obtained data from the Redmond-Bend regional travel demand model that was obtained from ODOT's Transportation Planning and Analysis Unit. This information was obtained both to inform travel patterns as well as area growth and trip rerouting associated with the planned 9th Street extension.

The Redmond-Bend Travel Demand model was the forecasting tool applied in developing the City of Redmond's Transportation System Plan, as well as prior travel forecasts used within the OR 126/9th Street Design Acceptance Package for the planned roundabout. The model is premised on population and employment assumptions by region (Transportation Analysis Zone, or TAZ), and is a gravity model with productions and attractions. As shown in Figure 3-5 (and included in appendices), review of the travel demand model outputs shows the following:

- The impacted TAZ boundaries show a total of 420 weekday p.m. peak hour trips despite the rezoning of these lands to support large-lot industrial and employment in 2012 as part of Senate Bill 1544, which was premised on 1,500 weekday p.m. peak hour trips throughout the 465-acre property.
- Links into the property (assumed loading points) include a connection to Antler Avenue, a "T" connection to OR 126 between SE Veteran's Way and SE 9th Street, and a "T" connection to OR 126 east of SE Veteran's Way. This access configuration does not align with the original rezone, the Eastside Framework Plan, or the Transportation System Plan. While model loading often varies from the specific access plan, the planned *Collector* extension of Veteran's Way into the property should be correctly modeled to obtain the appropriate travel demands on the higher-order street system.
- The travel demand model includes the planned 9th Street extension and the existing SW Veteran's Way connection to Airport Way, with higher reliance on Veteran's Way for travel toward the south.
- The model does not extend east of the City or include Prineville, so without any attractions there are no trips assigned toward the east within the model. Travel volumes to the east are "hard-coded" into the forecasts.

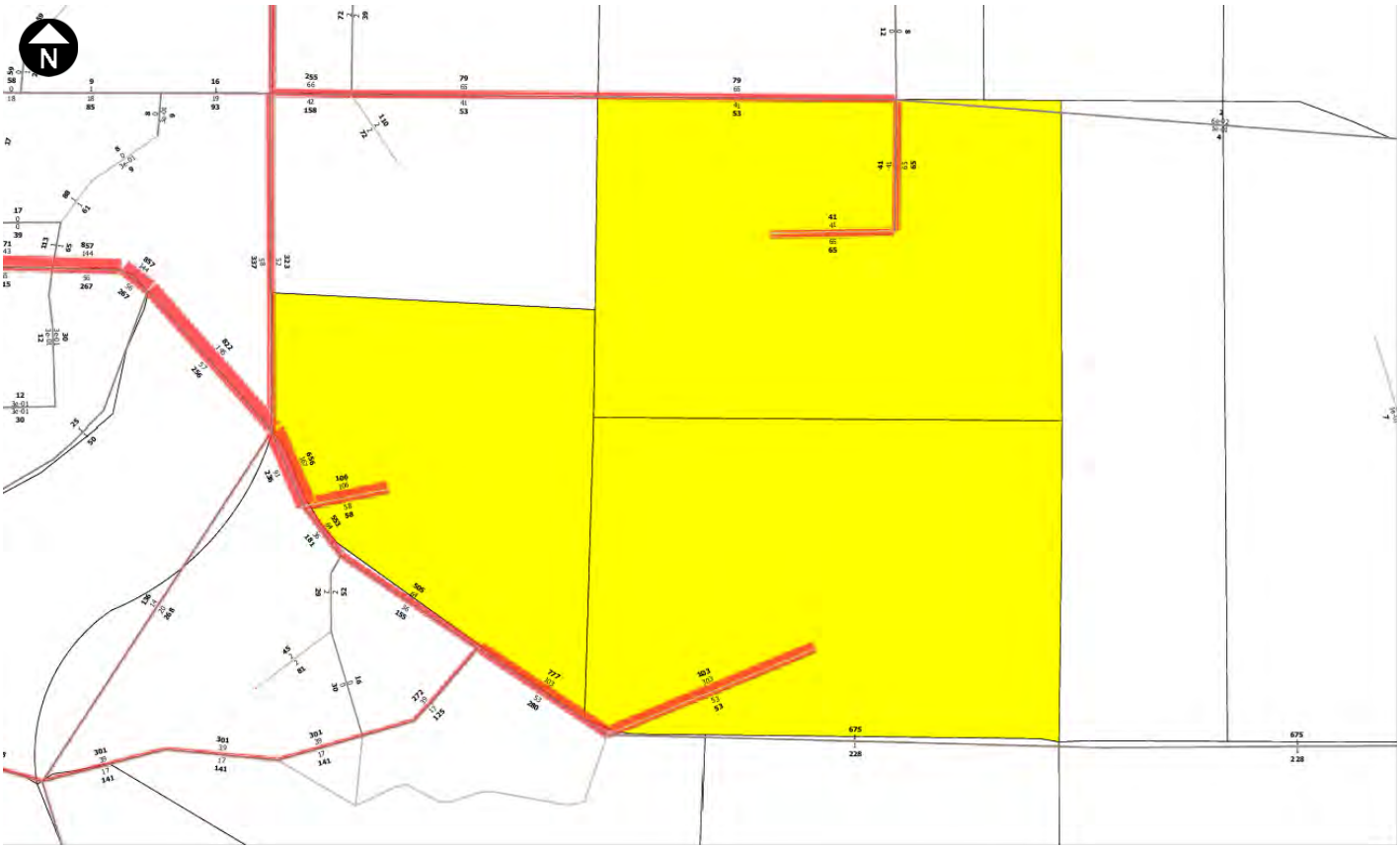


Figure 3-5. Redmond-Bend Travel Demand Model, Select Zone Analysis, Weekday PM Peak Hour

Given the travel demand model nuances, information from the Select Zone Analysis was reviewed alongside the prior distribution patterns developed for the original rezone. Generally, this review validated the prior distribution patterns where data was available, showing approximately 15-percent of the trips travel north on US 97, 20-percent traveling south on US 97, and 10-percent east on Oregon 126. The remaining 50-percent of trips are expected to utilize city streets to access the west side of Redmond

via Maple Avenue, Evergreen Avenue, SW Glacier Avenue and SW Highland Avenue, Veterans Way, and SW Airport Way.

The distribution patterns for the site also account for planned improvements within the area. The City's five-year Capital Improvement Plan includes the following funded projects within the site vicinity:

- The extension of SE 9th Street between OR 126 and the Airport Way/Veterans Way intersection. This project includes new roundabouts at the SE 9th Street/Veterans Way and OR 126/SE 9th Street intersections. The project is currently in the pre-design phase and is anticipated for construction in 2026 - 2027.
- The upgrade of NE 9th Street from Antler Avenue to Hemlock Avenue in the 2024/2025 timeframe to *Minor Arterial* standards, and upgrades from Antler Avenue to OR 126 in the 2025 - 2026 timeframe. The upgrades were both identified in the 2008 Transportation System Plan and include the addition of turn lanes, bicycle lanes, and sidewalks.
- A roundabout at the SW 19th Street/SW Airport Way intersection is planned for construction in 2026/2027.

Given the identified funding, these projects are both assumed to be complete in all future analysis scenarios. In addition to these projects, as previously noted there are on-going discussions with nearby properties related to the OR 126 intersections with Lake Road and SW Veteran's Way, and the planned closure of the local Evergreen Avenue connection to OR 126. For analysis purposes, no changes will be assumed from the configurations that are currently present and contemplated within the adopted Transportation System Plan.

The estimated trip distribution and weekday p.m. peak hour assignment for the proposed REG development is illustrated in Figure 3-6. Consistent with the original SB 1544 rezone (see Figure 1-2), this trip assignment assumes that access to the property will be provided from an extension of SW Veteran's Way, a new eastern connection from SW 9th Street aligned with Evergreen Avenue, and access from E Antler Avenue.

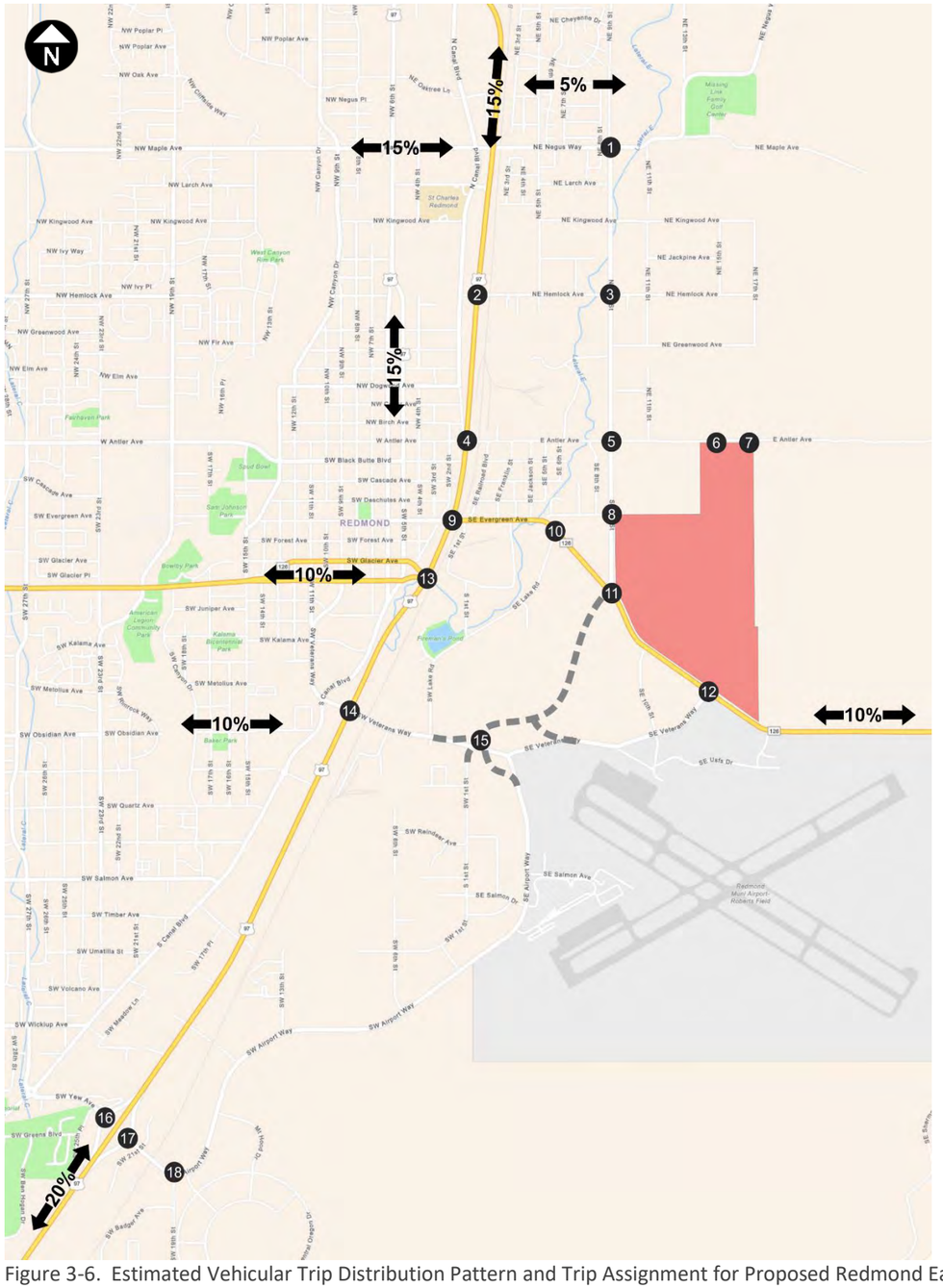


Figure 3-6. Estimated Vehicular Trip Distribution Pattern and Trip Assignment for Proposed Redmond East Gateway, Weekday PM Peak Hour.
Map Source: ODOT TransGIS.

3. STUDY AREA

Based on the scale of the REG site, there are several City and ODOT intersections that are expected to be within the impact area of the REG development. Redmond's Development Code requires analysis of classified intersections impacted by 25 or more weekday p.m. peak hour trips, and ODOT's analysis criteria commonly considers 50 or more weekday p.m. peak hour trips as its threshold for analysis. In the case of the REG lands a formal TIA has already been prepared and approved for these lands as part of its original 2012 rezone and entitlements, and the City's adopted 2020 Transportation System Plan was intended to identify Citywide transportation needs with development of these and other adjoining employment lands that were zoned for the contemplated uses and situated within the UGB. However, as indicated within Appendix E of the DAP, a technical memorandum prepared by Kittelson & Associates dated March 24, 2017 indicates that direction was provided from City staff to assume the following development within the overall 465-acre Senate Bill 1544 lands through the 2035 planning horizon:

- 35% allocation to parks and open space
- 20% development with light industrial uses with 7.7 employees per acre
- 50 acres developed as a low-intensity heavy industrial use

Based on the travel demand modeling, it appears that these same assumptions were included within the City's Transportation System Plan, effectively assuming low growth from these lands through the 2040 horizon.

In addition to these development assumptions, within the DAP annual growth along OR 126 was assumed to occur at 2.1 percent based on ODOT's future volume tables, despite TPAU projections for annual growth of 5.7 percent, as this higher rate of growth was considered unsustainable. However, review of ODOT Average Annual Daily Traffic volume trends from Automatic Traffic Recorder (ATR) Station 07-002, which is located immediately west of the OR 126/Powell Butte Highway intersection, shows a sustained growth rate of 5.1 percent for the past decade, as shown in Figure 3-7. It is noted that the 2013 volumes reflect post-recession trends, and 2022 volumes are tapering post-COVID.

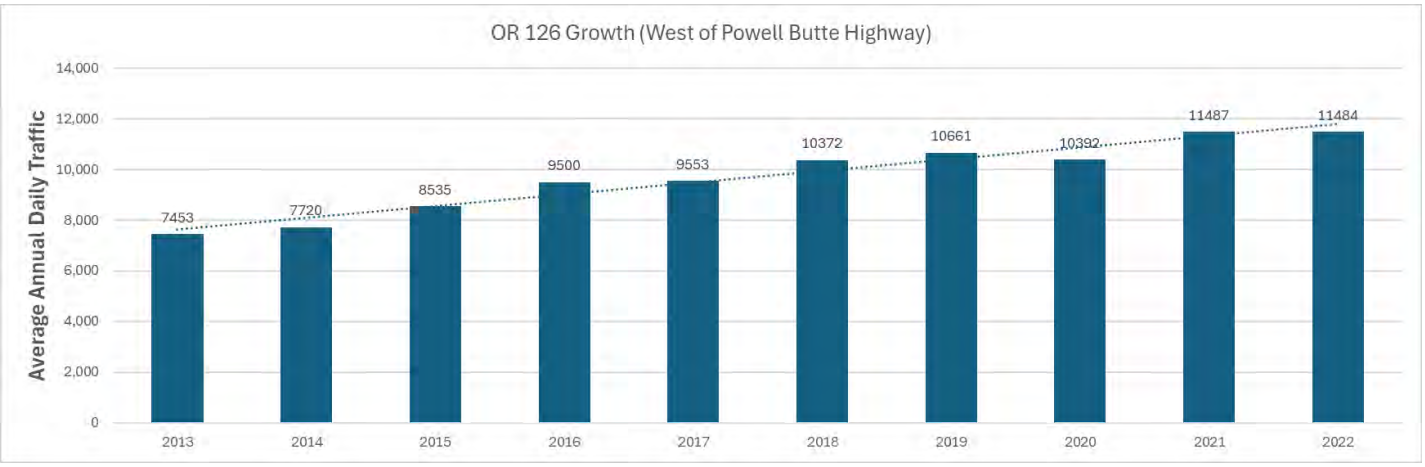


Figure 3-7. Historical AADT along OR 126 west of the Powell Butte Highway.

Given the prior analysis prepared for the SB 1544 lands as part of its original rezone, and consistent with other large-scale development projects within the City of Redmond, the proposed study area shown is limited to the area east of and including access routes onto the US 97 corridor. While there are likely to be intersections impacted by a maximum development scenario for these lands west of US 97, the

planning for this outright allowed growth was intended to be captured within the City's Transportation System Plan.

If a transportation master plan is not pursued for REG, and the project is instead subdivided for individual parcel sales and development, the scope of any future traffic analysis will be limited to the parcel-specific development plan, which will include a much more limited study area. The benefit of this master plan is to plan and accommodate the timing of transportation infrastructure serving the overall mixed-use employment site. Accordingly, the TIA includes the following "Study Intersections":

- Intersection #1: NE 9th Street/NE Maple Avenue
- Intersection #2: US 97/NE Hemlock Avenue
- Intersection #3: NE 9th Street/NE Hemlock Avenue
- Intersection #4: US 97/Antler Avenue
- Intersection #5: NE 9th Street/E Antler Avenue
- Intersection #6: SE 15th Street/Antler Avenue
- Intersection #7: SE 17th Street/Antler Avenue
- Intersection #8: SE 9th Street/Evergreen Avenue
- Intersection #9: US 97/Evergreen Avenue
- Intersection #10: Lake Road/OR 126
- Intersection #11: SE 9th Street/OR 126
- Intersection #12: SW Veterans Way/OR 126
- Intersection #13: US 97/SW Highland Avenue
- Intersection #14: US 97/SW Veterans Way
- Intersection #15: Airport Way/SW Veterans Way
- Intersection #16: US 97 Southbound Ramp/Yew Avenue
- Intersection #17: US 97 Northbound Ramp/Airport Way
- Intersection #18: SW 19th Street/Airport Way

4. Study Analysis Years

Redmond Development Code 8.2815 requires a study of the buildout year and a five-year forecast beyond the final phase. Since the build-out timeline of this property remains unknown and would occur over several years, this TIA assesses year 2040 conditions for City and ODOT intersections to comply with OHP requirements and provide a consistent future horizon year. Where deficiencies are identified, mitigations and the timing of the improvements will be determined through the analysis to help identify mitigation strategies and development triggers (as well as funding mechanisms).

During the preparation of this analysis additional information was developed by the project team providing a more specific phasing plan for the site. As detailed within the July 30, 2024 memorandum titled *REG Phasing and Modeling*, the following was identified:

- Initial utilities and Infrastructure: 2025 to 2026
- Initial occupancy: 2027
- 50% site build-out: 2031
- Full site build-out: 2036

Figure 3-8 provides the anticipated phasing plan for the site, showing how development is anticipated to be initiated from E Antler Avenue and continue south toward OR 126.

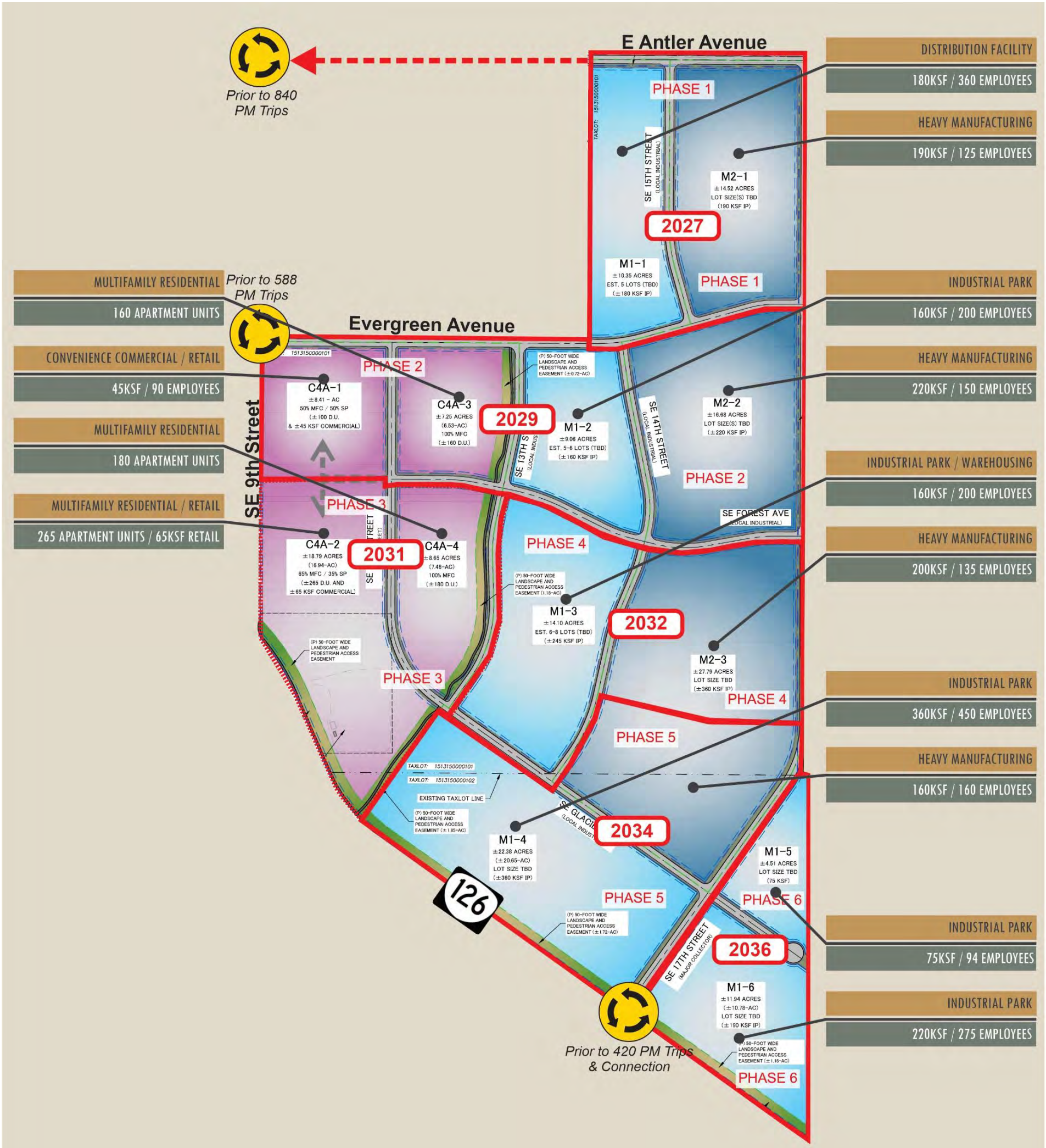


Figure 3-8. Summary of Development Timeline. *Image Source: Know Ledge Engineering.*

5. Study Time Periods

As required by City Code, the operational analysis assessed conditions during the weekday p.m. peak hour, which is the hour between 4:00 and 6:00 p.m. with the highest volume of entering traffic. All City transportation planning focuses on the weekday evening commute period as this reflects the highest overall Citywide travel period.

6. Traffic Counts

Redmond Development Code requires that traffic counts be no more than 12 months old from the date the Transportation Report is submitted. Counts must be obtained on a midweek day when school is in session and must include passenger vehicles, heavy vehicles, bicycles, and pedestrians. Traffic counts were collected at the study intersections in April 2023, and February and April of 2024 during the weekday p.m. peak period from 4:00 to 6:00 p.m. Table 3-1 summarizes the traffic count date at each of the study intersections.

Table 3-1. Study Intersection Traffic Counts

Intersection	Date of Traffic Count
1: NE 9th St / NE Maple Ave	4/9/2024
2: US 97 / NE Hemlock Ave	4/9/2024
3: NE 9th St / NE Hemlock Ave	2/1/2024
4: US 97 / Antler Ave	4/9/2024
5: NE 9th St / E Antler Ave	2/1/2024
6: SE 15th St / Antler Ave	*Future Intersection*
7: SE 17th St / Antler Ave	*Future Intersection*
8: SE 9th St / Evergreen Ave	4/9/2024
9: US 97 / Evergreen Ave	4/9/2024
10: Lake Rd / OR 126	4/9/2024
11: SE 9th St / OR 126	4/9/2024
12: Veterans Way / OR 126	4/9/2024
13: US 97 / SW Glacier Ave - SW Highland Ave	4/27/2023
14: US 97 / SW Veterans Way	2/27/2024
15: Airport Way / SW Veterans Way	2/27/2024
16: US 97 SB Ramp / Yew Ave	2/27/2024
17: US 97 NB Ramp / Airport Way	2/27/2024
18: SW 19th St / Airport Way	2/27/2024

The turning movement counts showed that the weekday p.m. peak hour varied throughout the study area with the earliest peak hour starting at 4:00 p.m. and the latest starting at 4:35 p.m. There did not appear to be any patterns with respect to the roadway facility or count date. As a result, a system peak for the entire study area was utilized and was found to be from 4:20 to 5:20 p.m.

The traffic count at the US 97/SW Glacier Avenue – SW Highland Avenue intersection was collected in April 2023. To adjust this count to year 2024 and be consistent with the other study intersections, a 1.2-percent annual growth rate was applied to the traffic count based on the annual growth at this intersection in the Transportation System Plan (see Table 3-2 under Future Traffic Forecasts).

The traffic counts are reflective of typical off-season conditions. Typical assessment of ODOT facilities requires seasonal adjustments to reflect the 30th highest hourly conditions, which are generally approximated using mid-summer weekday traffic counts. To account for seasonal variations at the study intersections on US 97 from SW Glacier Avenue to the north, ODOT's Automatic Traffic Recorder at Station 09-022 (located on US 97, 0.04 miles north of SW Antler Avenue) was reviewed for the past five years. The data reflects an adjustment from the 15th day of the month. Since the US 97 counts from 2024 were conducted on April 9th, the adjustment factor was interpolated between the March 15th and April 15th data points. Accordingly, a seasonal adjustment factor of 11.2% was applied to these US 97 study intersections to reflect peak July conditions. The US 97/SW Glacier Avenue – SW Highland Avenue intersection was counted on April 27, 2023. This seasonal adjustment factor was interpolated between the April 15th and May 15th data, with a resulting factor of 8.4% applied to this intersection.

Similarly, to account for seasonal variations at the study intersection on OR 126, ODOT's Automatic Traffic Recorder at Station 07-002 (located on OR 126, 0.35 miles west of the Deschutes/Crook County Line) was reviewed for the past five years. This showed that the April traffic counts on OR 126 should be increased by 8.2% (interpolated from March and April data) to reflect peak July conditions.

However, the study area includes some ODOT facilities that are subject to alternative mobility standards that are based on typical (average annual), not 30th highest hourly, conditions. Therefore, these intersections will have different seasonal adjustment factors than the ODOT facilities without alternative mobility standards.

Based on review of permanent traffic count station ATR 09-022 near Antler Avenue and station ATR 09-020 south of Yew Avenue, this typical condition occurs in the shoulder seasons around April or October, outside of the tourist season when area schools are in session.

This analysis shows the following:

- 30th Highest Hourly Volumes could be obtained by adjusting the February counts by 18%.
- Typical average annual volumes could be obtained by adjusting the late February counts by 10%.

Since the US 97 counts at Veterans Way and the Yew Avenue ramps were conducted on February 27th, the adjustment factor is interpolated between the February 15th and March 15th data points. Accordingly, a seasonal adjustment factors of 7.9% was applied to these US 97 study intersections.

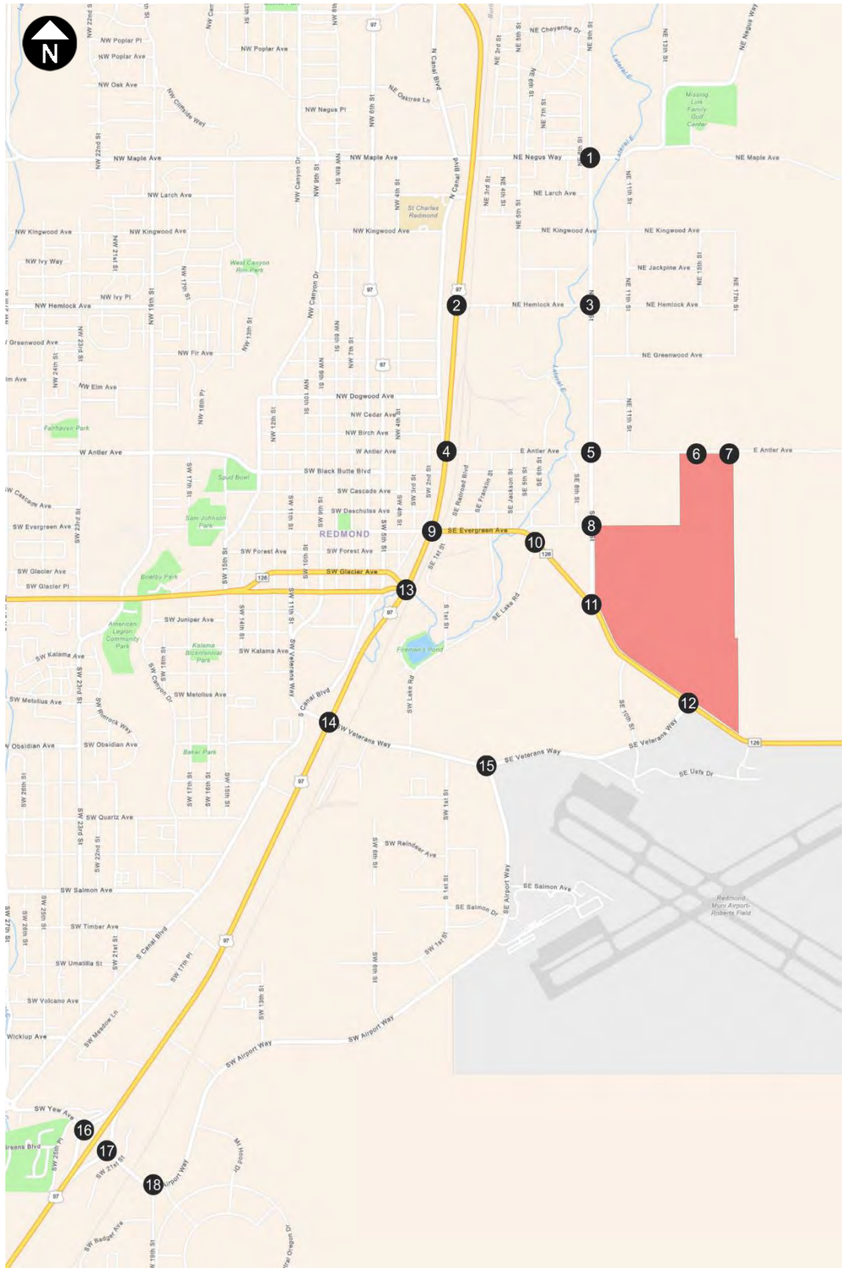
Table 3-2 shows the seasonal adjustment factors applied to each intersection under ODOT's jurisdiction along with the reference ATR station used in identifying the appropriate adjustment factor.

Table 3-2. Study Intersection Seasonal Adjustment

Intersection	Alternative Mobility Standard?	Reference ATR Station	Seasonal Adjustment Factor
2: US 97 / NE Hemlock Ave	No	ATR 09-022	1.112
4: US 97 / Antler Ave	No	ATR 09-022	1.112
9: US 97 / Evergreen Ave	No *No OHP amendment despite inclusion in Redmond/ODOT Agreement No. 28621 and in City TSP*	ATR 09-022	1.112
10: Lake Rd / OR 126	No	ATR 07-002	1.082
11: SE 9th St / OR 126	No	ATR 07-002	1.082
12: Veterans Way / OR 126	No	ATR 07-002	1.082
13: US 97 / SW Glacier Ave - SW Highland Ave	No *No OHP amendment despite inclusion in Redmond/ODOT Agreement No. 28621*	ATR 09-022	1.084
14: US 97 / SW Veterans Way	Yes *OHP amendment adopted 11/9/2021*	ATR 09-020 ATR 09-022	1.079
16: US 97 SB Ramp / Yew Ave	Yes *OHP amendment adopted 11/9/2021*	ATR 09-020 ATR 09-022	1.079
17: US 97 NB Ramp / Airport Way	Yes *OHP amendment adopted 11/9/2021*	ATR 09-020 ATR 09-022	1.079

OHP: Oregon Highway Plan

Figure 3-9 depicts the existing and seasonally adjusted 2024 traffic volumes applied within the existing conditions analysis.


N
NW Poplar Pl
NW Poplar Ave
NW Oak Ave
NW Negus Pl
NW Maple Ave
NW Larch Ave
NW Kingwood Ave
NW Ivy Way
NW Ivy Pl
NW Hemlock Ave
NW Greenwood Ave
NW Fir Ave
NW Elm Ave
NW Dogwood Ave
NW Cedar Ave
NW Birch Ave
W Antler Ave
SW Black Butte Blvd
SW Cascade Ave
SW Deschutes Ave
SW Forest Ave
SW Glacier Ave
SW Glacier Pl
SW Juniper Ave
SW Kalama Ave
SW Metolius Ave
SW Obsidian Ave
SW Quartz Ave
SW Salmon Ave
SW Timber Ave
SW Umatilla St
SW Volcano Ave
Wicklup Ave
SW Yew Ave
SW Badger Ave
SW Airport Way
SW Veterans Way
SE Veterans Way
SE Evergreen Ave
SE Lake Rd
SE Salmon Ave
SE Salmon Dr
SE Uvas Dr
SW Rainbow Ave
SW Meadow Ln
SW Canyon Dr
SW Canyon Rd
SW Cedar Blvd
SW Century Dr
SW Redmond Way
SW Glacier Blvd
SW Veterans Way
SW Airport Way
SW Yew Ave
SW Salmon Ave
SW Timber Ave
SW Umatilla St
SW Volcano Ave
SW Wicklup Ave
SW Meadow Ln
SW Rainbow Ave
SW Badger Ave
SW Quartz Ave
SW Obsidian Ave
SW Metolius Ave
SW Juniper Ave
SW Kalama Ave
SW Forest Ave
SW Glacier Ave
SW Evergreen Ave
SW Yew

7. FUTURE TRAFFIC FORECASTS

Traffic forecast information is available in both the Redmond Transportation System Plan and in the macro-level travel demand model provided by ODOT's Transportation Planning and Analysis Unit. These data sources were consulted in the development of area forecasts.

The City's 2020 Transportation System Plan includes existing 2017 and forecast 2040 traffic volumes at major intersections around the City. Table 3-3 shows the base volumes and future forecast "No Build" volumes in 2040 at eleven of the TSP intersections within the study area. These forecast volumes do not take into account the SE 9th Street extension and roundabouts on SE 9th Street at OR 126 or SW Veterans Way. As shown in the table, without the SE 9th Street extension, annual growth rates are expected to range from 1-percent (the 0% growth shown at NE 9th Street/ E Antler Avenue is assumed to be an error) to over 3-percent at the SW Airport Way/SW 19th Street intersection.

Table 3-3. Forecast Growth from City of Redmond TSP (2017 to 2040)

Intersection	Year 2017 Base Entering Volumes Weekday PM Peak Hour	Year 2040 Future (No Build) Entering Volumes Weekday PM Peak Hour	Annual Growth
3: NE 9th St / NE Hemlock Ave	473	695	2.0%
5: NE 9th St / E Antler Ave	469	469*	0.0%
9: US 97 / Evergreen Ave	3,338	4,401	1.4%
11: SE 9th St / OR 126	888	1,309	2.1%
12: Veterans Way / OR 126	1,119	1,559	1.7%
13: US 97 / SW Glacier Ave - SW Highland Ave	3,447	4,382	1.2%
14: US 97/ SW Veterans Way	4,017	4,917	1.0%
15: Airport Way/ SW Veterans Way	758	1,035	1.6%
16: US 97 SB Ramp / Yew Ave	1,419	1,863	1.4%
17: US 97 NB Ramp / Airport Way	1,394	1,915	1.6%
18: SW 19th St / Airport Way	734	1,266	3.2%

*The 0% change in volume identified within the TSP between 2017 and 2040 at NE 9th Street/E Antler Avenue is assumed to be an error.

The travel demand model uses the same forecasting process (and travel demand modeling information) as was applied within the City's Transportation System Plan but includes updated information from the SB 1544 lands and the DSL lands to the south, along with inclusion of the planned SE 9th Street connection. The regional travel demand models identify current and projected population (by housing types) and employment (by category) forecasts by individual zones (Transportation Analysis Zone, or TAZ)

throughout the City. Existing census data is used to help calibrate the model's trip generation parameters. These TAZ areas are connected by roads, with information input on roadway classification, number of lanes, speeds, and intersection types. Trips within the model distribute throughout the roadway network based on overall travel times, providing estimates of weekday daily and weekday p.m. peak hour trip forecasts. However, there are several limitations within the modeling process that must also be accounted for:

- As a gravity model, constrained conditions along a corridor forces traffic onto other corridors, potentially masking the level of congestion.
- The REG is located on the periphery of the model, so external trips outside the model are generally "hard-coded" as static numbers. The model will not show a draw toward Prineville, and is not automatically calibrated with the regional planning underway by Crook County.
- New links within the model cannot be calibrated with observed traffic data. The level of accuracy obtained with new roadway links is low.
- The model includes a manual allocation of jobs and housing across the City. However, a more concentrated growth in jobs or housing, or higher levels than anticipated, can alter the model results.
- Travel demand models load trips onto the system from the established connections from the grouping of lands (TAZ) to the roadway network. The specific access locations can vary from these, resulting in changes to how access intersections or locations adjacent to significant growth areas operate.
- The travel demand models are used to calibrate segment link volumes, not intersection turning movement patterns that are used in the operational analysis. Iterative techniques are used to convert these values based on current turning movement trends and future segment balancing, but these iterative methodologies impart a high level of uncertainty.
- Calibration of the travel demand models with segment link volumes only occurs periodically, generally only as part of regional planning updates. The Bend-Redmond travel demand model is currently calibrated for base year 2019 and future year 2040 conditions, so interpolation is required to calibrate residual growth from current conditions (2024) to 2040.

For these reasons, travel demand models serve as a forecasting tool but require substantial manual review, calibration, and post-processing. While the models are managed by ODOT's Transportation Planning and Analysis Unit (TPAU), staff at the agency also manage the regional travel demand models for nearly all agencies throughout Oregon. TPAU staff are based in Salem and are not generally aware of local development plans or travel nuances, which makes it critical to provide a detailed review and calibration of the model outputs, but recognizing that even with this review the level of confidence in the forecasts remains fairly low. NCHRP Report 765 (Analytical Travel Forecasting Approaches for Project-Level Planning and Design, 2014) shows that this level of error is nearly 50% for 20-year forecasts (see Figure 3-10).

Table 4-2. Model accuracy expectations as a function of time horizon.

Forecast Horizon	Existing Road	New Road
Next Day	±7.5%	NA
1 Year	±12.5%	±17.5%
5 Years	±20.0%	±27.5%
20 Years	±42.5%	± 47.5%

Figure 3-10. NCHRP Report 765 summary of travel demand forecast model accuracy.

The resulting travel demand model with the SE 9th Street extension shows much higher growth rates throughout the study area. Along the 9th Street corridor, annual growth rates range from 6-percent to over 10-percent. Growth on OR 126 ranges from 2- to 5-percent per year. On SW Airport Way between SW Veterans Way and SW 19th Street, annual growth rates generally range from 4- to 6-percent. More significant growth is shown on SW 19th Street, with a corresponding higher growth rate (approximately 7-percent) on SW Airport Way to the US 97 ramps west of SW 19th Street. The lowest annual growth rates are shown on US 97 with 1- to 2-percent. The higher growth rates also show the impact of the updated assumptions from the SB 1544 and DSL lands.

Typically, the base and future year segment travel forecasts from the model are then combined with turning movement count data within the iterative NCHRP 255 process, which factors and converts the model's link volumes into turning volumes that can be assessed using microscopic analysis tools. This methodology has challenges when new roadway connections are added, such as the SE 9th Street extension. In addition, review of the model showed several additional issues as listed below:

- The number of trips from SB 1544 lands is grossly underestimated in comparison to its prior analysis. The impacted TAZ boundaries for the SB 1544 lands show a total of 420 weekday p.m. peak hour trips despite the rezoning of these lands to support large-lot industrial and employment in 2012 as part of Senate Bill 1544, which was premised on 1,500 weekday p.m. peak hour trips throughout the 465-acre property.
- The travel demand model includes the planned 9th Street extension and the existing SW Veteran's Way connection to Airport Way, with higher reliance on Veteran's Way for travel toward the south.
- The model does not extend east of the City or include Prineville, so without any attractions there are no trips assigned toward the east within the model. Travel volumes to the east are "hard-coded" into the forecasts and have not been synchronized with Crook County's current planning.
- The DSL lands to the south are expected to have substantial growth with potentially 6,000 employees; while it is unlikely that this level of development will occur by 2040, this area presents a wide range of employment options. The 2040 model assigns 402 p.m. trips on SW 19th Street to the south of Airport Way; this equates to 1,000 employees.
- The City is preparing a TSP amendment that would include a new interchange south of Yew Avenue that connects to the DSL properties. This is not adopted, but would likely be needed to reach higher growth scenarios within the DSL lands.

To compensate for the discrepancies in the model, the future volumes were initially developed through the NCHRP 255 process where the intersection turning patterns are developed individually, then combined and adjusted for balancing and area context. These initial volumes were then adjusted to account for the new SE 9th Street connection and additional trips from the Redmond Airport terminal expansion, DSL lands, and Skyline Village, and removal of the REG portion of the SB 1544 lands. For the purpose of this analysis, 1,000 additional employees were assumed for the DSL lands (based on the assumptions within the City's adopted Transportation System Plan), with the assumption that the Elkhorn Avenue extension or Quarry Avenue interchange would be required to support growth scenarios that exceed these employment levels (which is further discussed within this report).

Planned and Funded Projects

The City's five-year Capital Improvement Plan includes multiple transportation projects within the study area that are assumed to be completed within the 2040 study timeframe. These include the following:

- TR2403 – Eastside Arterial: SE 9th Street extension from Veterans Way to OR 126, roundabouts at Veterans Way/SE 9th Street and OR 126/SE 9th Street, and street improvements on SE 9th Street from OR 126 to Hemlock.
- TR2202 – SW 19th Airport Way Roundabout: New single-lane roundabout

The resulting volumes for 2040 without the REG project are illustrated in Figure 3-11.

Year 2040 projected "with project" volumes were developed by adding the site-generated traffic from Figure 3-5 with the base 2040 volumes in Figure 3-11. The resulting 2040 volumes with the REG project are shown in Figure 3-12.

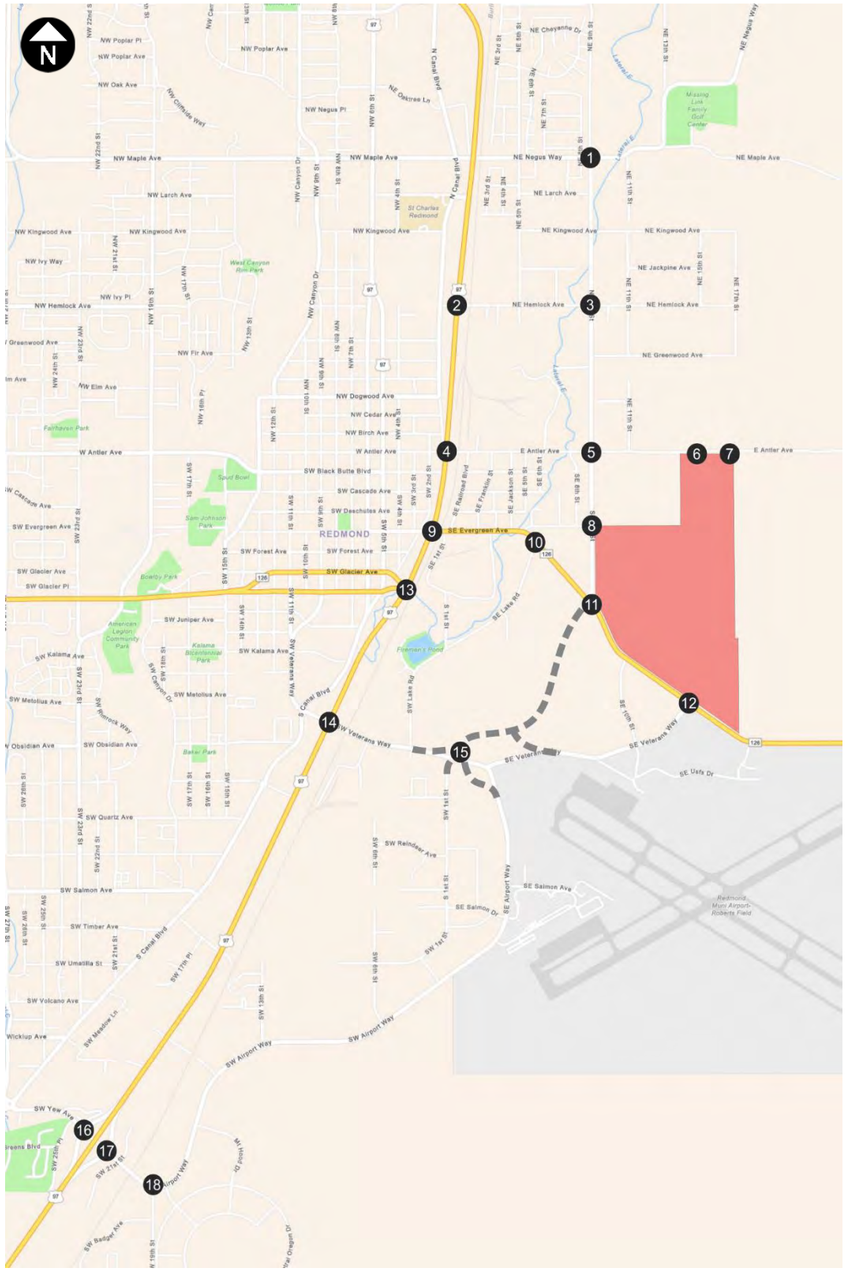


Figure 3-11. Future Year 2040 No Build Traffic Volumes, Weekday PM Peak Hour/Average Annual Conditions/30th Highest Hour.

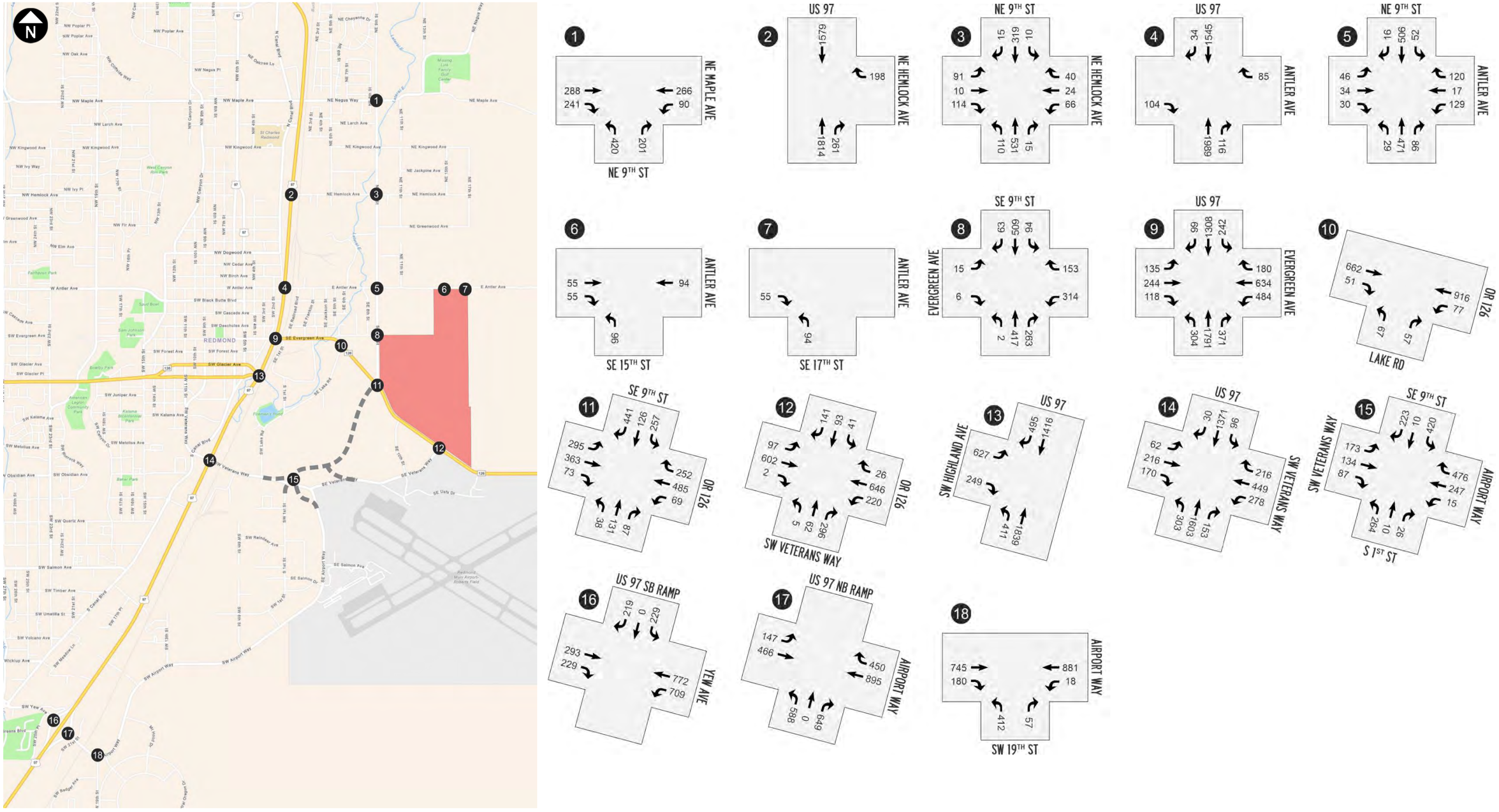


Figure 3-12. Future Year 2040 "With Project" Traffic Volumes, Weekday PM Peak Hour/30th Highest Hour

8. Operations Analysis Methodology

This section of the report describes the current and future transportation system conditions along with the impacts of the Redmond East Gateway development on the transportation system at build-out.

Traffic operations analysis were prepared using Synchro 10 software and implementing the Highway Capacity Manual 6th Edition operations methods for signalized, stop-controlled, and roundabout intersections. All traffic operations within this report reflect peak fifteen-minute conditions with the exception of the US 97/Veterans Way intersection and US 97 interchange ramps at Yew Avenue as there are adopted alternative mobility standards based on peak hour operations at these locations. The study intersections are under the jurisdictions of the City of Redmond and ODOT, and each jurisdiction includes varying operational standards based on factors such as traffic control type, roadway classifications and characteristics, and various performance aspects.

The City of Redmond Development Code 8.2815(2)(B)(8) contains the City operational requirements for intersections. Performance standards in the City of Redmond vary based on intersection control type as summarized below:

- LOS "E" or better during the peak fifteen minutes of the peak hours of the average weekday for signalized and all-way stop controlled intersections.
- The critical movement at unsignalized minor street approaches and roundabouts should operate with a LOS "E" or better, or a volume-to-capacity ratio of 0.90 or less and with a 95th percentile queue of less than four vehicles during the peak hour.

Ten of the study intersections are under the jurisdiction of ODOT. Intersections under ODOT jurisdiction require compliance with the Oregon Highway Plan mobility targets based on Action 1F. Table 6 of the OHP summarizes the relevant ODOT mobility targets outside the Portland Metropolitan area; ODOT performance standards vary by location of the facility (urban vs. rural), State Functional Classification, and posted speed. Based on this table, intersections on US 97 and OR 126 generally have a target v/c ratio less than or equal to 0.80 in the City of Redmond, and by standard policies the ramp terminal intersections within the study area typically include a target v/c ratio of 0.85. The Lake Road/OR 126 intersection has a target v/c ratio of 0.85 based on its lower posted speed. The minor street movements at these intersections are expected to meet the standards for District/Local Interest Roads.

ODOT has adopted Alternative Mobility Standards at the US 97/Veterans Way intersection and the Yew Avenue ramp terminals (as well as five other locations outside the study area of this project). This need was identified within 2012 Senate Bill 1544 and Intergovernmental Agreement #28621. The alternative target was formally approved within File Number FAC-03-21 by the Oregon Transportation Commission. The Oregon Highway Plan amendment registry states that the US 97/Veteran's Way intersection is approved for an overall volume-to-capacity ratio of 1.0 (during the overall hour of an average weekday per the supporting technical materials). This deviates from a typical analysis that would focus on the critical 15-minute period of the 30th highest hour.

An alternative mobility standard at the US 97/Evergreen Avenue intersection was not included in File Number FAC-03-21. The need at this intersection was also identified within 2012 Senate Bill 1544 and Intergovernmental Agreement #28621, and was planned to be amended within the City's Transportation System Plan Update. The documents indicated that the City and ODOT Region 4 would pursue an overall volume-to-capacity ratio of 1.0 during the overall hour of an average weekday. As an alternative mobility standard was not adopted at this intersection within the OHP amendments, the performance standard remains at a v/c ratio of 0.80. Our discussions with ODOT staff have indicated that they were not aware

of these prior agreements with the City of Redmond to modify the mobility standards and are reviewing updates to these mobility targets.

Accounting for the adopted alternative mobility targets, study intersections, traffic control, roadway jurisdiction, and operational standards/mobility targets throughout the study area are summarized in Table 3-4.

Table 3-4. Study Area Intersection Operational Standards and Mobility Targets

Intersection	Traffic Control	Jurisdiction	Performance/ Mobility Standard
1: NE 9th St / NE Maple Ave	Minor-Street Stop-Control	City of Redmond	v/c < 0.90 95th % Queue < 100 ft
2: US 97 / NE Hemlock Ave	Merge Lane*	ODOT	US 97 v/c ≤ 0.80 Hemlock Ave v/c ≤ 0.95
3: NE 9th St / NE Hemlock Ave	All-Way Stop-Control	City of Redmond	LOS "E" or Better
4: US 97 / Antler Ave	Minor-Street Stop-Control	ODOT	US 97 v/c ≤ 0.80 Antler Ave v/c ≤ 0.95
5: NE 9th St / E Antler Ave	Minor-Street Stop-Control	City of Redmond	v/c < 0.90 95th % Queue < 100 ft
6: SE 15th St / Antler Ave	Future Minor-Street Stop-Control	City of Redmond	v/c < 0.90 95th % Queue < 100 ft
7: SE 17th St / Antler Ave	Future Minor-Street Stop-Control	City of Redmond	v/c < 0.90 95th % Queue < 100 ft
8: SE 9th St / Evergreen Ave	Minor-Street Stop-Control	City of Redmond	v/c < 0.90 95th % Queue < 100 ft
9: US 97 / Evergreen Ave	Signalized	ODOT	v/c ≤ 0.80
10: Lake Rd / OR 126	Minor-Street Stop-Control	ODOT	OR 126 v/c ≤ 0.85 Lake Rd v/c ≤ 0.95
11: SE 9th St / OR 126	Minor-Street Stop-Control**	ODOT	OR 126 v/c ≤ 0.80 SE 9th St v/c ≤ 0.90
12: Veterans Way / OR 126	Minor-Street Stop-Control	ODOT	OR 126 v/c ≤ 0.80 Veterans Way v/c ≤ 0.90
13: US 97 / SW Glacier Ave - SW Highland Ave	Signalized	ODOT	v/c ≤ 0.80
14: US 97 / SW Veterans Way	Signalized	ODOT	v/c ≤ 1.00 (Overall Hour, Average Weekday Conditions)
15: Airport Way / SW Veterans Way	All-Way Stop-Control**	City of Redmond	LOS "E" or Better
16: US 97 SB Ramp / Yew Ave	Signalized	ODOT	v/c ≤ 1.00 (Overall Hour, Average Weekday Conditions)

Table 3-4 (Continued). Study Area Intersection Operational Standards and Mobility Targets

Intersection	Traffic Control	Jurisdiction	Performance/ Mobility Standard
17: US 97 NB Ramp / Airport Way	Signalized	ODOT	v/c ≤ 1.00 (Overall Hour, Average Weekday Conditions)
18: SW 19th St / Airport Way	Minor-Street Stop-Control**	City of Redmond	v/c < 0.90 95th % Queue < 100 ft

*The US 97/NE Hemlock Avenue functions and is striped as a short merge lane onto US 97. Conservatively, this analysis treats the movement as a stop-controlled approach rather than as a free right turn.

**Future roundabout included in CIP

Year 2024 Existing Traffic Conditions

The existing year 2024 traffic conditions reflect the current operations throughout the study area during the weekday p.m. peak hour. This analysis is used to calibrate operational models to field conditions, and in conjunction with historical safety information, is intended to help understand and prioritize transportation system improvement needs. Table 3-5 summarizes the existing operations at the study intersections. As shown in the table, all of the study area intersections operate acceptably today with the exception of the US 97/Evergreen Avenue intersection. This intersection currently exceeds capacity with a v/c ratio of 1.07 and has long queues on the north and south approaches. Additionally, 95th percentile queues at the US 97/Veterans Way intersection are 500 feet or more in the northbound and southbound through lanes.

Year 2040 Future Analysis

The future analysis scenarios were prepared for comparative purposes to demonstrate the impact of the Redmond East Gateway development on the surrounding area transportation infrastructure. This assessment, summarized in Table 3-6, shows many locations within the study area will experience operational deficiencies through the planning horizon. These include the following:

- NE 9th Street/NE Maple Avenue
- NE 9th Street/E Antler Avenue
- SE 9th Street/Evergreen Avenue
- US 97/Evergreen Avenue
- Lake Road/OR 126
- SE 9th Street/OR 126
- Veterans Way/OR 126
- US 97/SW Glacier Avenue – SW Highland Avenue
- US 97/SW Veterans Way
- Airport Way/SW Veterans Way
- US 97 NB Ramp/Airport Way
- SW 19th Street/Airport Way

In addition, while the NE 9th Street/NE Hemlock Avenue intersection will meet City level of service standards in the future, it is expected to exceed capacity on the northbound leg and operate with high delays in the future with full buildout of the site.

Table 3-5. Summary of Existing Intersection Operations, Weekday PM Peak Hour/Average Annual Conditions/30th Highest Hour

Intersection	Performance/ Mobility Standard	LOS	Delay (s/veh)	v/c Ratio	95th % Queue	Acceptable?
1: NE 9th St / NE Maple Ave	v/c < 0.90 95th % Queue < 100 ft	NB L: LOS C	NB L: 15.2 s	NB L: 0.39	NB L: 50 ft	Yes
2: US 97 / NE Hemlock Ave	US 97 v/c ≤ 0.80 Hemlock Ave v/c ≤ 0.95	WB R: LOS C	WB R: 17.0 s	WB R: 0.18	WB R: 25 ft	Yes
3: NE 9th St / NE Hemlock Ave	LOS "E" or Better	Overall: LOS A NB L: LOS A NB TR: LOS B SB L: LOS A SB TR: LOS A EB LTR: LOS A WB LTR: LOS A	Overall: 9.4 s NB L: 8.7 s NB TR: 10.1 s SB L: 8.7 s SB TR: 9.6 s EB LTR: 8.6 s WB LTR: 9.0 s	NB L: 0.03 NB TR: 0.29 SB L: 0.02 SB TR: 0.21 EB LTR: 0.16 WB LTR: 0.17	NB L: 1 Vehicle NB TR: 2 Vehicles SB L: 0 Vehicles SB TR: 1 Vehicle EB LTR: 1 Vehicle WB LTR: 1 Vehicle	Yes
4: US 97 / Antler Ave	US 97 v/c ≤ 0.80 Antler Ave v/c ≤ 0.95	WB R: LOS C	WB R: 16.8 s	WB R: 0.09	WB R: 25 ft EB R: 25 ft	Yes
5: NE 9th St / E Antler Ave	v/c < 0.90 95th % Queue < 100 ft	EB LTR: LOS B	EB LTR: 12.5 s	EB LTR: 0.06	EB LTR: 25 ft WB LTR: 25 ft	Yes
6: SE 15th St / Antler Ave	v/c < 0.90 95th % Queue < 100 ft					
7: SE 17th St / Antler Ave	v/c < 0.90 95th % Queue < 100 ft					
8: SE 9th St / Evergreen Ave	v/c < 0.90 95th % Queue < 100 ft	EB LR: LOS B	EB LR: 12.0 s	EB LR: 0.05	EB LR: 25 ft	Yes
9: US 97 / Evergreen Ave	v/c ≤ 0.80	LOS E	61.5 s	**1.07**	EB L: 160 ft EB TR: 165 ft WB L: 435 ft WB TR: 410 ft NB L: 295 ft NB T: 785 ft NB R: 65 ft SB L: 225 ft SB T: 550 ft SB R: <25 ft	No
10: Lake Rd / OR 126	OR 126 v/c ≤ 0.85 Lake Rd v/c ≤ 0.95	NB LR: LOS C	NB LR: 19.0 s	NB LR: 0.30	NB LR: 50 ft	Yes
11: SE 9th St / OR 126	OR 126 v/c ≤ 0.80 SE 9th St v/c ≤ 0.90	SB LR: LOS E	SB LR: 36.4 s	SB LR: 0.73	SB LR: 150 ft EB LT: 25 ft	Yes
12: Veterans Way / OR 126	OR 126 v/c ≤ 0.80 Veterans Way v/c ≤ 0.90	NB LR: LOS C	NB LR: 19.5 s	NB LR: 0.59	NB LR: 100 ft	Yes
13: US 97 / SW Glacier Ave - SW Highland Ave	v/c ≤ 0.80	LOS C	21.1 s	0.68	EB L: 200 ft EB R: 70 ft NB L: 200 ft NB T: 180 ft SB T: 40 ft SB R: <25 ft	Yes
14: US 97 / SW Veterans Way	v/c < 1.00 *(Alternative Mobility Standard)*	LOS C	29.1 s	0.79	EB L: 85 ft EB T: 180 ft EB R: 40 ft WB L: 185 ft WB TR: 205 ft NB L: 135 ft NB TR: 590 ft SB L: 40 ft SB TR: 500 ft	Yes
15: Airport Way / SW Veterans Way (All-Way Stop)	LOS "E" or Better	Overall: LOS C EB L: LOS B EB T: LOS B WB: LOS C SB: LOS C	Overall: 15.2 s EB L: 11.5 s EB T: 10.1 s WB: 17.4 s SB: 15.2 s	EB L: 0.24 EB T: 0.16 WB: 0.65 SB: 0.55	EB L: 1 Vehicle EB T: 1 Vehicle WB: 5 Vehicles SB: 4 Vehicles	Yes
16: US 97 SB Ramp / Yew Ave	v/c < 1.00 *(Alternative Mobility Standard)*	LOS B	10.3 s	0.53	EB T: 120 ft EB R: 35 ft WB L: 95 ft WB T: 185 ft SB LT: 80 ft SB R: 45 ft	Yes
17: US 97 NB Ramp / Airport Way	v/c < 1.00 *(Alternative Mobility Standard)*	LOS C	24.5 s	0.76	EB L: 40 ft EB T: 80 ft WB T: 385 ft WB R: 35 ft NB L: 295 ft NB TR: <25 ft	Yes
18: SW 19th St / Airport Way	v/c < 0.90 95th % Queue < 100 ft	NB L: LOS C NB R: LOS B	NB L: 24.3 s NB R: 11.2 s	NB L: 0.22 NB R: 0.02	NB L: 25 ft NB R: 25 ft WB L: 0 ft	Yes

Table 3-6. Summary of Year 2040 Intersection Operations, Weekday PM Peak Hour/Average Annual Conditions/30th Highest Hour

Intersection	Performance/ Mobility Standard	2040 Background Conditions				2040 With Site Conditions				Acceptable?
		LOS	Delay (s/veh)	v/c Ratio	95th % Queue	LOS	Delay (s/veh)	v/c Ratio	95th % Queue	
1: NE 9th St / NE Maple Ave	v/c < 0.90 95th % Queue < 100 ft	NB L: LOS F	NB L: >50.0 s	**NB L: 0.91**	**NB L: 225 ft**	NB L: LOS F	NB L: >50.0 s	**NB L: 1.96**	**NB L: >600 ft**	No
2: US 97 / NE Hemlock Ave	US 97 v/c ≤ 0.80 Hemlock Ave v/c ≤ 0.95	WB R: LOS E	WB R: 39.9 s	WB R: 0.65	WB R: 125 ft	WB R: LOS F	WB R: >50.0 s	WB R: 0.82	WB R: 175 ft	Yes
3: NE 9th St / NE Hemlock Ave	LOS "E" or Better	Overall: LOS C NB L: LOS B NB TR: LOS C SB L: LOS A SB TR: LOS B EB LTR: LOS B WB LTR: LOS B	Overall: 15.4 s NB L: 10.5 s NB TR: 20.3 s SB L: 9.8 s SB TR: 14.0 s EB LTR: 12.5 s WB LTR: 11.5 s	NB L: 0.16 NB TR: 0.68 SB L: 0.02 SB TR: 0.43 EB LTR: 0.36 WB LTR: 0.24	NB L: 1 Vehicle NB TR: 6 Vehicles SB L: 1 Vehicle SB TR: 3 Vehicles EB LTR: 2 Vehicles WB LTR: 1 Vehicle	Overall: LOS E NB L: LOS B NB TR: LOS F SB L: LOS B SB TR: LOS C EB LTR: LOS C WB LTR: LOS B	Overall: 43.0 s NB L: 11.9 s NB TR: >50.0 s SB L: 10.5 s SB TR: 24.3 s EB LTR: 15.7 s WB LTR: 13.7 s	NB L: 0.23 **NB TR: 1.04** SB L: 0.02 SB TR: 0.70 EB LTR: 0.45 WB LTR: 0.29	NB L: 1 Vehicle NB TR: 17 Vehicles SB L: 1 Vehicle SB TR: 6 Vehicles EB LTR: 3 Vehicles WB LTR: 2 Vehicles	Yes
4: US 97 / Antler Ave	US 97 v/c ≤ 0.80 Antler Ave v/c ≤ 0.95	WB R: LOS C	WB R: 24.9 s	WB R: 0.24	WB R: 25 ft EB R: 50 ft	WB R: LOS D	WB R: 31.0 s	WB R: 0.39	WB R: 50 ft EB R: 50 ft	Yes
5: NE 9th St / E Antler Ave	v/c < 0.90 95th % Queue < 100 ft	EB LTR: LOS C	EB LTR: 24.4 s	EB LTR: 0.33	EB LTR: 50 ft WB LTR: 25 ft	EB LTR: LOS F WB LTR: LOS F	EB LTR: >50.0 s WB LTR: >50.0	EB LTR: 0.87 **WB LTR: 1.68**	**EB LTR: 150 ft** **WB LTR: 500 ft**	No
6: SE 15th St / Antler Ave	v/c < 0.90 95th % Queue < 100 ft					NB: LOS B	NB: 10.4 s	NB: 0.14	NB: 25 ft	Yes
7: SE 17th St / Antler Ave	v/c < 0.90 95th % Queue < 100 ft					NB: LOS A	NB: 9.1 s	NB: 0.11	NB: 25 ft	Yes
8: SE 9th St / Evergreen Ave	v/c < 0.90 95th % Queue < 100 ft	EB LR: LOS C	EB LR: 16.7 s	EB LR: 0.07	EB LR: 25 ft	EB LTR: LOS F WB LTR: LOS F	EB LTR: >50.0 s WB LTR: >50.0	EB LTR: 0.26 **WB LTR: >2.0**	EB LTR: 25 ft **WB LTR: >600 ft**	No
9: US 97 / Evergreen Ave	v/c ≤ 0.80	LOS F	>80.0 s	**1.51**	EB L: 275 ft EB TR: 285 ft WB L: 605 ft WB TR: 810 ft NB L: 465 ft NB T: 1160 ft NB R: 40 ft SB L: 320 ft SB T: 835 ft SB R: <25 ft	LOS F	>80.0 s	**1.74**	EB L: 275 ft EB TR: 430 ft WB L: 825 ft WB TR: 1140 ft NB L: 435 ft NB T: 1190 ft NB R: 45 ft SB L: 475 ft SB T: 835 ft SB R: <25 ft	No
10: Lake Rd / OR 126	OR 126 v/c ≤ 0.85 Lake Rd v/c ≤ 0.95	NB LR: LOS D	NB LR: 33.5 s	NB LR: 0.52	NB LR: 75 ft	NB LR: LOS F	NB LR: >50.0 s	**NB LR: 1.21**	NB LR: 225 ft	No
11: SE 9th St / OR 126 (Roundabout)	v/c ≤ 0.80	Overall: LOS B EB LTR: LOS B WB LTR: LOS B NB LTR: LOS A SB LTR: LOS B	Overall: 11.9 s EB LTR: 10.5 s WB LTR: 12.8 s NB LTR: 8.7 s SB LTR: 13.5 s	EB LTR: 0.54 WB LTR: 0.65 NB LTR: 0.29 SB LTR: 0.58	EB LTR: 3 Vehicles WB LTR: 5 Vehicles NB LTR: 1 Vehicle SB LTR: 4 Vehicles	Overall: LOS F EB LTR: LOS E WB LTR: LOS F NB LTR: LOS C SB LTR: LOS F	Overall: 78.8 s EB LTR: 42.8 s WB LTR: >50.0 s NB LTR: 18.2 s SB LTR: >50.0 s	**EB LTR: 0.95** **WB LTR: 1.06** NB LTR: 0.54 **SB LTR: 1.23**	EB LTR: 15 Vehicles WB LTR: 21 Vehicles NB LTR: 3 Vehicle SB LTR: 31 Vehicles	No
12: Veterans Way / OR 126	OR 126 v/c ≤ 0.80 Veterans Way v/c ≤ 0.90	NB LR: LOS D	NB LR: 27.7 s	NB LR: 0.68	NB LR: 125 ft	NB LTR: LOS F SB L: LOS F SB TR: LOS F	NB LTR: >50.0 s SB L: >50.0 s SB TR: >50.0 s	**NB LTR: >2.0** **SB L: >2.0** **SB TR: >2.0**	NB LTR: error SB L: error SB TR: >500 ft	No

Table 3-6 (Continued). Summary of Year 2040 Intersection Operations, Weekday PM Peak Hour/Average Annual Conditions/30th Highest Hour

Intersection	Performance/ Mobility Standard	2040 Background Conditions				2040 With Site Conditions				Acceptable?
		LOS	Delay (s/veh)	v/c Ratio	95th % Queue	LOS	Delay (s/veh)	v/c Ratio	95th % Queue	
13: US 97 / SW Glacier Ave - SW Highland Ave	v/c ≤ 0.80	LOS C	23.0 s	**0.91**	EB L: 355 ft EB R: 75 ft NB L: 195 ft NB T: 260 ft SB T: 40 ft SB R: <25 ft	LOS C	26.7 s	**0.95**	EB L: 405 ft EB R: 75 ft NB L: 185 ft NB T: 245 ft SB T: 35 ft SB R: <25 ft	No
14: US 97 / SW Veterans Way	v/c < 1.00 *(Alternative Mobility Standard)*	LOS D	50.8 s	**1.03**	EB L: 70 ft EB T: 175 ft EB R: 60 ft WB L: 310 ft WB TR: 250 ft NB L: 420 ft NB TR: 915 ft SB L: 45 ft SB TR: 735 ft	LOS E	66.9 s	**1.12**	EB L: 70 ft EB T: 230 ft EB R: 60 ft WB L: 395 ft WB TR: 315 ft NB L: 420 ft NB TR: 950 ft SB L: 45 ft SB TR: 770 ft	No
15: Airport Way / SW Veterans Way (Roundabout)	v/c < 0.90 95th % Queue < 100 ft	Overall: LOS C EB LTR: LOS A WB LTR: LOS C NB LTR: LOS B SB LTR: LOS C	Overall: 16.0 s EB LTR: 8.0 s WB LTR: 22.5 s NB LTR: 10.9 s SB LTR: 15.7 s	EB LTR: 0.38 WB LTR: 0.80 NB LTR: 0.44 SB LTR: 0.64	EB LTR: 2 Vehicles WB LTR: 9 Vehicles NB LTR: 2 Vehicles SB LTR: 5 Vehicles	Overall: LOS D EB LTR: LOS B WB LTR: LOS E NB LTR: LOS B SB LTR: LOS E	Overall: 29.4 s EB LTR: 10.7 s WB LTR: 39.9 s NB LTR: 14.6 s SB LTR: 35.7 s	EB LTR: 0.49 **WB LTR: 0.94** NB LTR: 0.52 **SB LTR: 0.90**	EB LTR: 3 Vehicles **WB LTR: 14 Vehicles** NB LTR: 3 Vehicles **SB LTR: 12 Vehicles**	No
16: US 97 SB Ramp / Yew Ave	v/c < 1.00 *(Alternative Mobility Standard)*	LOS B	16.5 s	0.88	EB T: 195 ft EB R: 50 ft WB L: 375 ft WB T: 345 ft SB LT: 155 ft SB R: 50 ft	LOS B	19.7 s	0.95	EB T: 195 ft EB R: 50 ft WB L: 495 ft WB T: 355 ft SB LT: 155 ft SB R: 55 ft	Yes
17: US 97 NB Ramp / Airport Way	v/c < 1.00 *(Alternative Mobility Standard)*	LOS E	62.1 s	**1.11**	EB L: 95 ft EB T: 190 ft WB T: 615 ft WB R: 105 ft NB L: 495 ft NB TR: 290 ft	LOS E	77.7 s	**1.18**	EB L: 95 ft EB T: 190 ft WB T: 715 ft WB R: 125 ft NB L: 495 ft NB TR: 355 ft	No
18: SW 19th St / Airport Way (Roundabout)	v/c < 0.90 95th % Queue < 100 ft	Overall: LOS D EB TR: LOS B WB LT: LOS F NB LR: LOS D	Overall: 31.9 s EB TR: 12.3 s WB LT: >50.0 s NB LR: 32.4 s	EB TR: 0.70 **WB LT: 1.00** NB LR: 0.83	**EB TR: 6 Vehicles** **WB LT: 18 Vehicles** **NB LR: 9 Vehicles**	Overall: LOS E EB TR: LOS B WB LT: LOS F NB LR: LOS E	Overall: 49.8 s EB TR: 14.2 s WB LT: >50.0 s NB LR: 42.3 s	EB TR: 0.75 **WB LT: 1.12** NB LR: 0.89	**EB TR: 8 Vehicles** **WB LT: 26 Vehicles** **NB LR: 10 Vehicles**	No

Additional details are provided within this section related to mitigation options at the deficient intersections.

NE 9th Street/NE Maple Avenue

The unsignalized NE 9th Street/NE Maple Avenue intersection is expected to operate with high delays on the northbound approach by year 2040 with or without the proposed Redmond East Gateway development. This movement will be nearing capacity by 2040 and will exceed with full buildout of REG. The City's Transportation System Plan has identified a project for a roundabout or a traffic signal at this intersection. Both would function well in 2040 with the projected volumes.

TSP Improvement Description

Map ID	Facility	Improvement	Notes	2020 Cost Estimates
I11	NE 9th St/ NE Maple Ave	Consider traffic signal or roundabout	-	$0.5M (signal) or $3.2M (roundabout)

A review of the operations at this intersection over several years assuming straight line growth for both the surrounding developments and REG shows that improvements will be needed by 2029 to meet City standards. As shown in Table 3-7, with the retention of stop-sign control, by 2029 the 95th percentile queue for the northbound left-turn movement is expected to exceed 4 vehicles.

Table 3-7. NE 9th Street/NE Maple Avenue Mitigation Timing

Year	REG Trip Generation Net New PM Peak Hour Trips	Critical Northbound Left-Turn Movement Operations Weekday PM Peak Hour	Acceptable?
2026	+168	LOS C Delay: 18.0 s v/c: 0.49 95th Percentile Queue: 3 vehicles	Yes
2027	+252	LOS C Delay: 20.5 s v/c: 0.55 95th Percentile Queue: 4 vehicles	Yes
2028	+336	LOS C Delay: 23.3 s v/c: 0.60 95th Percentile Queue: 4 vehicles	Yes
2029	+420	LOS D Delay: 26.7 s v/c: 0.66 **95th Percentile Queue: 5 vehicles**	No

Despite serving as a critical terminus of the City's "Eastside Arterial" project, the NE 9th Street/NE Maple Avenue intersection was not included within the City of Redmond's Draft Transportation SDC list. If the project is not amended into the list it is assumed that some form of pro-rata fee would be established for all area projects to contribute toward this needed system improvement.

NE 9th Street/NE Antler Avenue

The two-way stop-controlled NE 9th Street/NE Antler Avenue intersection will exceed City operation standards with full buildout in year 2040. The westbound approach will exceed capacity and will operate with long delays without any improvements. The City's 9th Street project does not identify specific funding for a new roundabout at the NE 9th Street/E Antler Avenue intersection. This project is currently included within the City's Transportation System Development Charge (SDC) list as a fully creditable $250,000 [in 2008 dollars, with these fees escalated annually] traffic signal that should be installed "when warranted"; it was similarly identified in the 2012 Senate Bill 1544 analysis (as a long-term need). It was also listed within the City's 2020 Transportation System Plan as a Priority Intersection Capacity Project as summarized in the table below, at a 2020 cost of $500,000, and remains as a listed project within the City's draft SDC methodology. While the identification and preference for a traffic signal does not preclude consideration of a roundabout (or any other suitable control treatment), shifting the preference to a roundabout has different implications on right-of-way and project costs.

TSP Improvement Description

Map ID	Facility	Improvement	Notes	2020 Cost Estimates
I17	NE 9th St/ E Antler Ave	Consider traffic signal or roundabout	Signal Preferred	$0.5M

A review of the operations of the intersection assuming straight-line growth from REG and the surrounding developments, shows that some type of improvement will be required by year 2034 in order to meet City standards. The addition of a separate westbound left-turn lane at this intersection would extend the acceptable operations until 2036, at which time more significant improvements would be needed to meet City standards, as shown in Table 3-8.

Table 3-8. NE 9th Street/E Antler Avenue Mitigation Timing

Year	REG Trip Generation Net New PM Peak Hour Trips	Critical Movement Operations Weekday PM Peak Hour	Acceptable?
Single Lane Approach on East and West Legs			
2032	+672	WB LTR: LOS D Delay: 25.5 s v/c: 0.47 95th Percentile Queue: 3 vehicles	Yes
2033	+756	WB LTR: LOS D Delay: 31.9 s v/c: 0.57 95th Percentile Queue: 4 vehicles	Yes
2034	+840	WB LTR: LOS E Delay: 41.9 s v/c: 0.68 **95th Percentile Queue: 5 vehicles**	No
With Separate Westbound Left-Turn Lane			
2035	+924	WB L: LOS F Delay: >50.0 s v/c: 0.59 95th Percentile Queue: 4 vehicles	Yes
2036	+1,008	WB L: LOS F Delay: >50.0 s v/c: 0.71 **95th Percentile Queue: 5 vehicles**	No

From our discussions with staff we understand that there is an opportunity to construct the NE 9th Street/E Antler Avenue roundabout as part of the City's progressive design-build project, potentially saving costs, reducing throw-away "interim" treatments, and reducing the need for subsequent construction detours. To help inform these discussions, a separate assessment was conducted to further explore the confidence in these analysis values given the numerous variables and uncertainty.

NE 9th Street/E Antler Avenue Sensitivity Analysis

The rate and magnitude of traffic growth along the NE 9th Street corridor, as well as the conflicting volumes along NE Antler Avenue, will inform when improvements to the intersection are needed. Traffic volume projections are typically prepared through comparison of base and future year (2040) travel forecasts, with mitigation triggers then developed assuming linear growth between these points, and further overlaid with linear development of the trip generation volumes. This standard approach is inaccurate along the NE 9th Street corridor for the following reasons:

- The modeled base year (2019) traffic volumes do not reflect the planned connection of NE 9th Street between OR 126 and SE Veteran's Way. This connection will occur near-term as part of the City's Capital Improvement Project, immediately increasing the through trips along the corridor.
- There are several private development projects in various stages of entitlements (and likelihood) in the vicinity that are on a near-term build-out timeline. These include: Wild Mike's Pizza, Heart of Oregon, Peninsula Trucking, a distribution facility, contractor offices, CMU production facility, and commercial uses on Lake Road. There are additional longer-term projects that will also impact

the corridor, though the scale of these projects will result in impacts occurring on a more extended timeline.

- While the industrial and employment uses within the REG will develop in a fairly linear manner, the commercial services reflect a high-intensity use within REG that will be developed near-term. This phasing plan will "front load" the trip impacts of the site and will vary from a linear development pattern.

As with any travel forecasts, the timing of surrounding projects and the estimates of rerouted trips include a high level of variability and therefore result in a low confidence interval. This analysis reviews travel forecasts using a more manual approach alongside the regional travel demand model projections.

Forecast Traffic Volumes

Travel forecasts for the area were initiated using February 1, 2024 manual turning movement counts. These traffic counts identified a peak hour between 4:20 and 5:20 p.m., with nearly 500 total entering vehicles, and with approximately 90 percent of these trips traveling in the north-south direction along NE 9th Street. These volumes include minor adjustments for balancing along the corridor.

Traffic volumes along the NE 9th Street corridor were not seasonally adjusted. As the lands served along this corridor are largely industrial uses that operate throughout the year, the February conditions are expected to reasonably reflect a typical design hour. In review of historical counts collected on Thursday, April 1, 2021, there were similar traffic volumes and patterns with a total of 536 entering vehicles between 4:15 and 5:15 p.m. observed within these older counts. Older counts collected on Tuesday, April 18, 2017 identified a total of 499 peak entering vehicles. All of the counts exhibited similar travel patterns with a southbound travel bias; this four-percent variation is consistent with day of week and month of year travel patterns, so no further adjustments were provided. However, this highlights the variability of the traffic counts and normal traffic volume fluctuations within this area, with the raw unadjusted midweek traffic counts over the past seven years varying by as much as nine percent.

- **Forecast Variable 1:** Base peak hour traffic volume fluctuations add about 5% variation throughout the year.

Travel forecasts obtained from ODOT TPAU's Bend-Redmond Travel Demand Model were used to estimate the rerouted volumes associated with the planned NE 9th Street extension from OR 126 south to SE Airport Way. The initial model outputs show about a 30% increase in the current volume from approximately 500 peak hour trips to about 650 trips through the 20-year planning horizon, equating to about 1% compounding annual growth per year (accounting for the new 9th Street connection and pending "in-process" projects). The model forecasts also indicate a more even future split in the north-south traffic, but fairly moderate travel on the eastbound and westbound approaches. As the missing 9th Street connection does not exist today, calibration of these forecasts is not possible, resulting in 20-year travel forecasts with an expected accuracy of +/- 47.5% per NCHRP Report 765, and five-year forecasts that are +/- 27.5% of the predicted value.

While this seems like a substantial variance potential, a review was conducted of similar long-range planning efforts for new roadway connections within Bend's Old Mill District that were recently reviewed as part of a separate master planning effort. As part of the 1999 travel forecasts there were numerous development assumptions related to travel along the "planned" Reed Market Road "Southern Crossing", as well as the new creation of the Bond Street alignment. Comparison of the 1999 travel forecasts to the 2022 traffic volumes showed that Bond Street currently serves 63 percent of the 20-year projections prepared in 1999. Reasons for this discrepancy are numerous, and regardless of the quality of the travel

forecasts and modeling there are numerous underlying assumptions inherent to these models that cannot be accurately predicted. While this is only one example, these values confirm the expected travel demand modeling inaccuracies identified within NCHRP Report 765.

Some of the reasons that these forecasts vary are the following:

- Planning assumptions that each individual uses will experience peak travel during the same hour as the transportation system;
- That all land and uses will fully develop within 20-years;
- Assumptions related to trip linking between uses;
- Assumptions that fairly high-intensity uses would occur throughout master planned areas, when there is generally a range of tenant types and intensities.

During this 20-year planning period there were no substantial changes made to travel modes, vehicle ownership, vehicle occupancy, or new technology shifts. Increased home-based work has become more of a factor post-COVID.

In addition to the modeling factors and assumptions, the travel demand models could not accurately predict the population growth of Bend or its subsequent UGB expansion(s), competing uses, economic conditions, and other new roadways that would help shift the current travel demands during the ensuing time period. Forecasts in Redmond will similarly be based on numerous assumptions, particularly as use of the 9th Street corridor will be tied to economic activity throughout the corridor (including with the DSL properties), the adequacy of the US 97 corridor to support continued north-south travel growth, and the current US 97 connections and crossings. Redmond's economy is closely tied to other urban areas within Central Oregon, and the limited regional availability of industrial lands and pricing will likely shift more growth toward Redmond near-term, accelerating the pace of absorption of the surrounding lands.

- **Forecast Variable 2:** Models are inaccurate. The Accuracy of Modeling Forecasts Range Between 27.5% (5 years) and 47.5% (20 years) for a New Roadway.

Recognizing the variability and low confidence within these travel projections, base year traffic volumes were developed for the 9th Street corridor accounting only for the funded extension of NE 9th Street between OR 126 and SE Veteran's Way. The resultant volumes are intended to reflect "day of opening" conditions on the corridor (not accounting for other area development or continued volume growth) as shown in Figure 3-13.

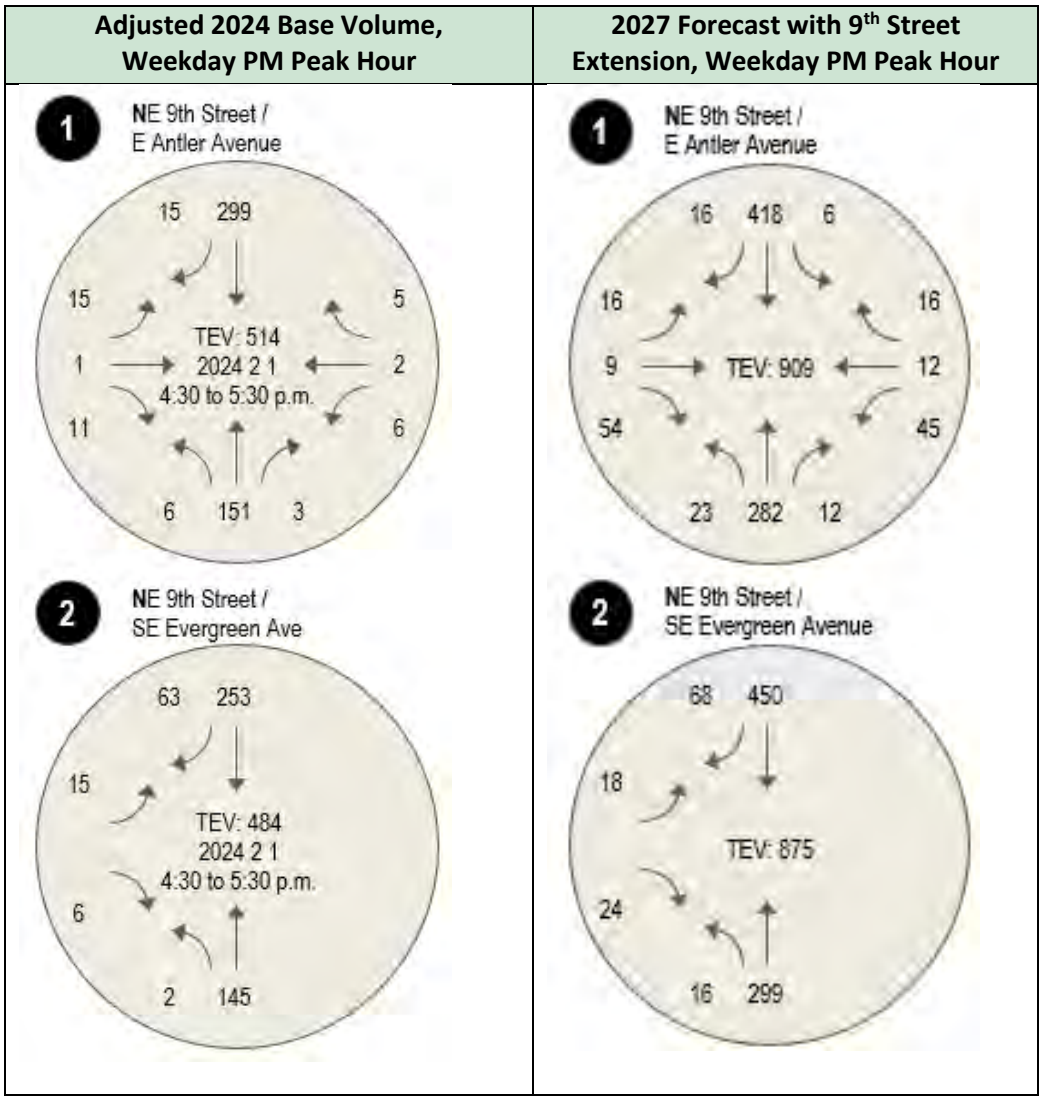


Figure 3-13. Base and Future (without REG) Traffic Volumes, Weekday PM Peak Hour

Approved "Pipeline" Project Development

There are several projects within the vicinity of the REG site that could fully or partially develop by 2040, with several of these projects having the potential to fully build-out within the next three- to five-years. These trips are not typically accounted for while using a Travel Demand Model forecasting approach, as the model already accounts for planned development through the horizon period. Within the area surrounding the REG, and particularly near the E Antler Avenue corridor, the impact of these developments will be more significant. A summary of these identified projects are provided below:

Near-Term Projects: These uses are expected to develop within the next three to five years.

- Wild Mike's Pizza: This project is a largely automated (approximately 120-employee) large-scale production facility that was approved in 2021. The project includes frontage along E Antler Avenue, and its development would provide the *Collector* street and utility improvements east from NE 9th Street to the REG property. No development has been initiated within this site to date, though the approvals remain valid. This parcel was located within the original Senate Bill 1544 lands. With no activity to date, it is increasingly unlikely that this project will be complete prior to

2027, but it was fully assumed within the analysis. More recently the project has filed a partition to market the southern portion of the site other potential developers.

- Peninsula Trucking: Peninsula Trucking is a distribution facility located on the west side of NE 9th Street with its northern border abutting NE Greenwood Avenue. It is expected that this project will proceed near-term, with full build-out prior to 2027.
- K&E Construction: This project is located directly north of Peninsula Trucking with construction underway. This project includes contractor offices and storage, and is a fairly low-intensity industrial use. This project will be complete prior to 2027.
- Opportunity Foundation Heart of Oregon Campus: It is my understanding that the Heart of Oregon Campus will proceed with access provided from NE Evergreen Avenue. It was determined that the OR 126/Evergreen Avenue intersection will be disconnected, with traffic from this intersection rerouted to NE 9th Street. Build-out of the campus is likely to occur around the 2027 timeframe.
- Sort facility/distribution center: Scoping materials for a new distribution center on the northwest side of the NE 9th Street/E Antler Avenue intersection have been submitted to the City of Redmond, with the project intending to proceed on an accelerated timeline. As proposed, this site would include a moderate-intensity 60,000 square-foot distribution facility with build-out occurring around the 2027 timeline.
- Basalite Concrete Products Relocation: The relocation of Basalite was approved for a parcel on the northeast corner of the E Antler Avenue/NE 11th Street intersection. This is another land-intensive but low traffic intensity site, as they produce and distribute Concrete Masonry Units (CMUs) and other concrete block materials. Assuming this project proceeds, this site would be responsible for frontage improvements along a portion of the E Antler Avenue corridor. Since the site closes at 4PM daily the traffic impacts are very limited and can be discounted for analysis purposes.
- Lake Road Commercial Site: This project is contemplating a fuel center and convenience market, coffee stand, and a farm/ranch supply store on the southeast corner of the OR 126/Lake Road intersection, within property owned by the Opportunity Foundation and the City of Redmond. Scoping materials and a formal traffic study have been provided to the City but the formal application is not yet complete. If approved, build-out in the 2027 timeline would be possible. Direction from the City of Redmond has indicated that this project could be required to implement the City's TSP plan to limit Lake Road to right-in, right-out, potentially allowing westbound left-in access with the installation of a left-turn lane along the highway.

Longer-Term Projects: These uses will require a more extended development timeline, likely between 10 and 20 years (or more in the case of DSL).

- Skyline Village Affordable Housing Project: This project was part of a Pilot Program to allow UGB expansion for affordable housing. The submittals to date were prepared to support the application program and satisfy its timelines, but were completed without the input of a master developer. The City is currently contracting with a master developer to further refine these plans. Full build-out is more reasonably anticipated to occur over a 10-year period, potentially with initial project phases in place by 2028.
- Redmond Airport Expansion: This project will support the expansion of the Redmond Municipal Airport terminal with new jetways, security areas, baggage handling, and administrative offices to accommodate its operations and maintain its passenger service levels over the next 20 years. Growth at the airport will occur over time with regional population increases, with the impacts experienced throughout the planning horizon. This project will include a new roundabout on the Airport Way corridor at the Jesse Butler Circle egress, likely within the five-year planning horizon.

- CORE3 site: The Core 3 site is a 228-acre property that will support emergency services training and provide an incident command/response center. The project is located east of the REG property along the northern side of OR 126. This facility includes expansive buffer areas, a driver training course (EVOC), various buildings for fire and breaching training, and classroom/administrative space. The site will function similar to other combined emergency services training centers, with low daily staffing and limited on-site personnel except during scheduled training events. Full build-out of this facility is expected to occur over an extended period of time, with only the initial development phase in place by 2027.
- DSL Large Lot Industrial: This project encompasses over 1,000 acres of industrial lands surrounding the Deschutes County Fairgrounds, and is slated for large-lot industrial uses similar to the original purpose of the REG within the Senate Bill 1544 process. The City is in the process of developing a plan to support growth in this area with 7 to 10 employees per acre, which would fundamentally shift the employment balance in Redmond. There are key infrastructure needs that will be required to support this level of intensity, including a new roundabout at the Airport Way intersection with SE 19th Street to support initial development phases, and a new connection over the BNSF railway onto US 97 south of Yew Avenue. The timing of this overcrossing will dictate whether the Airport Way roundabout will need to be expanded to a multilane design. It remains unlikely that any substantial development will occur within these lands by 2027, and there is a high level of uncertainty related to the pace of development beyond this timeline. Based on discussions with staff, the City is planning for the lower-level of employment within DSL, with the property assumed to develop linearly over the planning horizon (but with no development by 2027).

As summarized, there are several projects within the vicinity that are within some stage of entitlements, design, or construction. The types of uses considering these eastern Redmond lands are largely industrial (with exception of Skyline Village and the Lake Road commercial site) and consist of low-intensity production and distribution facilities.

Based on this range of projects, the impacts of these approved/pending applications on traffic at the NE 9th Street/NE Antler Avenue intersection are summarized in Figure 3-14. This shows a high near-term rate of growth from these pipeline projects that, pending additional development applications, will taper over the next 13 years.

- **Forecast Variable 3:** The timing and intensity of longer-range projects remains highly variable, particularly for master planned areas such as the DSL lands.

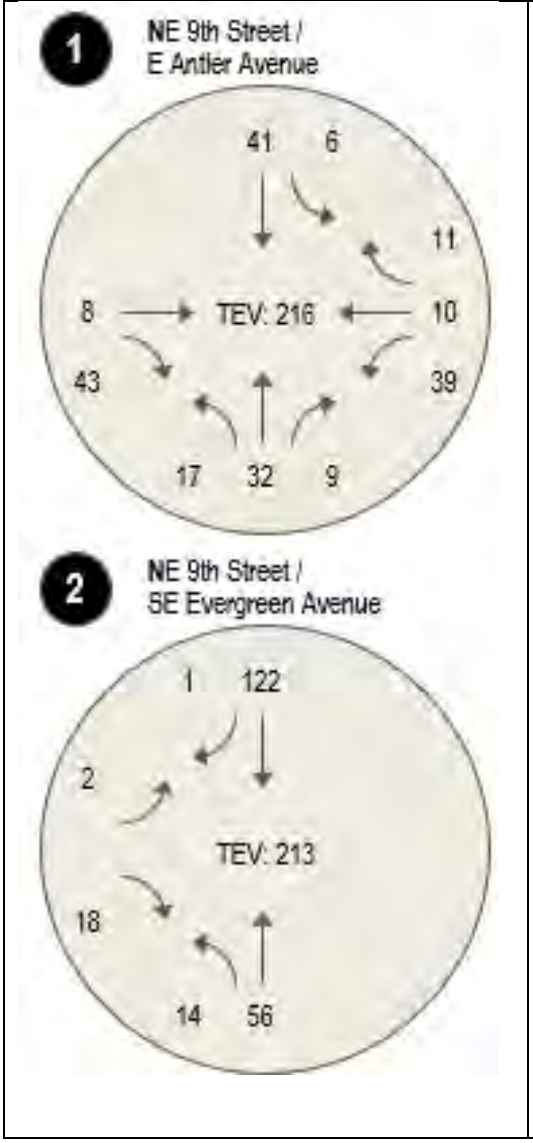
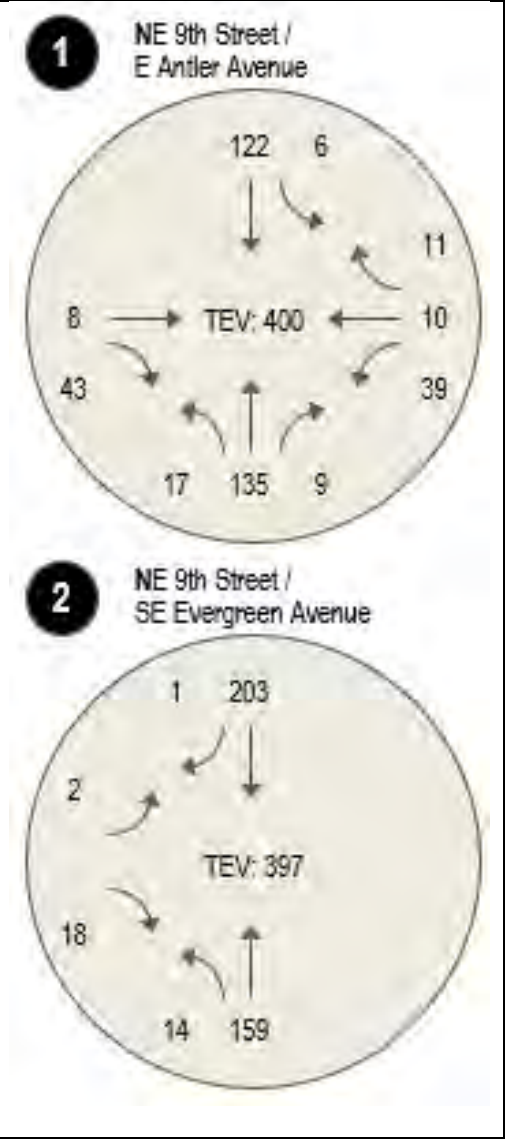
Near-Term (2027) Approved/Pipeline Trips, Weekday PM Peak Hour	Long-Term (2040) Approved/Pipeline Trips, Weekday PM Peak Hour
	

Figure 3-14. Summary of Approved Development Trips, Weekday PM Peak Hour

Area Growth Rates

If all of the identified near-term projects are fully built-out by 2027, the addition of 216 weekday p.m. peak hour trips would equate to 42% growth at the E Antler Avenue/NE 9th Street intersection, or about 12 percent annual growth over the next three years. This follows what has historically been flat growth along the NE 9th Street corridor. Additional area growth was not applied to the near-term traffic volumes given this high level of planned development activity that already captures the planned growth. In reality, there will be some level of interaction between the planned/approved uses and the projects will not be entirely "additive" on the system, particularly as these projects include residential, employment, and retail components.

- **Forecast Variable 4:** The interaction between various land uses is not accounted for within the ITE-based addition of approved development trips. No supplemental growth rates were applied to avoid over-estimating growth within this area.

NE 9th Street/E Antler Avenue Phase 1 Traffic Operations and Findings

Accounting for the existing traffic and near-term growth, an operations analysis was prepared for the E Antler Avenue/NE 9th Street intersection based on its existing traffic control but with the addition of a northbound and southbound left-turn lane, which is planned as part of the funded eastside arterial project. This analysis shows that without development of REG, acceptable traffic operations will be present at the intersection in 2027, with the intersection forecast to operate at Level of Service "D" on the westbound approach and Level of Service "C" on the eastbound approach. The unsignalized intersection operates with about 70% reserve capacity.

The first development phase within the REG is located in the northeast corner of the site, and these lands are reliant on E Antler Avenue for primary access. Tentative plans identify heavy and light industrial uses to support nearly 500 employees within about 370,000 square-feet of building area. This level of employment, absent a structured travel demand management program, would generate about 204 weekday p.m. peak hour trips, with 41 of these trips inbound and 163 outbound. Assigning these trips to the transportation system based on the patterns identified within the TIA results in the westbound approach exceeding its carrying capacity and operating at LOS "F".

This analysis is more critical than the prior modeling within the TIA that showed substantial reserve capacity before improvements were required. This is primarily due to the difference in travel forecasts by using a more manual, rather than model-based, estimate. The travel demand models do not appear to include the same level of planned near-term growth as is currently pending within this area, and the models' base volumes are not calibrated and contain values that are substantially less than the current traffic counts. Use of the model results in about 30% lower travel projections.

To test the sensitivity of this analysis, all of the public rerouted trips associated with the 9th Street connection were removed from the analysis and the system was again analyzed. Without this rerouting this analysis showed that the westbound approach would operate at LOS "E" at 80 percent of its carrying capacity, or still near its capacity even with the planned turn lane improvements.

Accordingly, while there are several variables that will impact traffic volumes on the NE 9th Street corridor, if surrounding development proceeds as planned it is expected that within five years and with the build-out of the Phase 1 employment area the NE 9th Street/E Antler Avenue intersection will require capacity improvements. As the planned widening of the 9th Street corridor to a three-lane section will incur substantial costs, and all of these costs will be throw-away with the planned reconstruction as a roundabout, it is recommended that the ultimate roundabout improvement be pursued with the initial REG development phase.

The benefit of constructing the roundabout as an initial phase is the following:

- The roundabout is the identified long-term improvement identified in the City's TSP and is included in the City's current and proposed SDC methodology;
- Improved safety and moderated speeds along the 9th Street corridor with a roundabout;
- Construction detours will not be required from the primary access after REG occupancy occurs;
- Initial construction of the roundabout with the 9th Street design-build process will avoid throw-away costs of widening NE 9th Street for left-turn lanes; and

- The roundabout can serve as an improved connection to the site between REG and the US 97 corridor.

SE 9th Street/Evergreen Avenue Intersection

The SE 9th Street/Evergreen Avenue intersection is planned to serve as the primary access into the commercial portion of the site from SE 9th Street. At full build-out, the existing two-lane stop-control intersection will not be able to handle westbound traffic during the weekday p.m. peak hour. Assuming buildout occurs at a steady pace, improvements will be needed by the 2031/2032 timeframe. A separate westbound left-turn lane provides some additional capacity. However, more significant capacity improvements will be required for this intersection to operate acceptably in the future.

Table 3-9. NE 9th Street/Evergreen Avenue Mitigation Timing

Year	REG Trip Generation Net New PM Peak Hour Trips	Critical Movement Operations Weekday PM Peak Hour	Acceptable?
Single Lane Approach on East and West Legs			
2029	+420	WB LTR: LOS C Delay: 21.9 s v/c: 0.44 95th Percentile Queue: 3 vehicles	Yes
2030	+504	WB LTR: LOS D Delay: 28.8 s v/c: 0.58 95th Percentile Queue: 4 vehicles	Yes
2031	+588	WB LTR: LOS E Delay: 40.4 s v/c: 0.72 **95th Percentile Queue: 6 vehicles**	No
With Separate Westbound Left-Turn Lane			
2031	+588	WB L: LOS E Delay: 39.2 s v/c: 0.61 95th Percentile Queue: 4 vehicles	Yes
2032	+672	WB L: LOS F Delay: >50.0 s v/c: 0.77 **95th Percentile Queue: 6 vehicles**	No

Either a roundabout or traffic signal would function well at this intersection. Any improvements considered should be coordinated with the improvements at Antler Avenue to the north. Further discussion of improvements and ability to obtain access onto SE 9th Street for this connection to occur are presented below.

Prior Evergreen Avenue Assumptions

As described within the project background section of this report, the original analysis for the Senate Bill 1544 lands was prepared based on the previously adopted 2008 Eastside Framework Plan. The Eastside Framework Plan had been approved as a joint vision for the City's growth between the City and County as part of its urban reserve planning following adoption of the City's Transportation System Plan. The analysis

of these lands was prepared assuming multiple points of access, as illustrated in Figure 3-5, which built on the connections adopted within the Eastside Framework Plan. Figure 3-15 shows the assumed SB1544 access points overlaid on the Eastside Framework Plan system of streets.

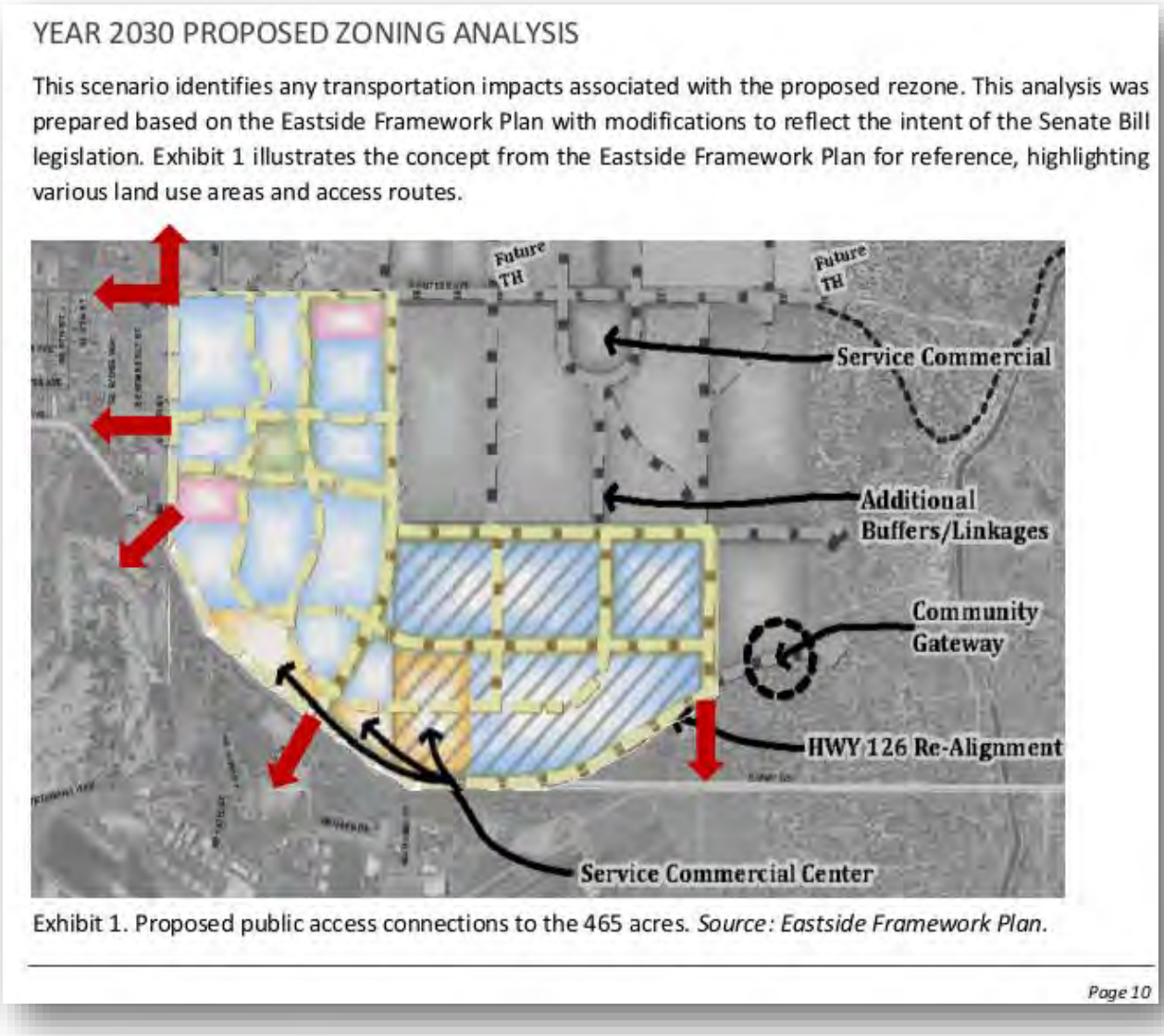


Figure 3-15. Excerpt from 2012 Senate Bill 1544 transportation analysis.
Source: December 28, 2012 SB1544 Transportation Analysis, Joe Bessman, PE, Engineer of Record.

As shown in Figure 3-15, the adopted Eastside Framework Plan included two connections to SE 9th Street, with one connection aligned with Evergreen Avenue and a second connection to its south. It was also assumed that OR 126 would be realigned outside of the Airport Runway Protection Zone, with two connections to support the adjacent lands (Veteran's Way extension and an eastern connection). The City's adopted Transportation System Plan had already identified the need to extend 9th Street from OR 126 south to Airport Way, but at the time there was no funding established to complete this connection, and there were on-going discussions with the airport related to how this future extension could also shift the road to better avoid the Runway Protection Zone. This revised alignment is being developed as part of the City's funded Eastside Arterial project.

City of Redmond Access Policies

The City of Redmond's access policies are contained within Redmond Development Code 8.2700. The City Code states that the recommended minimum block length along an arterial street is 1,320 feet, with recommended mid-block pedestrian and bicycle access to provide more direct connections within these larger blocks. These policies were developed during the 2007/2008 period (see Figure 3-16), with the access spacing recommendations retained within the 2020 Transportation System Plan.

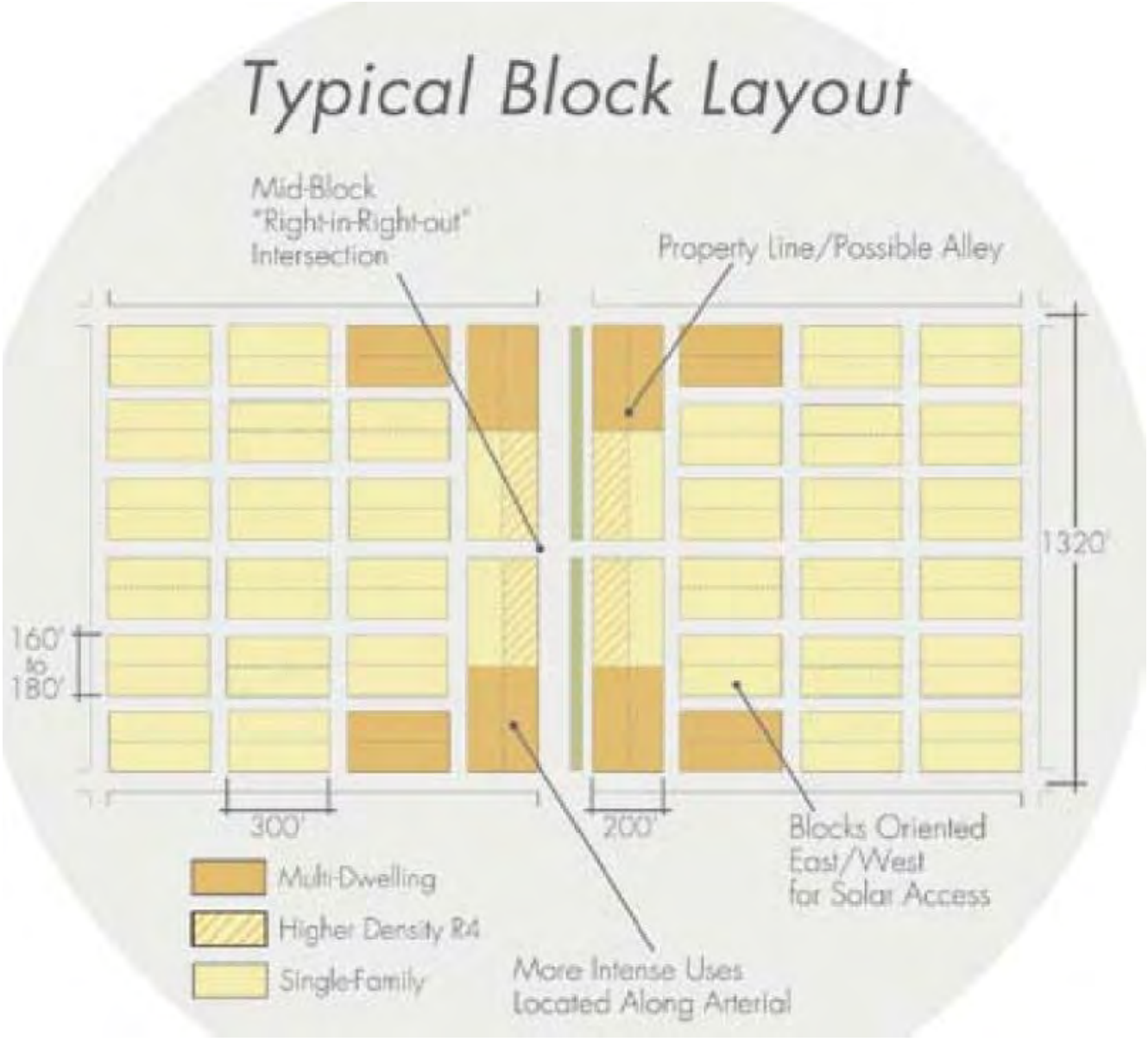


Figure 3-16. Typical Supporting Block Layout, *August 2007.*

Within RDC 8.2820 the City outlines its access management standards, which distinguish between private and public street connections. For a *Minor Arterial*, the City provides a minimum access spacing standard of 330 feet, and a minimum intersection spacing distance of ¼ mile (1,320 feet). A public street connection at Evergreen Avenue would remain in compliance with these standards, and without a connection would provide nearly a half-mile block spacing (see Figure 3-17).



Figure 3-17. Public Street Access Spacing along SE 9th Street. (Note that planned OR 126 roundabout will increase spacing shown)

Evergreen Avenue Access Options

The proposed phasing plan includes initial development along the E Antler Avenue corridor, with this connection into the REG occurring east of the Wild Mike's site. This connection will allow development of the light and heavy industrial lands, with the initial phases coming online around 2027. These lands will be supported with secondary fire/emergency access likely supported through some type of suitable all-weather street or interim/construction alignment (the specific plan has not yet been determined).

The discussion of access from Evergreen Avenue is multifaceted; the question is not only when a second access connection is necessary to alleviate demands on the Antler Avenue roundabout, but also relates to the economic and functional viability of the commercial lands. Without a connection, a circuitous access system is formed that adds about 7,250 lineal feet of out-of-direction travel for each inbound and outbound trip. Over the course of the year this equates to about 4.3M additional vehicle miles travelled, and at the posted travel speeds this distance equates to approximately three minutes of added travel times for each inbound or outbound trip (see Figure 3-18), effectively adding six-minutes of travel time into the commercial lands for convenience-oriented trips.

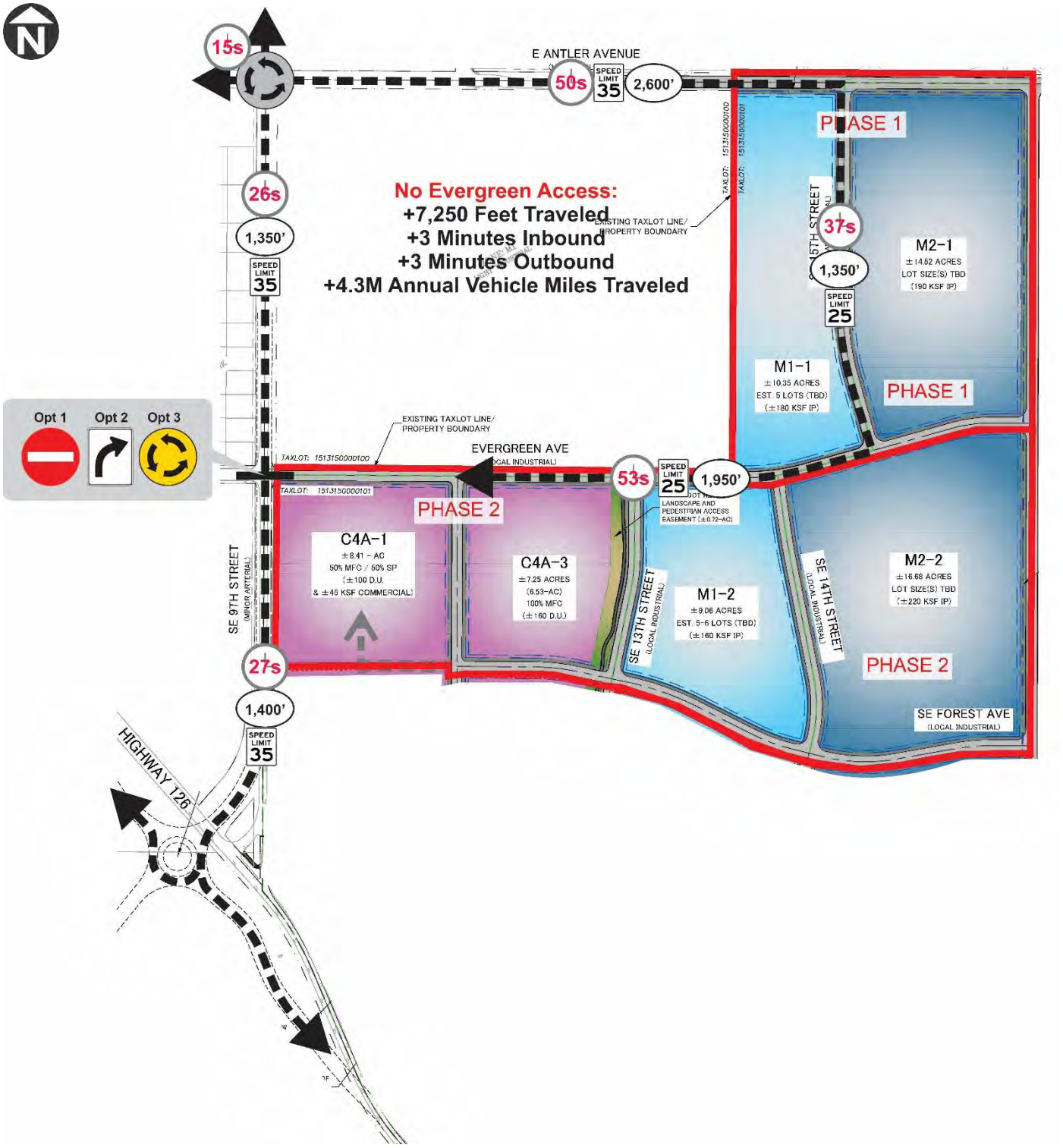


Figure 3-18. Circuitous interim (and long-term) access to the commercial lands

Three access scenarios were reviewed to assess how the initial development phases could be supported; this includes review of no access onto SE 9th Street, a limited right-in, right-out access onto SE 9th Street, and the addition of a roundabout providing full-access movements. Each of these access scenarios are focused on the Evergreen Avenue intersection, as this already serves as a public street connection and occurs at the approximate mid-point between OR 126 and E Antler Avenue.

Each of these access scenarios only considers Phase 1 and 2 build-out (as shown in Figure 3-18), as these phases have no other frontage on any other surrounding streets. With the traffic demands of the subsequent phases the single connection point at Antler could not support the added travel demands.

Based on the presented phasing plan, this development scenario will likely occur between 2029 and 2031, so this analysis assumes a 2030 horizon period with build-out of these phases with the previously submitted development assumptions:

- 485 Industrial Employees in Phase 1 (M1-1 and M2-1)
- 350 Industrial Employees in Phase 2 (M1-2 and M2-2)
- 160 Multifamily Residential Units
- 45KSF of commercial uses (including tentative plans for a fuel center and convenience market)

The trip generation estimates for this Phase 1 and Phase 2 scenario are shown in Table 3-10. Since this phase reflects only partial development of the master plan, no deductions were applied for multimodal or internal trips, though it is expected that some portion of trips will remain internal to the REG boundary.

Table 3-10. Phase 1 & 2 Trip Generation Comparison (ITE 11th Edition)

Land Use	ITE Code	Size	Daily Trips	Weekday PM Peak Hour		
				Total	In	Out
Shopping Plaza	821	40,000 SF	2,701	208	102	106
Pass-by Trips			*-1,080*	*-83*	*-40*	*-43*
Convenience Store/ Gas Station	945	4,110 SF 12 pos.	3,086	273	137	136
Pass-by Trips			*-2,315*	*-205*	*-103*	*-102*
Multifamily Housing (Low-Rise)	220	160 Units	1,078	82	51	31
Industrial Park	130	835 Employees	2,430	351	70	281
Total Trips			9,295	914	360	554
Pass-by Trips			*-3,395*	*-288*	*-143*	*-145*
Net New Trips			**5,900**	**626**	**217**	**409**

Table 3-10 shows that with this initial development phase there would be a total of 914 weekday p.m. peak hour trips generated, and with the employment uses there is an outbound travel bias. Each of the access scenarios are reviewed below.

Access Scenario #1: No Access Scenario

The initial analysis scenario was prepared assuming that no access was provided to Evergreen Avenue as part of the initial development sequencing, requiring that all the industrial and commercial lands within Phases 1 and 2 are reliant on the eastern approach of the single-lane roundabout at the SE 9th Street/E

Antler Avenue intersection. Figure 3-19 illustrates the resultant traffic volumes at the Antler Avenue and Evergreen Avenue intersections.

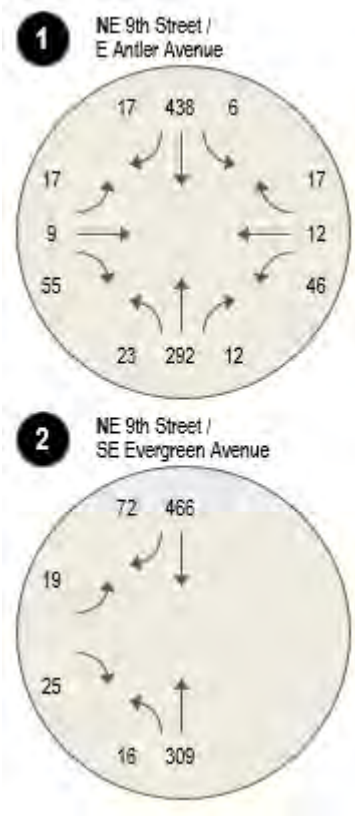
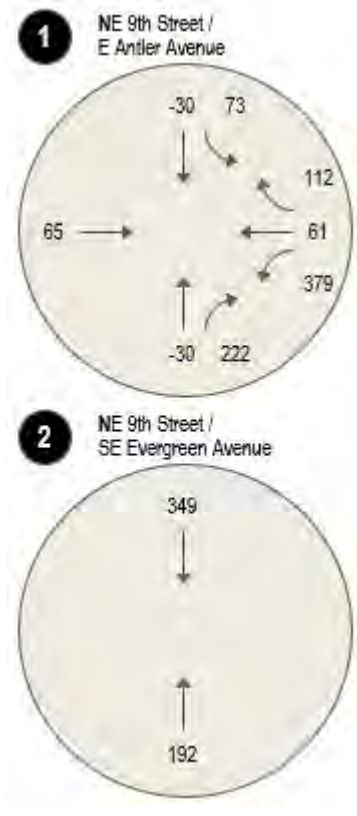
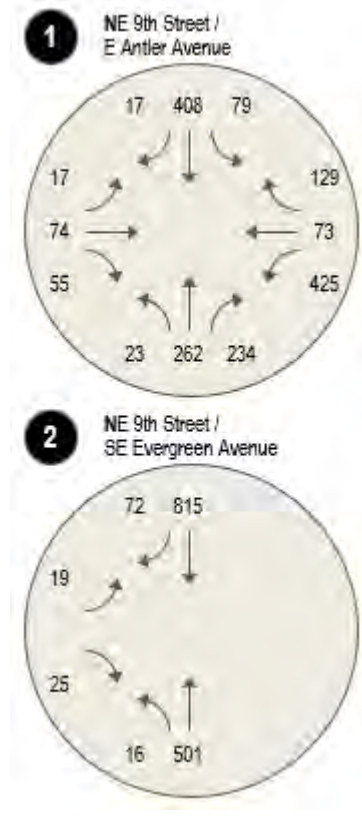
Year 2030 "No REG" Volumes (See 8/9 Antler Memo)	Site-Generated Trips Phases 1 & 2 only (No Evergreen Access)	Total Year 2030 Trips
		

Figure 3-19. Summary of Year 2030 Traffic Volumes, Phases 1 and 2 Only with No Evergreen Access, Weekday PM Peak Hour

The operational analysis results of the NE 9th Street/E Antler Avenue intersection show that the single-lane roundabout can support the forecast trips in 2030 but will operate between 75% and 80% of its carrying capacity on the southbound and westbound approaches, operating with seven- to eight-vehicle queues. In addition, even without the addition of any trips from the SE 9th Street/SE Evergreen Avenue intersection, the low-volume stop-sign controlled eastbound approach will operate at Level of Service "D" owing to the high through volume headed toward E Antler Avenue. The City's plan to sever the SW Evergreen Avenue connection to OR 126 will increase reliance on this unsignalized approach.

Access Scenario #2: Right-in, Right-out Access Scenario

This scenario reviews traffic operations if the SE 9th Street/SE Evergreen Avenue intersection were modified to right-in, right-out access. This restricted access would allow some of the commercial demands to directly enter the site without impacting the Antler Avenue intersection. The rerouted traffic volumes are illustrated in Figure 3-20.

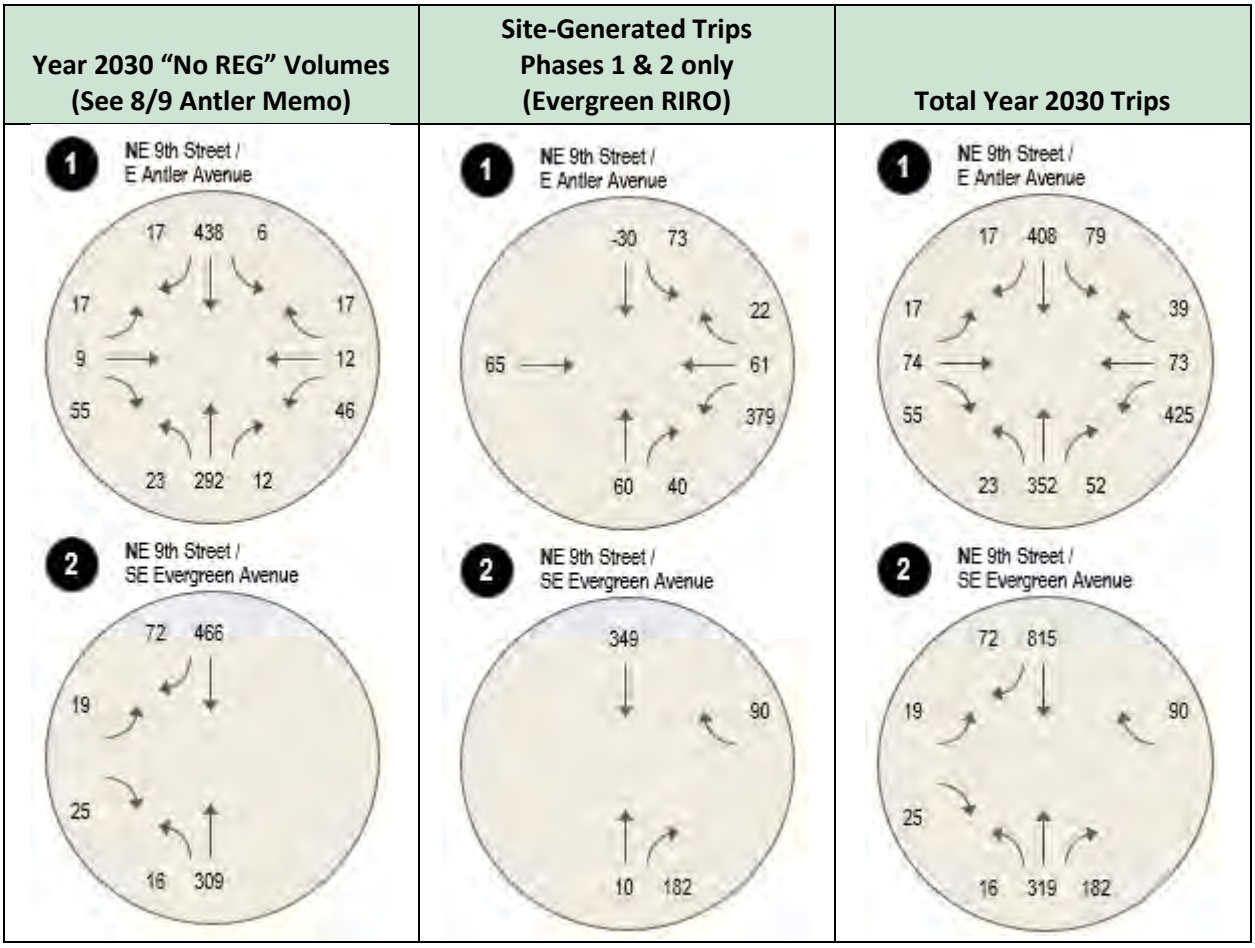


Figure 3-20. Summary of Year 2030 Traffic Volumes, Phases 1 and 2 Only with RIRO westbound Evergreen Avenue Access, Weekday PM Peak Hour

The operations analysis for this scenario shows minor relief at the SE 9th Street/E Antler Avenue roundabout, with the roundabout continuing to operate between 72% and 80% of its carrying capacity with similar queuing results. This is primarily due to the heavy outbound (westbound) left-turn movement, which continues to be consolidated at Antler Avenue in this scenario. While the RIRO access provides some relief, it does not modify the critical conflict between the westbound and southbound approaches. This access scenario also shows a slight degradation on the eastbound Evergreen Avenue approach, with forecast LOS "E" for this critical approach.

Access Scenario #3: Full Access Scenario (Evergreen Avenue Roundabout)

A third scenario was assessed to review conditions with full access at the E Antler Avenue/SE 9th Street intersection. As a four-legged intersection the control options are somewhat limited, consisting of either stop-sign or roundabout control (signalization was not considered given the City's priority for consistent intersection control throughout the 9th Street corridor). With the heavy volume of left-turns reliant on this intersection stop-sign control would not be a viable option, so this scenario was assessed with a single-lane roundabout. It was noted that if the intersection were to be sufficiently offset from the eastbound Evergreen Avenue approach there may other types of treatments, such as two-stage left-turn options, that could be explored if there was a desire to limit intersection control along the north-south corridor. Figure 3-21 illustrates the traffic volumes associated with a full-access scenario.

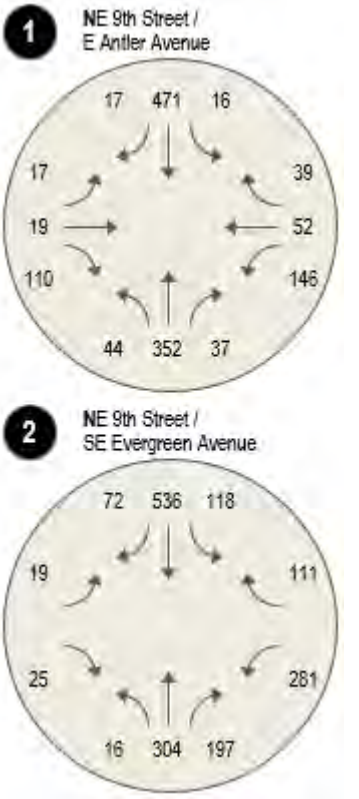
Year 2030 "No REG" Volumes (See 8/9 Antler Memo)	Site-Generated Trips Phases 1 & 2 only (Evergreen Roundabout)	Total Year 2030 Trips
		

Figure 3-21. Summary of Year 2030 Traffic Volumes, Phases 1 and 2 Only with Full-Movement (Roundabout) Evergreen Access, Weekday PM Peak Hour

The operational analysis of this scenario shows that with a single-lane roundabout at both Evergreen Avenue and at Antler Avenue relieves Antler Avenue, but relocates this congestion south to Evergreen Avenue, where the traffic re-consolidates. While the single-lane Antler Avenue roundabout operates at LOS "B" using about 55% of its capacity during the peak hour, the Evergreen Avenue roundabout operates at LOS "C" with the critical southbound approach operating near 85% of its capacity.

Summary of Access Findings

The operations analysis shows that with build-out of planned/pipeline projects, continued regional growth, and development of Phases 1 and 2 within the REG a single-lane roundabout at Antler Avenue can narrowly support the travel forecasts. Additional access at Evergreen Avenue (RIRO or a roundabout) provides a significant travel time reduction and reduces vehicle miles traveled, saving nearly three minutes of inbound and/or outbound travel time per vehicle accessing the commercial lands. With most of the traffic headed toward OR 126 in these initial phases there are limited "point" operational benefits of splitting demands between Antler and Evergreen, as the new roundabout at Evergreen Avenue transfers the delays south as traffic reconsolidates closer to OR 126. These findings would change if there were a shift in travel patterns (such as improved access to US 97 at Maple Avenue or a new central-City Interchange).

Freeing up capacity at E Antler Avenue is also a key benefit of the Evergreen Avenue access, as there are additional vacant lands served by this corridor that will be reliant on Antler Avenue for access. Maintaining reserve capacity will extend the lifespan of the City's collector system and help support development of these undeveloped industrial properties.

With any of these scenarios the substantial intersection spacing does not create the potential for any type of queuing conflict, with over 1,000 feet between the back of queue and the nearest upstream intersection. The City's access spacing standards for its minor arterials can be met.

A key benefit of a roundabout corridor is the ability to maintain a narrower cross-section along NE 9th Street; instead of a continuous three-lane road with a center left-turn lane, with roundabouts at Antler Avenue and Evergreen Avenue the corridor could be developed within a two-lane cross-section, providing substantial cost savings. This configuration would also support better long-term operations on the eastbound Evergreen Avenue approach, particularly with the planned closure of the connection to OR 126. Table 3-11 summarizes the access scenarios; full access is recommended.

Table 3-11. Summary of Access Scenarios

Scenario	REG Commercial Travel Time	Advantages	Disadvantages
Scenario 1: No Evergreen Access to REG	Inbound: 205s from OR 126 Outbound: 213s to OR 126	• Low 9th Street Delay: NB Delay: 9.6s SB Delay: 24.3s • High Priority for through travel	• Highest out of direction travel with lowest service to abutting employment land • Consolidated access at Antler Ave • Combined commercial and industrial (truck) trips • Requires 3-Lane 9th Street
Scenario 2: RIRO Evergreen Access	Inbound: 29s from OR 126 Outbound: 213s to OR 126	• Low 9th Street Delay: NB Delay: 8.0s SB Delay: 24.3s • Low-cost for Unsignalized Access	• Requires 3-Lane 9th Street • Consolidated outbound access to REG at Antler • Improved truck and passenger car separation
Scenario 3: Full Evergreen Access (Rdbt)	Inbound: 38s from OR 126 Outbound: 39s to OR 126	• Increased 9th St Delay: NB Delay: 15.5s SB Delay: 35s • Ability to construct 2-Lane 9th Street segment • Viable for commercial uses • Provides reserve capacity for industrial lands served by Antler Avenue	• Added Cost to construct roundabout • Best truck and passenger vehicle separation

Green highlights: Recommended Configuration.

Each of these access scenarios provides a review of conditions with Phases 1 and 2 of the REG. The single-lane roundabout at 9th Street/Antler Avenue could not support Phase 3, nor could additional access onto a roundabout at Evergreen Avenue without some type of access south onto OR 126 (assuming that all of the approved "pipeline" projects develop).

In addition, this analysis is premised on fairly-high employment numbers with these businesses operating with typical 8:00 a.m. to 5:00 p.m. shift schedules. Off-peak schedules, continuous site operations (effectively providing less employees at a given time), or other modifications to employment values could lessen the high outbound flows from the industrial lands within these initial phases and result in substantially improved intersection operations. Conversely, this analysis assumes a typical 2% vehicle mix of trucks, which is common during the peak hour throughout several other major corridors. If heavy industrial distribution centers or other types of truck-oriented uses are sited within these lands this could further degrade corridor operations.

Based on this analysis, it is recommended that full access be made available at Evergreen Avenue, with this intersection controlled by a roundabout. This project will require funding and ROW from REG as it is not a project contemplated within the TSP given its local street designation. On-going discussions are occurring between the REG team and the adjacent property owners, and this work is being coordinated with the City and the Eastside Arterial Project team.

Lake Road/OR 126

The 2040 analysis shows that with the added traffic from full buildout of the REG development, this intersection is expected to exceed capacity. While REG is anticipated to add a small number of westbound left-turns and no northbound movements to this intersection, it is expected to add over 500 new weekday p.m. peak hour trips to OR 126, which will increase the delay for northbound vehicles. In reality, many of these drivers will choose alternate routes to avoid this intersection. The extension of SE 9th Street will help by providing an alternate route between OR 126 and Veterans Way.

The City's TSP shows a plan to modify this intersection to right-in/right-out with the 9th Street project as described below. While this would restore this intersection to acceptable operations, this would send more traffic to 9th Street exacerbating issues at the Airport Way/SW Veterans Way and SE 9th Street/OR 126 intersections.

TSP Improvement Description

Map ID	Facility	Improvement	Notes	2020 Cost Estimates
I19	SE Lake Rd/ OR 126	Consider Access Management	Create Right-In/Right-Out in Conjunction with 9th Street Project	$0.1M

Separate discussions are occurring with the City of Redmond and a separate commercial development application to modify and fully fund these improvements. The traffic study for the REG project showing the need for improvements accounts for traffic associated with the Lake Road commercial site. The Lake Road commercial project has proposed full construction of the highway modifications (converting Lake Road to left-in, right-in, right-out with a new westbound left-turn lane). If the Lake Road commercial site does not proceed, the commercial trips it generates will not occur, and the intersection will operate acceptably. Accordingly, no mitigation is recommended as part of the REG.

For reference, per the Lake Road Commercial Site TIA:

- Existing operations at OR 126/Lake Road: NB v/c ratio 0.35
- Future 2027 conditions without site: NB v/c ratio 0.39
- Future 2027 conditions with Lake Road Commercial Project: NB v/c ratio 0.83 (with full access)

As shown above, the increased demands from development along Lake Road turning onto the highway (particularly outbound left-turns) results in the need for mitigation. The REG does not add any northbound left-turns at this intersection.

OR 126 / SE 9th Street Intersection

The SE 9th Street/OR 126 was modeled as a single lane roundabout in the 2040 analysis. Based on the forecast volumes, the roundabout is expected to meet ODOT mobility targets in 2040 without the site, but exceed with the REG development on the eastbound, westbound, and southbound approaches. Separate right-turn lanes on these approaches improve the v/c ratios on these approaches to ODOT standards. A review of the timing for needed improvements shows that a single-lane roundabout is projected to meet state standards through year 2033 assuming straight-line growth from REG and the surrounding developments (see Table 3-12). At that point in time, additional improvements (such as added right-turn lanes) may be necessary.

Table 3-12. SE 9th Street/OR 126 Single-Lane Roundabout Operations

Year	REG Trip Generation Net New PM Peak Hour Trips	Approach v/c Ratio Weekday PM Peak Hour	Acceptable?
2032	+672	EB LTR: 0.61 WB LTR: 0.66 NB LTR: 0.22 SB LTR: 0.72	Yes
2033	+756	EB LTR: 0.65 WB LTR: 0.70 NB LTR: 0.26 SB LTR: 0.78	Yes
2034	+840	EB LTR: 0.69 WB LTR: 0.75 NB LTR: 0.29 **SB LTR: 0.84**	No

The City of Redmond is currently working with the progressive design-build team to obtain refined travel demand modeling of this intersection for use in new projections. This work is on-going, but it is assumed that the funded project will provide a suitable configuration adequate to support the planned travel needs. More specific travel forecasts from REG were provided to the Eastside Bypass team to ensure that the corridor plans are suitable to accommodate this employment site. The selection of a specific design will need to consider tradeoffs between safety, mobility, and freight accommodations.

OR 126 / SE Veteran's Way Intersection

The Veteran's Way/OR 126 intersection is expected to exceed capacity in 2040 with full buildout of the site. This intersection was originally identified for new highway left-turn lanes and a traffic signal in the SB 1544 study and a traffic signal or roundabout in the TSP, as shown below.

TSP Improvement Description

Map ID	Facility	Improvement	Notes	2020 Cost Estimates
I36	SE Veterans Way/ OR 126	Consider traffic signal or roundabout	-	$0.5M (signal) or $3.2M (roundabout)

The analysis assumes that the southbound approach will be built with a separate left-turn lane and a shared lane for through and right-turning vehicles. The eastbound approach was assumed to be striped for a separate left-turn lane. With this level of improvement, this intersection is expected to meet state mobility targets through year 2028 assuming straight-line growth from REG and the surrounding developments. The addition of a separate northbound right-turn lane would provide approximately another two years of acceptable operations, as shown in Table 3-13.

Table 3-13. OR 126/SE Veteran's Way Mitigation Timing

Year	REG Trip Generation Net New PM Peak Hour Trips	Critical Movement Operations Weekday PM Peak Hour		Acceptable?
With Single Lane Approach on South Leg & Separate Left-Turn Lane on North Leg				
2028	+336	NB LTR: LOS E Delay: 44.9 s v/c: 0.84 95th % Queue: 8 veh	SB L: LOS F Delay: >50.0 s v/c: 0.36 95th % Queue: 2 veh	Yes
2029	+420	NB LTR: LOS F Delay: >50.0 s **v/c: 0.92** 95th % Queue: 10 veh	SB L: LOS F Delay: >50.0 s v/c: 0.55 95th % Queue: 2 veh	No
With Separate Northbound Left-Turn Lane				
2030	+504	NB L: LOS F Delay: >50.0 s v/c: 0.21 95th % Queue: 1 veh	SB L: LOS F Delay: >50.0 s v/c: 0.75 95th % Queue: 3 veh	Yes
2031	+588	NB L: LOS F Delay: >50.0 s v/c: 0.23 95th % Queue: 1 veh	SB L: LOS F Delay: >50.0 s **v/c: 1.05** 95th % Queue: 3 veh	No

With the nearby roundabout installation planned at the 9th Street/OR 126 intersection, a roundabout is now expected to provide the preferred mitigation treatment at this intersection. Based on the forecast volumes, a single-lane roundabout would be close to meeting ODOT's mobility targets in 2040. The westbound leg, or worst leg, is projected to operate at a v/c ratio of 0.84. However, given the uncertainty of the travel forecasts and unknown timing of the development, planning for a single-lane roundabout in the near-term is a reasonable mitigation, particularly as this could be expanded in the future if needed.

The OR 126/Veteran's Way roundabout is currently listed as a fully SDC creditable project on the City's project list, but the funding assumed within the SDC list is the same estimate as other City roundabouts, and costs to improve the highway system are typically much more expensive.

US 97 Study Intersections

Three of the study intersections are on US 97 and all are expected to exceed ODOT mobility standards in 2040 with or without the REG development. The US 97/Evergreen Avenue intersection exceeds capacity today and is expected to worsen in 2040. The US 97/SW Glacier Avenue – SW Highland Avenue intersection is expected to exceed the state's mobility standards in 2040 with a v/c ratio of 0.91 without REG and 0.95 with REG. The US 97/SW Veterans Way intersection is expected to exceed capacity in 2040 even during non-peak average annual conditions.

As the ability of the US 97 study intersections to be expanded and support higher levels of capacity is limited the City has instead elected to move forward with the "Eastside Arterial" alignment along the SW Airport Way / SW 9th Street alignment. While the travel projections show that even with this arterial there are still failing conditions on the highway mainline, the completion of this corridor provides travelers with an alternate route. The amount of traffic diverted to 9th Street will increase as additional improvements are made to the corridor, particularly near the northern and southern termini. Similar improvements

along the SW Helmholtz Way corridor to the west are expected to further enhance system connectivity and provide additional travel options outside the highway system.

As documented within the City's 2008 TSP and the Senate Bill 1544 project, within the City of Redmond there are limited east-west connections that provide access between the City's eastern industrial lands and the western residential lands. Solutions within the City's 2008 TSP identified a second phase of the Redmond Reroute that would bypass the southern portion of the City and provide a new interchange near the Hemlock Avenue intersection. Text from the 2008 TSP, as cited within the Senate Bill 1544 transportation report, states the following:

> *"Most intersections along the southern portion of US 97 would not meet performance standards even with localized refinements...These locations would require parallel routes be built to divert traffic, such as the US 97 Reroute Phase II extension. While the US 97 Reroute Phase II is included in the Master Plan, it is not included in the Action Plan."*

This long-term solution was not considered "likely" given the financial constraints, and the City explored design options to extend the lifespan of the existing highway system within the US 97 South Redmond Corridor Project. This project was approved by the City of Redmond and provides the long-range solutions to this corridor and locations that extend south to the UGB. This solution primarily involves the completion of a parallel and interconnected "ladder" roadway network that links the parallel SW Canal Boulevard corridor with US 97, as shown in Figure 3-22, which has been adopted by reference into the City's current 2020 Transportation System Plan. However, the current 2020 TSP did not include any plans to replace the "north central" interchange.

There are remaining constraints identified within the US 97 South Redmond Corridor Plan, particularly at the US 97/Veteran's Way intersection as separately discussed. This plan provided a comprehensive assessment of the US 97 corridor and recognized that mobility tradeoffs should be made to improve safety and connectivity.

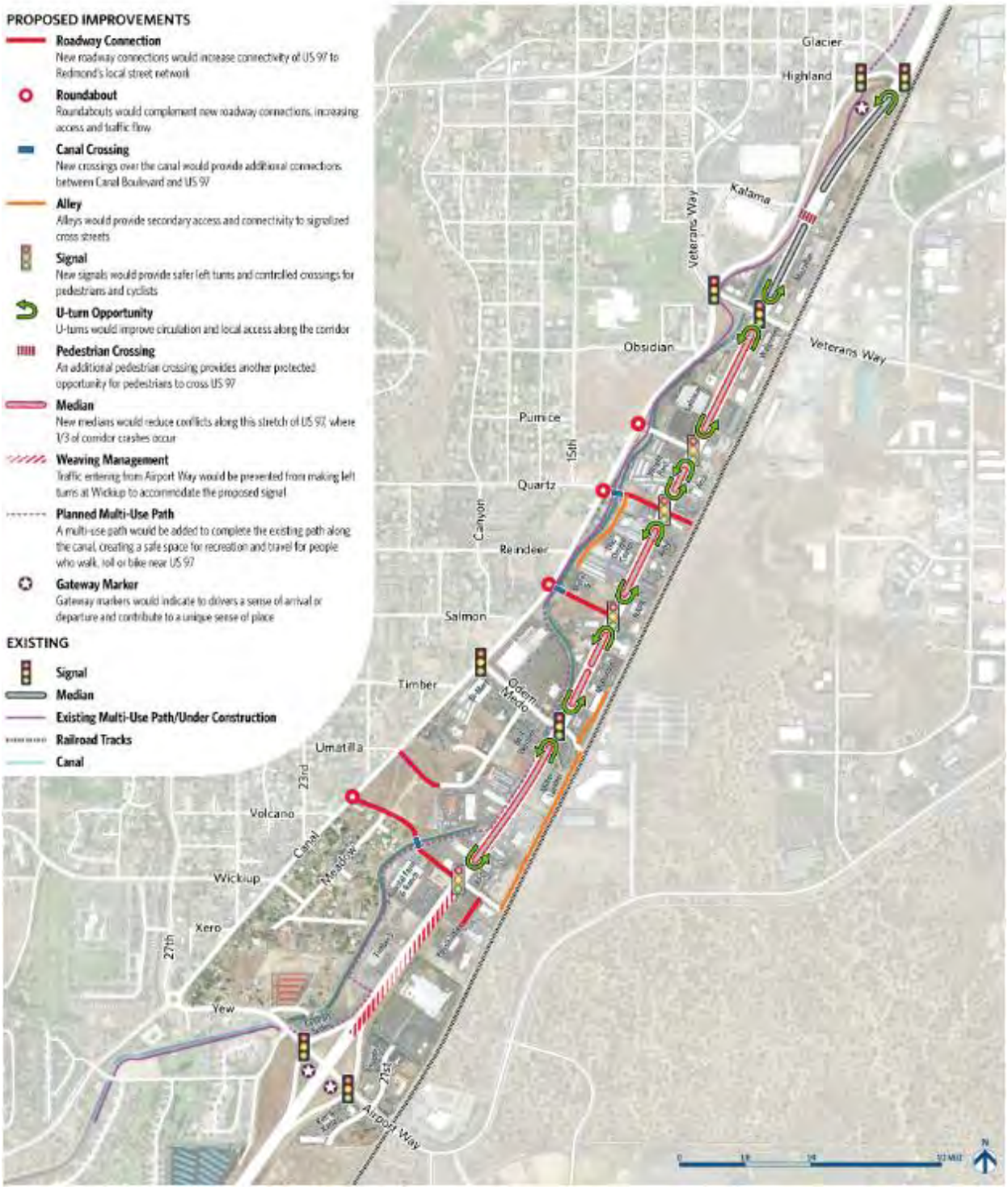


Figure 3-22. US 97 South Redmond Corridor Project Concept

US 97 / Evergreen Avenue

The 2020 TSP shows that localized intersection improvements are proposed throughout the City along with strategic roadway extensions to promote greater connectivity. These projects will improve operations around the City but will not reduce the demand at the US 97/Evergreen Avenue intersection.

There are no left-turns permitted from US 97 between Evergreen Avenue and the NW Canal Boulevard interchange, so this intersection serves these consolidated travel demands. The City's 2020 TSP notes this operational deficiency and identifies an intersection safety project (Project I18). However, no details as to what this project is or what it will cost are specified within the plan. The TSP also states that the City will work with ODOT to adopt alternative mobility targets at this intersection, similar to the agreements established between the City and ODOT within the Senate Bill 1544 process.

The latest proposal for alternative mobility standards was to assess hourly conditions (instead of peak 15-minute conditions) during the average weekday (rather than peak summer). This would remove the 11.2 percent seasonal adjustment and replace it with 0.2-percent and would remove the peak hour factor (0.98 to a factor of 1.0). Even with these measures, this intersection would still exceed mobility standards in 2040.

Accordingly, additional improvements will be needed to address east-west connectivity in northern Redmond. The prior 2008 City of Redmond TSP included a new interchange between Evergreen Avenue and Canal Boulevard, which supported the industrial lands and bridged the City's "Neapolitan" (see Figure 3-23) residential, commercial, and industrial zoning districts. This interchange was the northern terminus of the Reroute Phase 2, and the prior inclusion of this project provided the "missing left-turns" throughout the entire north half of Redmond. The City's current 2020 TSP removed this connection along with the entire Reroute Phase 2 alignment, but the TSP provides no suitable mitigation to address these remaining east-west demands, aside from accepting higher levels of congestion at the key nodes (Yew Avenue, Veteran's Way, and Evergreen Avenue, as well as the Maple Avenue corridor).

The REG report is not specific as to the location of a new overcrossing or interchange on US 97, but highlights that the numerous "point" issues experienced on the highway (and on the parallel and connecting local street system), are directly related to demands for this connection. This is evident by the high demands on the right-in, right-out connections to US 97 and the supporting Evergreen Avenue and Maple Avenue routes, which together form a loosely connected "interchange" that extends along City streets (and in places through residential neighborhoods). This is a broader issue than the REG, and is the type of high-cost issue that would generally be included as a "vision project" within a Transportation System Plan, particularly as a new grade-separated connection would require a combination of local, state, and federal funding.

In the interim, the most effective mitigation for the US 97 corridor remains the construction of the 9th Street eastside arterial. The funded completion of the corridor between SW Airport Way and OR 126 will allow travel from the Yew Avenue to REG, as well as returning travel destined toward southern Redmond and Bend. These improvements, together with investments in the Veteran's Way connection will support local and regional travel that avoids this constrained location.



Figure 3-23. Redmond "Neapolitan" Zoning Areas.

US 97 / SW Glacier Avenue – SW Highland Avenue

The US 97/SW Glacier Avenue – SW Highland Avenue intersection was previously included in Redmond/ODOT Agreement No. 28621 for an alternative mobility standard. However, it was not included within the TSP or the *US 97 Facility Plan*. The analysis shows that this intersection will exceed ODOT's mobility standards but will still operate below capacity in 2040 with the site. The TSP identifies an intersection safety project for this intersection as I28. However, no details as to what this project is or what it will cost is specified within the plan.

US 97 / SW Veteran's Way

The US 97/Veteran's Way intersection was previously identified as deficient and alternative mobility standards were adopted in 2021 in recognition of the inability of this constrained location to meet ODOT's typical mobility standards. The analysis presented in this report shows that, even during non-peak average annual conditions, the intersection will exceed the revised performance standards with or without REG development through the planning horizon.

Specific to this intersection, the SRCP included analysis of this intersection, and recommended access management along US 97 north and south of SE Veteran's Way, with the traffic signal modified to allow U-turns to accommodate these displaced turns onto the mainline. With this type of treatment, more signal green time is then allocated to left-turns/U-turns to support the redirected trips, and the existing right-

turn on red and eastbound right-turn overlap treatments would need to be eliminated. This treatment generally has the effect of consolidating traffic at the intersections (where most of the crashes are currently occurring) and results in incrementally increased congestion at an already-failing intersection as the signal must also serve the redirected trips.

Accommodating U-turns prior to entering the intersection also requires that left-turns start their maneuver farther from the intersection (resulting in a reduced saturation flow rate). An illustration of this "typical" intersection treatment from the SRCP, including carve-outs to support the slower and wider U-turns, are shown in Figure 3-24. With the adjacent private building just beyond the edge of existing sidewalk it is not clear that this type of treatment would even be feasible at the Veteran's Way intersection, but more detailed design plans to review the revised operations or explore the feasibility were not included within the SRCP beyond this concept.



Figure 3-24. Recommendations from the South Redmond Corridor Plan to restrict corridor access, consolidate movements at the signalized intersections, and add U-turn maneuvers at US 97/Veteran's Way and other signals along the corridor.

The SRCP notes that trips are consolidated from the entire east side of Redmond at the Veteran's Way intersection (and Yew Avenue interchange) due to the lack of additional railroad crossings, with the following excerpt within the report:

> *"SW Veterans Way is the most capacity constrained point on the corridor. The limited number of crossings of the BNSF railroad east of US 97 forces traffic from the employment and industrial area from the east via a limited number of crossings, resulting in heavy cross traffic. The recommended concept optimizes the intersection to the extent feasible without larger transportation system changes or more expensive grade separation options on US 97. Additional options could be*

> *considered to improve intersection performance and reduce delay at the intersection, which could include: 1) eliminating turning movements at the intersection that will route traffic to use U-turns or indirect lefts at nearby intersections, 2) grade separation of the whole intersection or certain intersection movements or 3) additional crossing of the rail line to allow for traffic volumes to be balanced across additional crossings. These solutions were considered but dismissed during this study due to the high cost of such improvements, physical limitations at the intersection, lack of support from businesses and residents, transportation safety considerations and anticipated difficulty permitting"*

Related to safety, the SRCP identifies the inclusion of the US 97/Veteran's Way intersection within ODOT's 90th to 95th percentile SPIS. While the report makes reference to and defines Crash Modification Factors (CMF), describes how CMFs are generally used and selected by ODOT, and provides references to where they can be found, the report does not identify or review any specific CMFs in response to the safety or operational findings, or as part of the establishment of alternative mobility targets (which have already been approved by the Oregon Transportation Council). Accordingly, no operational or safety mitigation specific to SE Veteran's Way was identified in this report or adopted as part of the SRCP. The overall report finds that the consolidation of trips at the signalized intersections will "greatly reduce risky driving maneuvers" and "increase the safety and comfort of bicycles and pedestrians" (it was noted that there were no reported pedestrian or bicycle crashes at the US 97/Veteran's Way intersection within the five-year analysis period reviewed).

Accordingly, as REG is not modifying the underlying land use assumptions within ODOT's recently approved plan for US 97, no additional mitigation is proposed at the US 97/Veteran's Way intersection as part of the REG. Mitigation will be provided through the contributions toward the parallel 9th Street "Eastside Arterial" corridor, which provides an alternate route to US 97 and complies with the *Alternate Location Mitigation* described in City Code.

SW Airport Way / SW Veteran's Way Roundabout

This intersection is planned as a single-lane roundabout as part of the City's Eastside Arterial project. The analysis presented within this report shows a single-lane roundabout design that serves as the connection of SE Veteran's Way, SE Airport Way, SE 9th Street, and SE 1st Street. The City's tentative plans include the SE Veteran's Way connection to SE 9th Street at a separate point, and are also considering where and how to connect SE 1st Street (see Figure 3-25). These connections are not yet finalized.

In addition to the connections provided in this design, there is also a high level of uncertainty associated with the travel forecasts. Even if the comparatively higher levels of growth shown within this report were reached, the addition of a dedicated westbound right-turn lane could restore intersection performance (and provide about 20% reserve capacity). It is also not certain that the levels of growth identified within the DSL property and REG will be achieved by 2040. As the single-lane roundabout operates under its carrying capacity, this smaller intersection treatment would be a preferred treatment and would comparatively provide higher levels of safety performance compared to a multilane design. Further design needs should be reviewed, identified, and constructed through the City's Progressive Design Build project. No mitigation is proposed as part of the REG development to address this planned improvement; REG has been in coordination with the design team to ensure that planning for this intersection reflects this planned employment center.



Figure 3-25. Conceptual realignment concept within the DAP.

Yew Avenue Corridor (19th Street to SW Canal Boulevard)

This Transportation Impact Analysis includes an assessment of several surrounding intersections, but the issues pertaining to the Yew Avenue corridor from the entrance of the DSL Large-Lot Industrial site to the Canal Boulevard roundabout require a broader review, particularly with City plans to accommodate higher employment values within the DSL property than had been included within the adopted TSP. Context on this corridor includes the following:

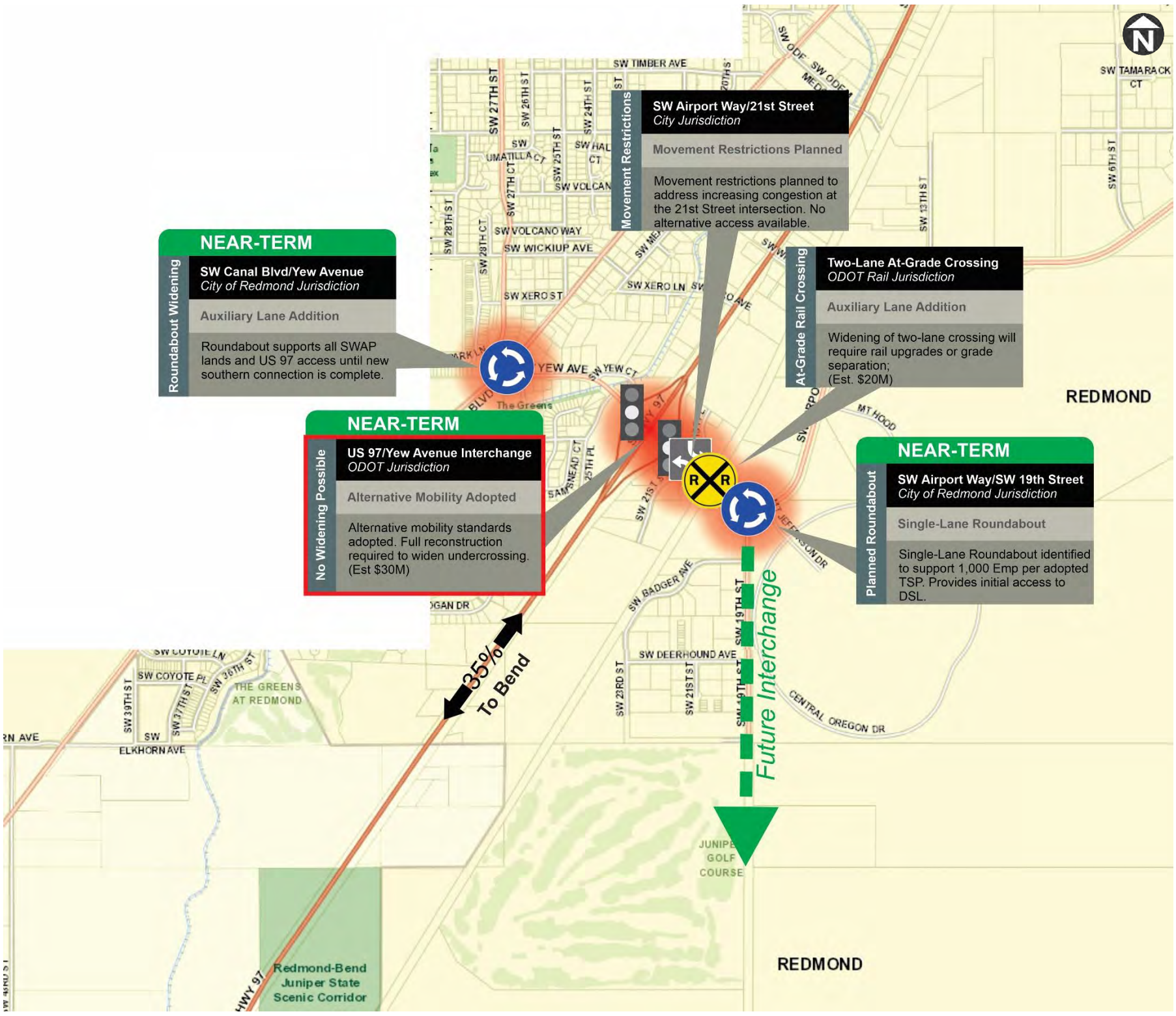
- The single-lane Yew Avenue/SW Canal Boulevard roundabout will require widening to a multilane design near-term. The need for this improvement is largely being driven by development within the Southwest Area Plan (SWAP) lands, but also serves substantial land area to the north through the 27th Street corridor and connecting these lands with US 97.
- US 97/Yew Avenue ramps have been identified as deficient, and there are limited improvement options due to the geometric configuration and structural constraints. There is no ability to widen the Yew Avenue undercrossing without fully reconstructing the interchange, so alternative mobility standards have recently adopted by ODOT within the SRCP. The policy acceptance of

higher delays will not alleviate congestion (or safety issues) and the operations analysis show that there is very limited remaining capacity today.

- The SW 21st Street intersection with SW Airport Way has been identified as deficient as part of prior development applications related to projects on the north and south side of SW Airport Way, along with constrained sight lines due to the grades created with the Yew Avenue interchange. The City has identified turning movement restrictions as a future plan given the lack of alternative access options for these lands situated between US 97 and the railroad. These contemplated movement restrictions will place more pressure on the surrounding intersections (and add more rail crossings) to accommodate U-turns, but improvement options are limited due to the close spacing.
- There are conceptual plans to grade separate the Airport Way rail crossing. This project contemplates retention of the depressed interchange grade east through the rail crossing, providing approximately 18-feet of clearance from roadbed to the bottom of the railroad support beams. Prior cost estimates have been prepared but do not reflect current construction pricing; it is expected that this project would cost approximately $20M and result in substantial construction detours.
- The SE 19th Street/Airport Way intersection is planned as a single-lane roundabout, with this plan premised on about 1,000 employees within the DSL property. The City is currently reviewing the feasibility of increasing this employment to serve up to 6,550 employees by 2040. These plans have not been finalized or adopted.
- Preliminary plans for the DSL Large Lot Industrial (LLI) lands identify a phased access plan, with initial development reliant on the Airport Way/19th Street intersection with an improved single-lane roundabout. Once the capacity of this roundabout is exceeded, the City is contemplating widening to a multi-lane design and ultimately constructing a new southern interchange with US 97.

These issues are illustrated in Figure 3-26.

The initial phases of the DSL Large-Lot Industrial site could be supported with a single-lane roundabout, the current two-lane rail crossing, and acceptance of increased congestion at the Yew Avenue ramps. Some of this current congestion will be reduced with improvements at the Yew Avenue/Canal Boulevard roundabout, which is planned for expansion with a right-turn auxiliary lane addition (see Figure 3-27 showing existing congestion). No other improvements are identified along the corridor.



0

Figure 3-26. Summary of Southern Redmond Infrastructure Needs.



Figure 3-27. March 2024 westbound congestion at the SW Canal Boulevard/Yew Avenue roundabout.
Photo taken at 5:15 PM

A sensitivity analysis was prepared to identify how much growth could occur within the DSL large-lot employment site with a single-lane roundabout prior to the next phase of improvements. Plans identified within the March 2024 DSL traffic report indicate that the next phase of improvements will include widening the single-lane roundabout at SW 19th Street to a multilane roundabout, with this later followed with the grade-separated connection to the south. This prior analysis indicates that with a "lower bound" scenario of 10 employees per acre, up to 5,200 employees could be supported before roundabout widening was required (refer Figure B-13 of the Kittelson & Associates March 2024 report).

Analysis was prepared to validate these prior findings by factoring the existing traffic volumes using a 2% annual growth rate and assuming a development scenario that the threshold employment levels could be reached in just 10 years (by 2034 to reduce regional growth from utilizing available system capacity). Trip rates for the DSL LLI lands were developed using ITE's "Industrial Park" land use, using the number of employees as the surrogate value (other industrial uses have similar employee-based rates, with the Industrial Park land use having more similar data ranges within the scale contemplated).

It should be noted that the term "Employee" within the ITE manual relates not to how many persons are on-site at a given time, but the total persons employed by the use on a full- or part-time basis. This analysis conservatively does not include the anticipated "surge" in rerouted trips anticipated with the connection of 9th Street to OR 126 or other approved/pending "pipeline" projects, applying only the existing 2024 traffic volumes and maintaining the current travel patterns. Inclusion of these typical factors would further degrade the operations. This analysis assumes that all access to DSL is provided from SW 19th Street, and that only secondary/emergency access is provided beyond this connection. Findings of this analysis are simplified and illustrated in Figure 3-28.

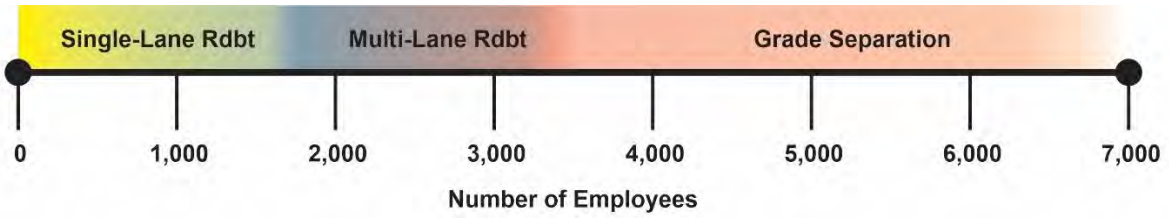


Figure 3-28. Simplified SW 19th Street/SW Airport Way Intersection Needs.

This analysis shows that the single-lane roundabout currently planned by the City can fully support the 1,000 employees identified and included within the City's Transportation System Plan. The single-lane roundabout can support about 1,500 employees before additional improvements will be needed, which can take one of two forms: 1) provide additional capacity along Yew Avenue, or 2) develop a southern interchange.

Beyond the operational analysis findings, there are critical functional considerations:

- There is 475-feet of storage between the railroad stop bar and the center point of the SW Airport Way/SW 19th Street intersection. Assuming a roundabout with an Inscribed Circumference of about 160 feet this would provide about 400-feet of eastbound and westbound storage along SW Airport Way between the roundabout and the railroad. For typical daily conditions this would be adequate, but with the location adjacent to the Deschutes County Fairgrounds there are periods with directional flows that will result in much longer queues. While there are potential queue mitigation strategies that could be pursued, it is recommended that the alignment of the roundabout shift east to the extent possible to minimize the possibility of this queue interaction with the railroad.

- The failure of the single-lane roundabout will initially occur on the northbound approach when employees are leaving the DSL site. At this location, nearly all trips will travel west, conflicting with westbound through travelers on SW Airport Way headed toward US 97. This failure does not result in long queues toward the railroad, as eastbound travel direction essentially has "priority" entering the roundabout.
- If the primary 19th Street access to the DSL lands requires widening of the single-lane roundabout, an alternative construction access will be needed that provides this same level of capacity to support widening the roundabout while it is reconstructed. There may be options to simplify this future widening within the initial single-lane roundabout construction so that these additional lanes can be added outside of the travel lanes, but this should be considered within the initial design if this is a desired phasing plan.
- The expansion of the single-lane roundabout to a multilane design will need to address the conflicts with northbound left-turns and westbound through vehicles, requiring two dedicated lanes to serve these conflicting movements (and likely an eastbound right-turn lane to support morning demands). This will require widening the westbound approach to provide two exit lanes from the roundabout toward the BNSF at-grade rail crossing. With the high traffic volumes headed west it is unclear whether merging these lanes would be possible, particularly as additional capacity would also be required at the Yew Avenue ramp terminals. More likely, two westbound lanes would extend at least to the northbound ramp terminal. This will require widening the at-grade rail crossing and associated safety modifications, which is feasible but faces significant policy implications with the railroad.
- There are prior COIC plans that explored grade-separation of the SW Airport Way BNSF rail crossing effectively maintaining the depressed grade of the Yew Avenue ramps under the crossing before returning to the current grade. If pursued, this plan avoids the rail crossing widening policies, but would likely cost about $20M+ and would require closure of the airport and fairgrounds access through an extended period of time while it was constructed. At a maximum slope of 5% plus tapers this design would require about 500 feet of roadway reconstruction to reconnect to the existing grade of SW Airport Way.
- The SW 21st Street intersection on SW Airport Way has been identified as deficient, and there are no alternative routes to support access to these lands. The north side of the intersection supports commercial uses as BasX, and the south side connects to retail lands. Turning movement restrictions has been identified as the only viable improvement, but this will increase out-of-direction travel, add to the number of rail crossings, and increase U-turns at the roundabouts, further reducing capacity along this corridor.
- While a multilane roundabout and railroad grade separation could address the DSL LLI access needs, much more substantial improvements would also be needed at the Yew Avenue ramps to support this level of added trips; however, there is no ability to widen the undercrossing (see Figure 3-29) or increase storage between the ramp terminals with the current back-to-back left-turn design. This reflects a critical bottleneck constraint to improving this route.



Figure 3-29. Existing three-lane Yew Avenue undercrossing showing no room for widening.

While there is numerical capacity at the SW 19th Street connection to SW Airport Way with a multilane roundabout to support about 3,200 DSL employees, the planning cost of this connection will also include the following infrastructure:

- Multilane roundabout/approach widening: Est. $5M
- Grade-separated rail crossing, utility relocations: Est. $20M
- Yew Avenue Interchange improvements: Est. $30M

Even with these improvements, completion of a new southern interchange will still be required to support the remaining "lower bound" DSL development scenario. Costs to construct a new grade-separated connection south of the Yew Avenue interchange will be lower than the combined reconstruction costs, and would provide substantially higher capacity. Accordingly, it is recommended that the DSL LLI access plan only consider the single-lane roundabout option before directly transitioning into planning for a new southern connection that includes grade-separation of US 97 and the BNSF railroad. This new southern route should extend the "Eastside Arterial" as a complete and more direct route around the City's east side. This approach would save about $50M on transportation infrastructure along the Yew Avenue corridor, would reduce construction impacts, and provide much higher travel benefits to US 97.

Effectively, with the limited available capacity and constraints on Yew Avenue between SW Canal Boulevard and SW 19th Street, long-term this segment should form a "branch" of the Eastside Arterial, and not the "trunk", with the realigned route shown in Figure 3-30 providing a more viable long-term route. This will also allow businesses along the Yew Avenue corridor to maintain their current access while prioritizing mobility along the Eastside Arterial.



Figure 3-30. Conceptual realignment of SW 19th Street to SW Airport Way.

US 97 Northbound Ramp/Yew Avenue

The traffic signal at the US 97 Northbound Ramp/Yew Avenue intersection is expected to exceed capacity by 2040 regardless of the REG, and in large part due to the added trips from the DSL Large-Lot Industrial properties. This intersection, as well as the US 97 corridor through Redmond, went through a comprehensive review in the US 97 South Corridor Plan and ODOT has adopted alternative mobility standards at the interchange ramps which have been approved by the Oregon Transportation Commission. This analysis shows that by 2040 even these new alternative mobility standards are exceeded on the northbound ramp terminal. As discussed above, the ability to improve the interchange ramps will be closely tied to the improvements made to support the DSL Large Lot Industrial properties. The zoning revisions to the REG generate fewer trips than previously planned, so no changes to ODOT's adopted plans are needed.

SW Airport Way/SW 19th Street

The single-lane roundabout planned with the City's Eastside Arterial Project is adequate development of the REG assuming the planned density of 1,000 employees within the DSL LLI lands. This intersection is included within the City's SDC and CIP list as a single-lane roundabout (Project TR 2202), so no additional mitigation is required.

MUTCD Signal Warrants

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, and are often applied as a surrogate for installation of roundabouts or other types of capacity improvements. Within a signal warrant analysis, the decision to include or exclude right-turning movements within the analysis is discretionary. Right-turning volumes are typically excluded if they occur with low delays, or if they are provided a separate right-turn lane (or if a right-turn lane could be installed).

While there are 11 Signal Warrants, this analysis only considers the volume-based 8-Hour (Warrant 1), 4-Hour (Warrant 2), and Peak Hour (Warrant 3) traffic volumes, with volume profiles estimated from typical travel profiles identified within NCHRP 03-110. As shown in Table 3-14, this highlights the potential need for capacity improvements at the major intersections on NE 9th Street and at the Veterans Way/OR 126 and SW 19th Street/Airport Way intersections.

Table 3-14. MUTCD Volume-Based Warrant Summary

Intersection	Traffic Control	Applicable?	Warrants Met?
1: NE 9th St / NE Maple Ave	Minor-Street Stop-Control	Yes	Yes Warrants 1, 2, and 3 Met
2: US 97 / NE Hemlock Ave	None	No (Right-In/Right-Out)	N/A
3: NE 9th St / NE Hemlock Ave	All-Way Stop-Control	Yes	Yes Warrants 1, 2, and 3 Met
4: US 97 / Antler Ave	Minor-Street Stop-Control	No (Right-In/Right-Out)	N/A
5: NE 9th St / E Antler Ave	Minor-Street Stop-Control	Yes	Yes Warrants 1, 2, and 3 Met
6: SE 15th St / Antler Ave	Minor-Street Stop-Control	Yes	No
7: SE 17th St / Antler Ave	Minor-Street Stop-Control	Yes	No
8: SE 9th St / Evergreen Ave	Minor-Street Stop-Control	Yes	Yes Warrants 1, 2, and 3 Met
9: US 97 / Evergreen Ave	Signalized	No (Signalized)	N/A
10: Lake Rd / OR 126	Minor-Street Stop-Control	Yes	No
11: SE 9th St / OR 126	Minor-Street Stop-Control*	No (Funded Roundabout)	N/A
12: Veterans Way / OR 126	Minor-Street Stop-Control	Yes	Yes Warrants 1, 2, and 3 Met
13: US 97 / SW Glacier Ave - SW Highland Ave	Signalized	No (Signalized)	N/A
14: US 97 / SW Veterans Way	Signalized	No (Signalized)	N/A

(Continued)

Table 3-14 (Continued). MUTCD Volume-Based Warrant Summary

Intersection	Traffic Control	Applicable?	Warrants Met?
15: Airport Way / SW Veterans Way	All-Way Stop-Control*	No (Funded Roundabout)	N/A
16: US 97 SB Ramp / Yew Ave	Signalized	No (Signalized)	N/A
17: US 97 NB Ramp / Airport Way	Signalized	No (Signalized)	N/A
18: SW 19th St / Airport Way	Minor-Street Stop-Control*	Yes	Yes Warrants 1, 2, and 3 Met

As shown in Table 3-14, all of the intersections that meet signal warrants have been discussed in the previous section with the exception of the NE 9th Street/NE Hemlock Avenue intersection.

NE 9th Street/NE Hemlock Avenue

This all-way stop-controlled intersection meets the City's overall level of service standard, but will operate with long delays and exceed capacity on the northbound leg. A review of the volume-based signal warrants shows that it will meet Warrants #1, #2 and #3 with the forecast 2040 volumes, which is considered a significant impact per City Development Code. The City's TSP includes an intersection improvement project at this intersection as described below.

TSP Improvement Description

Map ID	Facility	Improvement	Notes	2020 Cost Estimates
I15	NE 9th St/NE Hemlock Ave	Consider traffic signal or roundabout	Signal Preferred	$0.5M

A review of the volume forecasts shows that this intersection would meet Warrant #1 in year 2034 assuming straight-line growth of the REG project and surrounding developments. This project has been included within the City's SDC list, so funding for the improvement (which will presumably be a roundabout with a cost of approximately $2M) will be generated by REG and other citywide projects.

9. Arterial and Collector Left Turn, Right Turn Lane Assessment

Left-Turn Lane Warrants

City code requires that left-turn lane warrants be assessed based on guidance within NCHRP 193 for City intersections and ODOT's Analysis Procedures Manual for ODOT-maintained intersections.

Left-turn lane warrants within NCHRP 193, *Development of Left-Turn Lane Warrants for Unsignalized Intersections*, are based on the type of road (rural two-lane highway, rural four-lane highway, or urban/suburban), whether it is a three-leg or four-leg intersection, left-turning volume and major street volume. ODOT Transportation Planning and Analysis Unit's publication, *Analysis Procedures Manual,* bases left-turn lane warrants on the posted roadway speed, bidirectional traffic volume, and percentage of the total volume turning left.

Both methodologies are essentially a cost-benefit calculation of the safety benefits provided by separating through and turning traffic versus the construction costs. Left-turn lane warrants do not apply to stop-controlled minor-street approaches, signalized, or roundabout intersections. A summary of the study area intersections and the applicability of left-turn lane warrants is summarized in Table 3-15.

Table 3-15. Summary of Left-Turn Lane Warrant Applicability

Intersection	Applicable?	Met?
1: NE 9th St / NE Maple Ave	Yes, NE Maple Avenue is classified as a *Minor Arterial*. Westbound left-turn lane warrants are illustrated in Figure 3-31.	Yes *Westbound*
2: US 97 / NE Hemlock Ave	No. This portion of US 97 contains a raised median preventing left-turns, resulting in a right-in, right out intersection with Hemlock Avenue.	n/a
3: NE 9th St / NE Hemlock Ave	No, with the all-way stop control the intersection capacity needs dictate whether to add a left-turn lane.	n/a
4: US 97 / Antler Ave	No. This portion of US 97 contains a raised median preventing left-turns, resulting in a right-in, right out intersection with Antler Avenue.	n/a
5: NE 9th St / E Antler Ave	Yes, NE 9th Street is classified as a *Minor Arterial*. Northbound and southbound left-turn lane warrants are illustrated in Figure 3-31.	Yes *Northbound & Southbound*
6: SE 15th St / Antler Ave	Yes, Antler Avenue is classified as a *Major Collector*. However, with no westbound left-turn volume left-turn lane warrants are not met.	No
7: SE 17th St / Antler Ave	Yes, Antler Avenue is classified as a *Major Collector*. However, with no westbound left-turn volume left-turn lane warrants are not met.	No
8: SE 9th St / Evergreen Ave	Yes, NE 9th Street is classified as a *Minor Arterial*. Northbound and southbound left-turn lane warrants are illustrated in Figure 3-31.	Yes *Southbound*
9: US 97 / Evergreen Ave	No, at signalized intersections the intersection capacity needs dictate whether to add a left-turn lane.	n/a
10: Lake Rd / OR 126	Yes. OR 126 is classified as a *Major Arterial*. Westbound left-turn lane warrants are illustrated in Figure 3-32.	Yes *Westbound*
11: SE 9th St / OR 126	No, a roundabout is funded at this location in the CIP, which negates the need for left-turn lanes.	n/a
12: Veterans Way / OR 126	No, existing westbound left-turn lane provided.	n/a
13: US 97 / SW Glacier Ave - SW Highland Ave	No, at signalized intersections the intersection capacity needs dictate whether to add a left-turn lane.	n/a
14: US 97 / SW Veterans Way	No, at signalized intersections the intersection capacity needs dictate whether to add a left-turn lane.	n/a
15: Airport Way / SW Veterans Way	No, with both the existing all-way stop control and funded roundabout, the intersection capacity needs dictate whether to add a left-turn lane.	n/a
16: US 97 SB Ramp / Yew Ave	No, at signalized intersections the intersection capacity needs dictate whether to add a left-turn lane.	n/a

(Continued)

Table 3-15 (Continued). Summary of Left-Turn Lane Warrant Applicability

Intersection	Applicable?	Met?
17: US 97 NB Ramp / Airport Way	No, at signalized intersections the intersection capacity needs dictate whether to add a left-turn lane.	n/a
18: SW 19th St / Airport Way	No, existing westbound left-turn lane provided.	n/a

The need for a left-turn lane was evaluated for the site accesses, the NE 9th Street/NE Maple Avenue, NE 9th Street/E Antler Avenue, and the Lake Road/OR 126 intersections for 2040 'With Site' conditions during the weekday p.m. peak hour and is shown in Figures 3-31 and 3-32. As shown in the figures, left-turn lane warrants are met in the westbound direction at the on NE Maple Avenue at NE 9th Street, in the north- and southbound directions on NE 9th Street at E Antler Avenue, in the southbound direction on SE 9th Street at Evergreen Avenue, and in the westbound direction on OR 126 at Lake Road.

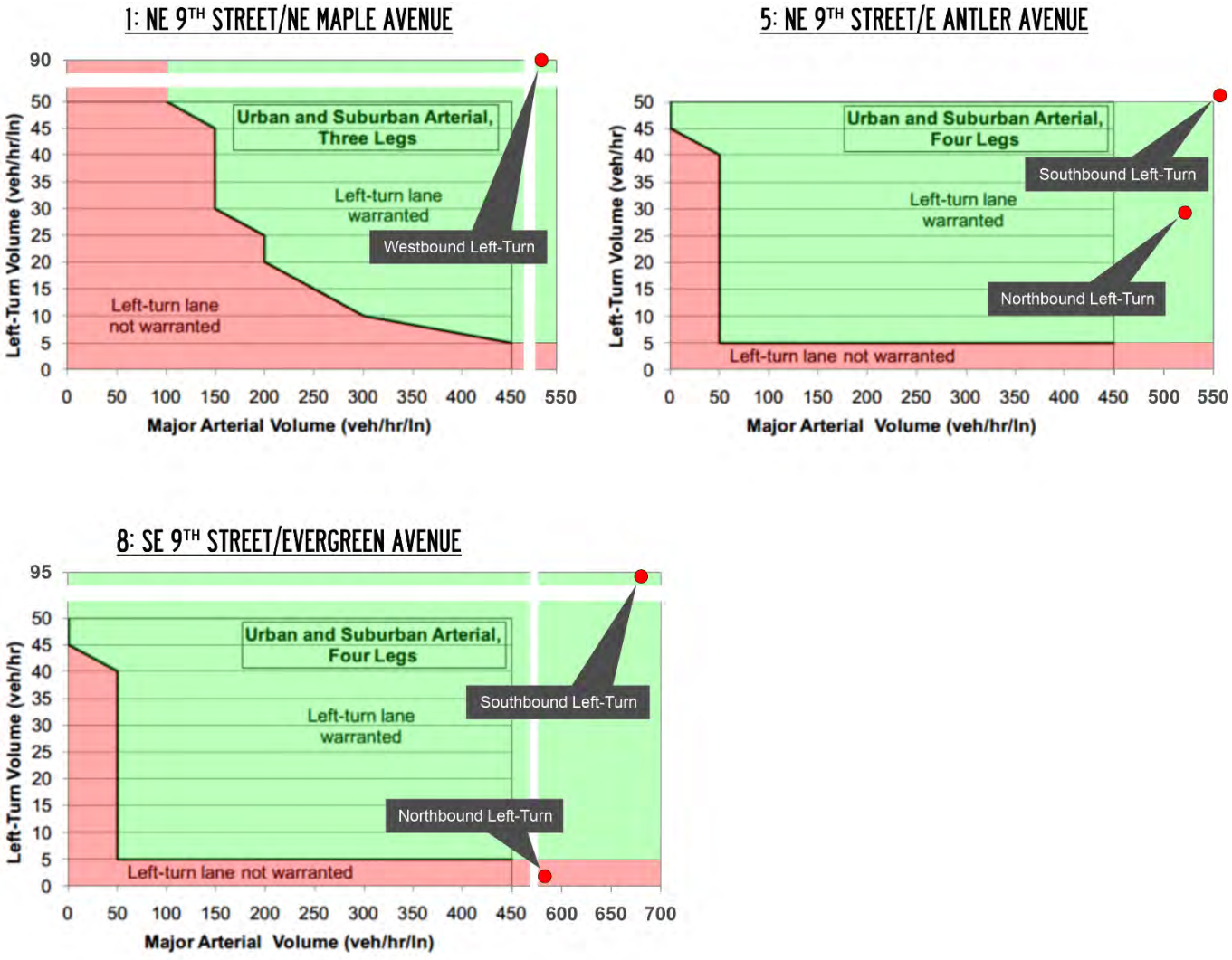


Figure 3-31. Left-Turn Lane Evaluation for City Intersections: 2040 Total Traffic Volumes, Weekday PM Peak Hour.

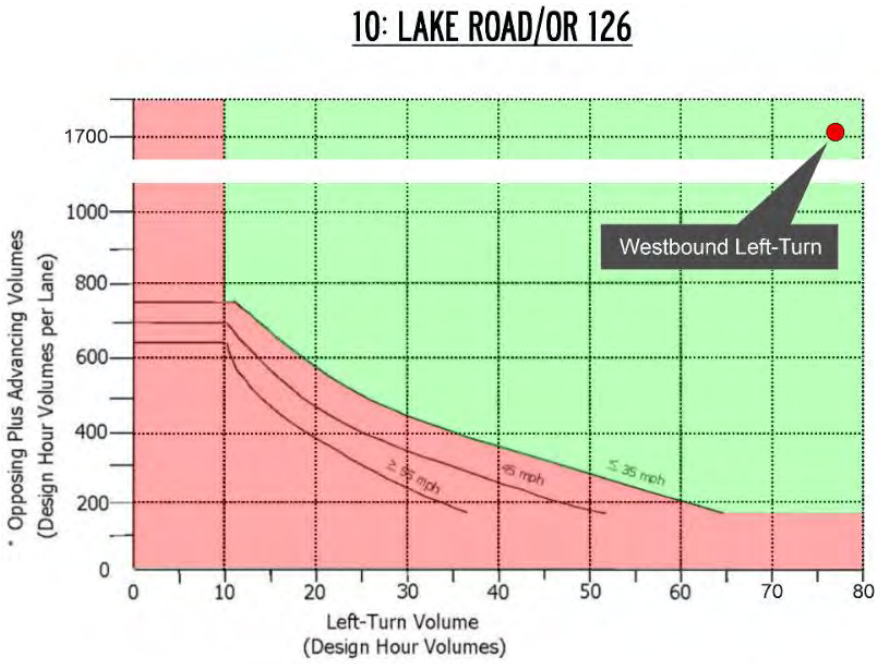


Figure 3-32. Left-Turn Lane Evaluation for ODOT Intersections: 2040 Total Traffic Volumes, 30th Highest Hour.

All of the locations identified for left-turn lanes are already identified for traffic control improvements that make the locations identified for left-turn lanes non-applicable, as summarized below:

- NE 9th Street/NE Maple Avenue – identified for reconstruction as a roundabout. Project is not included within the City's SDC or CIP list so no funding has been secured.
- NE 9th Street/NE Hemlock Avenue – identified for signalization (which will become a roundabout given the adjacent improvements). The project is included within the City's SDC list.
- NE 9th Street/E Antler Avenue – identified within this report for reconstruction as a roundabout coordinated with the City's Eastside Arterial project.
- SE 9th Street/E Evergreen Avenue – identified within this report for reconstruction as a roundabout to support the REG commercial lands.
- OR 126/Lake Road – identified within the City's TSP for restrictions to right-in, right-out movements only. A pending private development application is considering modifications to this to include a left-turn lane, with associated costs borne by that project.

Accordingly, there are no locations where a new left-turn lane is recommended.

Right-Turn Lane Warrants

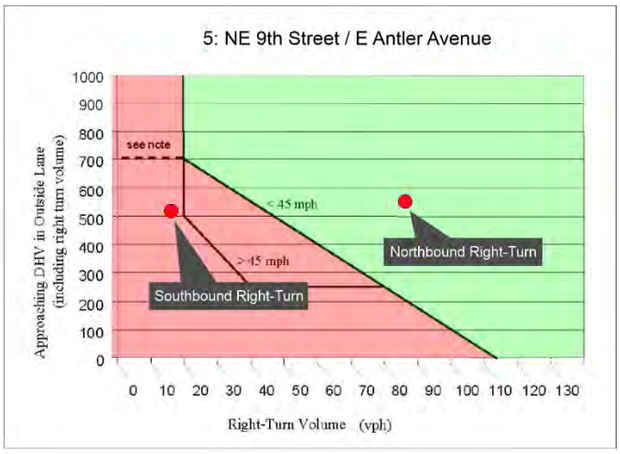
The purpose of a right-turn lane is to improve safety and capacity of a roadway by reducing the speed differential between through vehicles and decelerating vehicles. Within an urban environment, facility design considerations should include the increased pedestrian crossing distance, higher resultant through speeds, and right-of-way/streetscape impacts. Right turn lanes are typically reviewed based on the ODOT methodology for rural highways; as such, discretion and engineering judgement is required in applying these criteria to urban roadways. In review of the area context surrounding the industrial site there are very few locations that would be considered candidates for right-turn deceleration lanes. Table 3-16 summarizes this review.

Table 3-16. Summary of Right-Turn Lane Warrant Applicability

Intersection	Applicable?	Met?
1: NE 9th St / NE Maple Ave	No, within the area context right-turn deceleration lanes would not be recommended.	n/a
2: US 97 / NE Hemlock Ave	No, existing northbound right-turn lane already provided.	n/a
3: NE 9th St / NE Hemlock Ave	No, with the all-way stop-control the intersection capacity needs dictate whether to add a right-turn lane.	n/a
4: US 97 / Antler Ave	No, existing northbound right-turn lane already provided.	n/a
5: NE 9th St / E Antler Ave	Yes, this intersection is located in an industrial area that currently serves few pedestrians. Warrants for right-turn deceleration lanes are shown in Figure 3-33. Conversion to a roundabout is planned.	Yes *Northbound*
6: SE 15th St / Antler Ave	Yes, this intersection is located in an industrial area that currently serves few pedestrians. Warrants for right-turn deceleration lanes are not met as shown in Figure 3-33.	No
7: SE 17th St / Antler Ave	Yes, this intersection is located in an industrial area that currently serves few pedestrians. Warrants for right-turn deceleration lanes are not met as shown in Figure 3-33.	No
8: SE 9th St / Evergreen Ave	Yes, this intersection currently serves few pedestrians and is located in an undeveloped area. Conversion to a roundabout is planned.	Yes *Northbound & Southbound*
9: US 97 / Evergreen Ave	No, with signalized intersections the intersection capacity needs dictate whether to add a right-turn lane.	n/a
10: Lake Rd / OR 126	Yes, OR 126 is a state highway and this intersection is located in a low pedestrian environment. Conversion to RIRO is planned.	Yes *Eastbound*
11: SE 9th St / OR 126	No, a roundabout is funded at this location in the CIP, which negates the need for right-turn lanes.	n/a
12: Veterans Way / OR 126	Yes, OR 126 is a state highway and this intersection is located in a low pedestrian environment. Modification to a roundabout is planned.	Yes *Westbound*
13: US 97 / SW Glacier Ave - SW Highland Ave	No, with signalized intersections the intersection capacity needs dictate whether to add a right-turn lane.	n/a
14: US 97 / SW Veterans Way	No, with signalized intersections the intersection capacity needs dictate whether to add a right-turn lane.	n/a
15: Airport Way / SW Veterans Way	No, with the existing all-way stop control and funded roundabout, the intersection capacity needs dictate whether to add a right-turn lane.	n/a
16: US 97 SB Ramp / Yew Ave	No, with signalized intersections the intersection capacity needs dictate whether to add a right-turn lane.	n/a
17: US 97 NB Ramp / Airport Way	No, with signalized intersections the intersection capacity needs dictate whether to add a right-turn lane.	n/a
18: SW 19th St / Airport Way	Yes, Airport Way is a *Minor Arterial* and a right-turn deceleration lane is already provided at the adjacent Mt. Jefferson Drive intersection. Conversion to a roundabout is planned.	Yes *Eastbound*

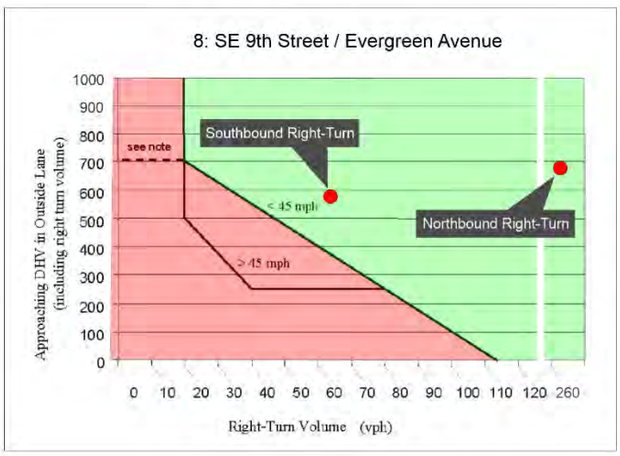
Figure 3-33 depicts the right-turn lane warrant evaluation at each intersection where warrants could be applicable. As shown in the figure, multiple intersections meet the criteria for a right-turn deceleration lane.

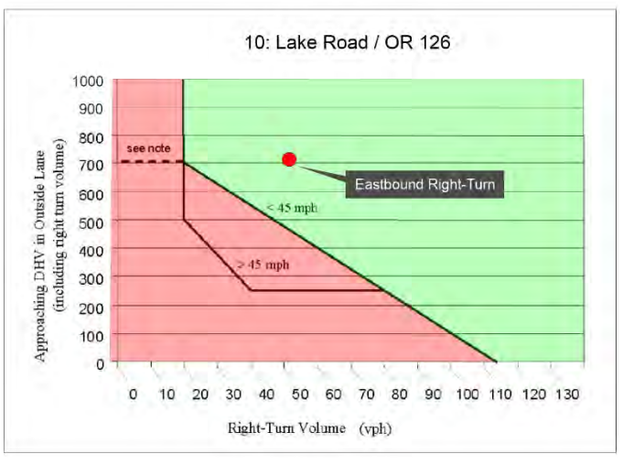
The right-turn warrant analysis shows several locations that will meet the minimum warrant thresholds for a right-turn lane. However, this warrant analysis does not apply if the intersection is improved with a signal or roundabout as identified in the TSP. Of the intersections listed, all but the OR 126/Lake Road intersection are planned for capacity improvements, and the OR 126/Lake Road intersection is designated for right-in, right-out only movements (potentially with a westbound left-turn onto Lake Road). Accordingly, the turn lanes at the Lake Road intersection are the only ones that could apply, and ODOT's policy within urban areas is to avoid right-turn deceleration lanes due to the conflict with cyclists and increased pedestrian crossing distances. Accordingly, there are no locations where right-turn deceleration lanes are recommended.

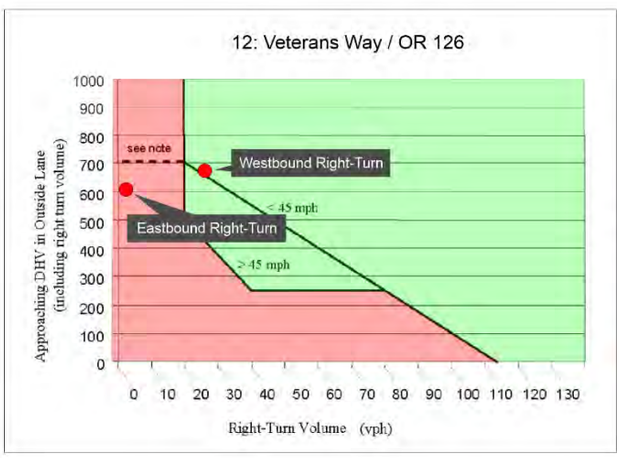












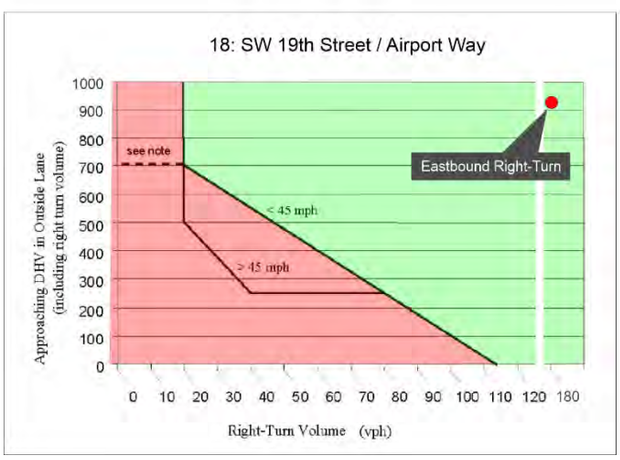


Figure 3-33. Right-Turn Warrant Assessment, Year 2040 “With Project” Conditions.

10. SAFETY REVIEW

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 2017 and December 2021. At the time this report was prepared, this period was reflective of the most recent five-year period available (2022 data has subsequently been released). 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 3-17 summarizes the number and severity of reported crashes at each of the study area intersections. 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.

Table 3-17. Crash Summary (January 2017 to December 2021)

Intersection	Number of Crashes	Crash Severity			Crash Rate per MEV	ODOT 90th % Rate
		Fatal	Injury	Non-Injury		
1: NE 9th St / NE Maple Ave	4	0	2	2	**0.35**	3ST: 0.293 *Urban*
2: US 97 / NE Hemlock Ave	0	0	0	0	0.00	*Right-In/ Right-Out*
3: NE 9th St / NE Hemlock Ave	2	0	0	2	0.20	*All-Way Stop Controlled*
4: US 97 / Antler Ave	2	0	2	0	0.04	*Right-In/ Right-Out*
5: NE 9th St / E Antler Ave	5	0	3	2	**0.53**	4ST: 0.408 *Urban*
6: SE 15th St / Antler Ave						
7: SE 17th St / Antler Ave						
8: SE 9th St / Evergreen Ave	0	0	0	0	0.00	3ST: 0.293 *Urban*
9: US 97 / Evergreen Ave	38	0	23	15	0.54	4SG: 0.806 *Urban*

(Continued)

Table 3-17 (Continued). Crash Summary (January 2017 to December 2021)

Intersection	Number of Crashes	Crash Severity			Crash Rate per MEV	ODOT 90th % Rate
		Fatal	Injury	Non-Injury		
10: Lake Rd / OR 126	8	0	6	2	0.47	3ST: 0.475 *Rural*
11: SE 9th St / OR 126	6	0	3	3	0.31	3ST: 0.475 *Rural*
12: Veterans Way / OR 126	3	0	0	3	**0.53**	3ST: 0.475 *Rural*
13: US 97 / SW Glacier Ave - SW Highland Ave	35	0	18	17	**0.87**	3SG: 0.509 *Urban*
14: US 97 / SW Veterans Way	59	0	30	29	**0.81**	4SG: 0.806 *Urban*
15: Airport Way / SW Veterans Way	9	0	3	6	0.57	*All-Way Stop Controlled*
16: US 97 SB Ramp / Yew Ave	6	0	4	2	0.20	*n/a*
17: US 97 NB Ramp / Airport Way	3	0	2	1	0.09	*n/a*
18: SW 19th St / Airport Way	2	**1**	1	0	0.11	3ST: 0.293 *Urban*

4ST: Four-legged stop-controlled, 3ST: Three-legged stop-controlled

As shown in Table 3-17, all of the intersections experienced a crash rate less than 1.0 crashes per million entering vehicles. Five of the intersections had a crash rate that exceeded ODOT's 90th percentile crash rates. This includes NE 9th Street/NE Maple Avenue, NE 9th Street/E Antler Avenue, Veterans Way/OR 126, US 97/SW Highland Avenue, and US 97/SW Veterans Way. One fatality was reported at the SW 19th Street/Airport Way intersection. Table 3-18 summarizes the types of collisions that occurred at the study intersections.

Table 3-18. Reported Collision Types (January 2017 through December 2021)

Intersection	Rear-End	Turning	Angle	Fixed-Object	Pedestrian	Sideswipe	Other
1: NE 9th St / NE Maple Ave	0	2	2	0	0	0	0
2: US 97 / NE Hemlock Ave	0	0	0	0	0	0	0
3: NE 9th St / NE Hemlock Ave	1	0	0	0	0	0	1 *Backing*
4: US 97 / Antler Ave	2	0	0	0	0	0	0
5: NE 9th St / E Antler Ave	0	1	3	1	0	0	0
6: SE 15th St / Antler Ave							
7: SE 17th St / Antler Ave							
8: SE 9th St / Evergreen Ave	0	0	0	0	0	0	0
9: US 97 / Evergreen Ave	27	2	4	2	1	1	1 *Backing*
10: Lake Rd / OR 126	5	2	0	0	0	0	1 *Head-On*
11: SE 9th St / OR 126	1	3	1	1	0	0	0
12: Veterans Way / OR 126	2	0	0	0	0	1	0
13: US 97 / SW Glacier Ave - SW Highland Ave	24	8	1	1	0	1	0
14: US 97 / SW Veterans Way	29	20	4	1	0	4	1 *Backing*
15: Airport Way / SW Veterans Way	5	2	0	1	0	1	0
16: US 97 SB Ramp / Yew Ave	2	3	0	0	1	0	0
17: US 97 NB Ramp / Airport Way	1	1	1	0	0	0	0
18: SW 19th St / Airport Way	1	0	0	0	0	0	1 *Head-On*

NE 9th Street / NE Maple Avenue Intersection

The NE 9th Street/NE Maple Avenue intersection had four crashes reported over the five-year review period resulting in a crash rate of 0.35 crashes per million entering vehicles. Two of the crashes were turning collisions and two were angle collisions. Two involved a northbound left-turning vehicle and a westbound through vehicle, one involved a westbound left-turning vehicle and eastbound through vehicle, and one involved a northbound through vehicle and westbound through vehicle. Three of the crashes occurred on clear, dry days during daylight hours, while one occurred on a rainy day during the evening when streetlights were on. The crashes resulted in two possible injury crashes with the rest being limited to property damage only. All four crashes were attributed to a failure to yield right-of-way.

No interim mitigation measures were identified at this location. With the City's extension of 9th Street to complete the missing segment between OR 126 and SW Airport Way this route will increasingly serve regional travel. As addressed within this report, pro-rata contributions will be provided from the REG to help fund a roundabout at this location, as identified within the City's TSP.

NE 9th Street/ E Antler Avenue Intersection

Five crashes were reported at the NE 9th Street/E Antler Avenue intersection resulting in a crash rate of 0.53 crashes per million entering vehicles. Three of the crashes were angle collisions that occurred on clear, dry days during daylight hours. Two of the crashes involved a southbound through vehicle being hit by an eastbound through vehicle that reportedly drove through the stop sign and did not yield the right-of-way. The third angle collision involved a southbound vehicle being hit by a westbound through vehicle that did not yield the right-of-way. A review of the west leg of the intersection shows that Antler Avenue has a rural feel as the driver approaches this intersection and no advance warning of the stop sign at NE 9th Street. With the intersection situated on top of a crest vertical curve, the 9th Street corridor is not visible on the approach (see Figure 3-34). The evergreen vegetation adjacent to the road and within the right-of-way could further contribute to this issue and should be either limbed to provide clear sight lines to the stop sign or removed.



Figure 3-34. E Antler Avenue approaching the 9th Street corridor (facing eastbound).

Similarly, while there are sidewalks on the north side of the road on the east leg, as drivers approach the intersection from the rural area there is no advance signage warning drivers of the upcoming two-way stop-controlled intersection. The other two crashes reported at this intersection were a turning collision and a fixed object crash. There were no patterns observed among the other two crashes reported. Until more substantial improvements are made to this intersection (traffic signal or roundabout) consideration should be given to installing advance "Stop Ahead" signs (potentially with pavement stencils) to both the east and west approaches, increasing the size of the Stop signs, adding LED sign borders, or other similar types of visibility enhancements.

As discussed within this report, the REG is proposing to work with the City to advance reconstruction of this intersection to a roundabout with the City's Eastside Arterial plans, which will fully mitigate the current issues. This project is identified within the City of Redmond's Transportation SDC list as a creditable project.

US 97 / Evergreen Avenue Intersection

Although the crash rate for US 97/Evergreen Avenue intersection does not exceed crash rate thresholds owing to the high volumes served, it does have a higher number of crashes overall. Thirty-eight crashes were reported between the years 2017 and 2021 with the vast majority (27) reported as rear-end collisions. Ten rear-end crashes occurred on the southbound approach, ten occurred on the northbound approach, and very few occurred on the east and west approaches. Most of the crash causes were reported as "followed too closely." The number of rear-end collisions on each approach is consistent with

the volume trends at this intersection, with US 97 being the major roadway. This intersection is signalized with protected left-turn phasing and the posted speed on US 97 is 40 mph, and for southbound motorists serves as the first traffic signal encountered for southbound travelers from Madras. The issues present are similar to the trends encountered at Cooley Road in Bend, which could similarly be improved with near-side traffic signals so that vehicles following trucks or trailers would still have a clear view of the approaching intersection. Other crash mitigation measures could include "Signal Ahead" messaging, whether as a static roadside sign (on both sides of the highway) or as a cantilevered overhead treatment located beyond the typical back of queue. A review of the signal timing parameters shows that an all-red time of 1.5 seconds is provided for the northbound and southbound through movements, which likely helps lessen crashes with the minor approach during the clearance intervals.

This intersection was listed within ODOT's 2022 Safety Priority Index System (SPIS) in the top 90th to 95th percentile of crash locations, which requires that ODOT provide its own safety assessment and findings. Unlike a crash rate, the SPIS ranking accounts for both frequency and severity. Information obtained from ODOT Region 4 Traffic Safety Engineer Dan Serpico, PE, as part of this required safety investigation notes that a new southbound-facing sign and actuated flashing beacon has been identified and is funded through the ARTS program (Project #K21655). In addition, coordinated signal timing is currently under evaluation along the US 97 corridor to improve progression and help reduce rear-end crashes.

OR 126/Veteran's Way Intersection

Three non-injury crashes were reported at the Veterans Way/OR 126 intersection in the five-year review period resulting in a crash rate of 0.53 crashes per million entering vehicles at this stop-sign controlled intersection. A summary of the reported crashes are as follows:

- A rear-end crash occurred at 12:00 p.m. on Thursday, May 18, 2017, on the northbound approach. It occurred on a clear, dry day. No cause was indicated.
- A sideswipe crash occurred on OR 126 at 5:00 p.m. on Friday, May 19, 2017, in the westbound direction. The crash occurred during a passing situation and was attributed to reckless driving, following too closely, and improper overtaking.
- A rear-end crash occurred on the northbound approach at 4:00 p.m. on Saturday, February 10, 2018. The crash was not investigated and no cause was given for the collision.

This route currently serves as a regional connection, and will be improved with the REG when a fourth leg is added to provide access through the property as a new Collector. This project is listed within the City's SDC list, but funding should also be pursued with ODOT given its regional connectivity role.

US 97 / SW Glacier - Highland Avenue Intersection

Thirty-five crashes were reported at the US 97/SW Glacier Avenue – SW Highland Avenue intersection, which resulted in a crash rate of 0.87. This is higher than the statewide 90th percentile crash rate for similar urban three-legged, signalized intersections.

- Between 2017 and 2019, this intersection averaged seven to eight crashes per year. There was a significant drop in crashes in 2020 due to the COVID-19 pandemic and subsequent closures. Then the number of crashes went up again in 2021 with 11 reported collisions, exceeding the previous average. A review of preliminary crash data from 2022 shows that the crash numbers may be decreasing again as shown in Figure 3-35.
- The majority (24) of crashes were reported as rear-end collisions. Twelve of these occurred on US 97 in the northbound and southbound directions. Ten were reported on the west leg in the

eastbound through direction. Another two rear-end crashes were reported on the eastbound approach in the right-turn lane. Most of these crashes occurred when the roadway was dry. Only four crashes reported ice on the roadway. Three of the rear-end crashes resulted in suspected minor injury (Injury B) and eight resulted in possible injury (Injury C). The other 13 crashes resulted in property damage only.

- Eight of the reported crashes were turning collisions, four of which involved a southbound through vehicle on US 97 and an eastbound left-turn from SW Highland Avenue. All but one crash involved a southbound vehicle on US 97. One crash resulted in a suspected serious injury (Injury A), one resulted in a suspected minor injury (Injury B), and two resulted in possible injury (Injury C). The remaining crashes did not result in any injuries. Four of the turning crashes resulted in injury and three resulted in property damage only. All of these crashes occurred on clear days when the pavement was dry. The crash report lists disregarding the traffic signal as the cause in five of the crashes.

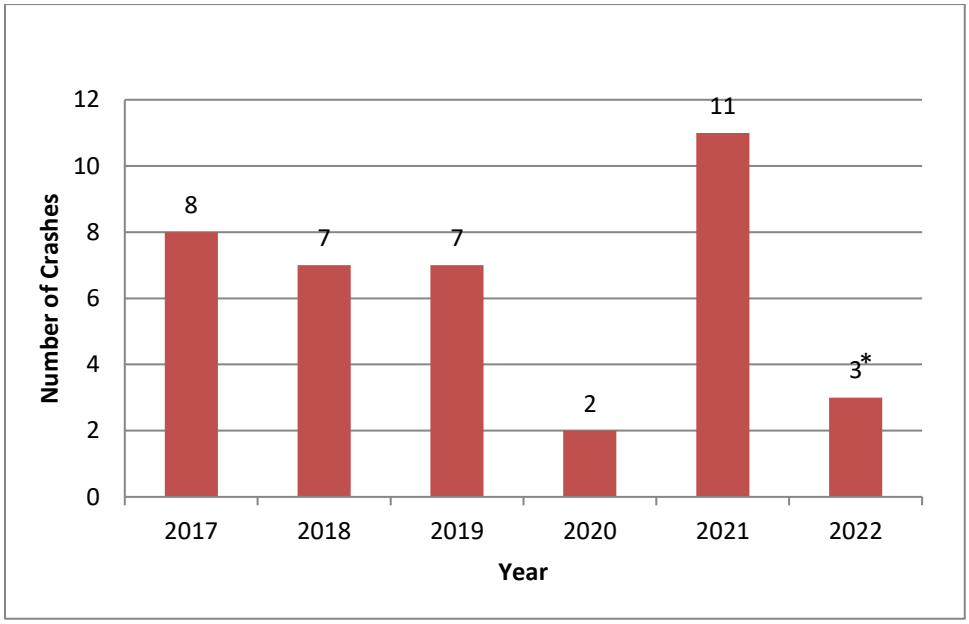


Figure 3-35. US 97/SW Glacier Avenue – SW Highland Avenue Annual Crashes
*2022 data is preliminary

The coordinated signal timing being pursued by ODOT could help address the rear-end crash patterns at this intersection. Other types of treatments that could be considered include near-side or supplemental pole-mounted signal displays (providing additional visibility, particularly around trucks and large vehicles), installing larger signal displays, or improving signal approach signage.

US 97 / SW Veterans Way Intersection

The US 97/SW Veterans Way had 59 crashes reported at this intersection over the five-year review period. Thirty of these crashes were recorded as injury crashes and 29 resulted in property damage only. This intersection is listed in ODOT's Safety Priority Index System for 2022 in the top 90th to 95th percentile of crash locations.

- A review of the number of crashes occurring at this intersection each year shows a peak in 2017 with 18 crashes and decreasing crashes in the ensuing years, with data from 2020 showing the lowest number of crashes with eight. The 2020 data was likely impacted by the reduced travel

during the COVID-19 pandemic. However, the number of crashes stayed relatively low in 2021 with ten crashes and preliminary data from 2022 shows a total of eight crashes. Figure 3-36 illustrates this historical trend.

- The majority (29) of crashes at this intersection were rear-end collisions of which 15 occurred in the northbound direction on US 97, 11 occurred in the southbound direction on US 97, and three occurred on Veterans Way.
- Twenty crashes were recorded as turning collisions. The majority (15) of these crashes involved northbound and southbound left-turn vehicles from US 97 and the opposing through movement on US 97. This is consistent with the volume patterns at this intersection.
- Four sideswipe collisions were reported at this intersection. No patterns were observed among the data. Two occurred in the northbound direction on US 97 and two occurred in the southbound direction. One possible injury was recorded with one of the crashes. No other injuries were reported.
- Four angle collisions were recorded at this intersection. One of these crashes resulted in a suspected serious injury (Injury A) and involved a southbound through vehicle and a westbound through vehicle. It occurred in the evening and was attributed to the westbound driver disregarding the traffic signal. No other angle collisions resulted in injury at this intersection.

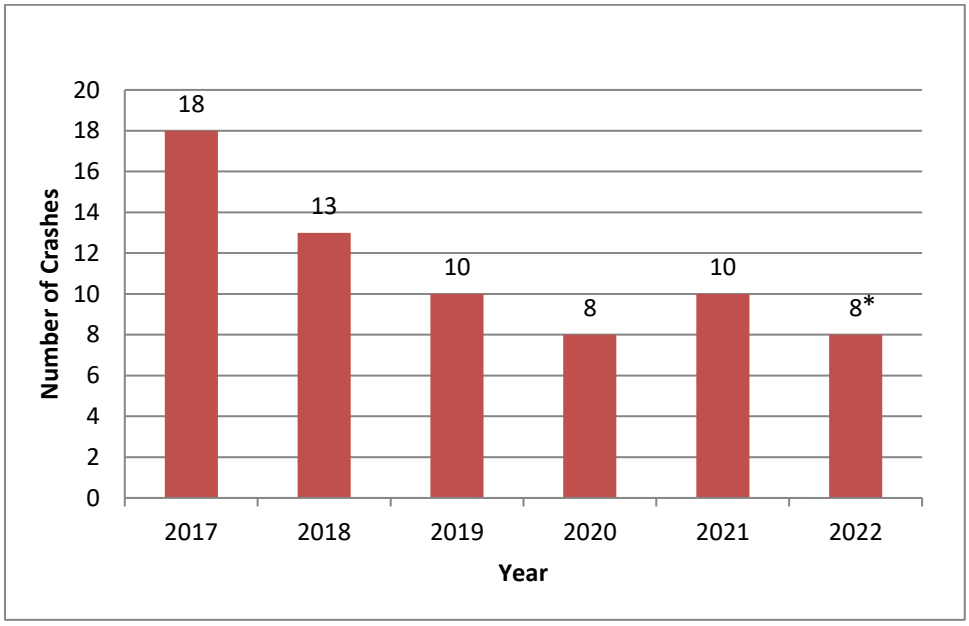


Figure 3-36. US 97/SW Veterans Way Annual Crashes
*2022 data is preliminary

As separately discussed within this report, this intersection was reviewed for safety and operations by ODOT as part of the South Redmond Corridor Plan. This plan acknowledges the difficulty in addressing congestion along the corridor due to the lack of railroad crossings between Yew Avenue and Veteran's Way and the physical intersection constraints, and in balancing safety and operational objectives has proposed conceptual modifications that prioritize access management along the US 97 corridor. The recommended modifications will further consolidate traffic at US 97/Veteran's Way, and the provisions for U-turns will require signal timing and phasing modifications that reduce highway throughput.

While "point" solutions may be limited, the development of the parallel 9th Street corridor provides mitigation for these safety issues, providing a parallel route that can avoid US 97. The City's investments

in the 9th Street corridor to support travel in eastern Redmond, and in the 27th and Helmholtz corridors to support off-highway travel in western Redmond, can help alleviate the highway demands and allow these planned improvements to better support through travel.

SW 19th Street / Airport Way Intersection

Two crashes were reported at the SW 19th Street/Airport Way intersection, one of which resulted in a fatality. Both crashes are described in more detail below.

- On January 13, 2018 at 11:00 p.m. there was a head-on collision between a westbound through vehicle and an eastbound through vehicle. The driver of the westbound vehicle, a 75-year-old man, crossed over the centerline resulting in a crash and his death. Both drivers were wearing seatbelts and drugs and alcohol were not a factor. The weather was clear at the time of the crash and the road surface was dry. The crash occurred approximately 90 feet west of the intersection within the horizontal curve on SW Airport Way.
- On July 13, 2018 at 2:00 p.m. a rear-end crash was reported approximately 155 feet south of the intersection on SW 19th Street. The crash occurred during daylight conditions on a clear day with dry pavement. The crash occurred in the southbound direction and was attributed to a vehicle "improperly stopped in traffic lane" and a second vehicle failing to avoid the first. The crash resulted in minor injury.

The planned reconstruction of this intersection to a roundabout with the City's Eastside Arterial will modify the current travel patterns at this intersection, and the lower speeds and channelization provided with a new roundabout will help maintain low crash severity.

Published Safety Studies

There are several published studies and information sources available that describe safety concerns and improvement projects within the area. Each of these items and their relevance to the project location is summarized below.

ODOT Safety Priority Index System

The ODOT Safety Priority Index System (SPIS) list was reviewed for the 2022 period (which is based on crashes between 2019 and 2021). This review showed that two of the study intersections are included in the 90th percentile or above on the SPIS list. These are the US 97/Evergreen Avenue and US 97/SW Veterans Way intersections, both of which are discussed in detail in the crash history. The completion of the parallel 9th Street eastside arterial directly addresses these safety issues, as identified and agreed to by the City of Redmond and ODOT as part of the original property rezone.

ODOT Safety Action Plan

ODOT's Transportation Safety Action Plan was updated in 2021 and reviewed crash data between 2014 and 2018 and provides Statewide policies and metrics, as well as reporting and prioritization metrics. The overall report has no information specific to crash trends or priority improvement needs within the study area.

County Transportation Safety Action Plan (TSAP)

The Deschutes County Transportation Safety Action Plan was last updated in September 2019 and provides information based on the crash experience from 2012 to 2016. This study performed a safety screening based on the SPIS system to score intersections based on Equivalent Property Damage Only (EPDO). Three of the study intersections are included in the top 10-percent of EPDO scores. These include the US 97/Evergreen Avenue, US 97/SW Highland Avenue, and US 97/SW Veterans Way intersections. All three of these intersections are discussed in the previous section based on the most recent crash information available.

Redmond Transportation System Plan

The City of Redmond Transportation System Plan provides an overall blueprint to support growth and development throughout the City, with an emphasis on safety, mobility, and accessibility. Within this plan there is often overlap between safety and mobility. Review of the projects showed that there are multiple intersection projects identified within the area, as listed below.

- Project I11 – Traffic signal or roundabout at NE 9th Street/NE Maple Avenue
- Project I15 – Traffic signal or roundabout at NE 9th Street/NE Hemlock Avenue
- Project I17 – Traffic signal or roundabout at NE 9th Street/E Antler Avenue (roundabout funded in CIP)
- Project I18 – Safety improvement at US 97/Evergreen Avenue
- Project I19 – Access management improvement at Lake Road/OR 126
- Project I28 – Safety improvement at US 97/SW Highland Avenue
- Project I29 – Traffic signal or roundabout at SE 9th Street/OR 126 (roundabout funded in CIP)
- Project I36 – Traffic signal or roundabout at SE Veterans Way/OR 126
- Project I32 – City to pursue alternative mobility standard at US 97/SW Veterans Way
- Project I45 – Traffic signal or roundabout at SW 19th Street/Airport Way

Two of these, Projects I18 and I28, are identified specifically as safety improvements. However, no specific information or details are provided.

There were no other plans or studies identified that included safety projects within the study area.

Intersection Sight Distance

The site is proposed to connect to the existing street network at two new street connections to E Antler Avenue, one new street connection to SE 9th Street, and one new street connection to OR 126. These street connections are consistent with the City's Eastside Framework Plan for the area. Sight distance information and requirements are based on the standard reference *A Policy on Geometric Design of Highways and Streets, 7th 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.

Figure 3-37 illustrates the recommended intersection sight distance measurements at future street connections to E Antler Avenue based on a posted speed of 25 mph and level terrain. As the street is currently a partially improved surface, and the specific access points will be determined as part of future site plan applications, specific intersection sight distance measurements were not provided. Field review noted that the straight with slight elevation increase toward the east, but with site regrading will provide flexibility to situate these street and/or access locations throughout most of the frontage (see Figures 3-38 and 3-39).

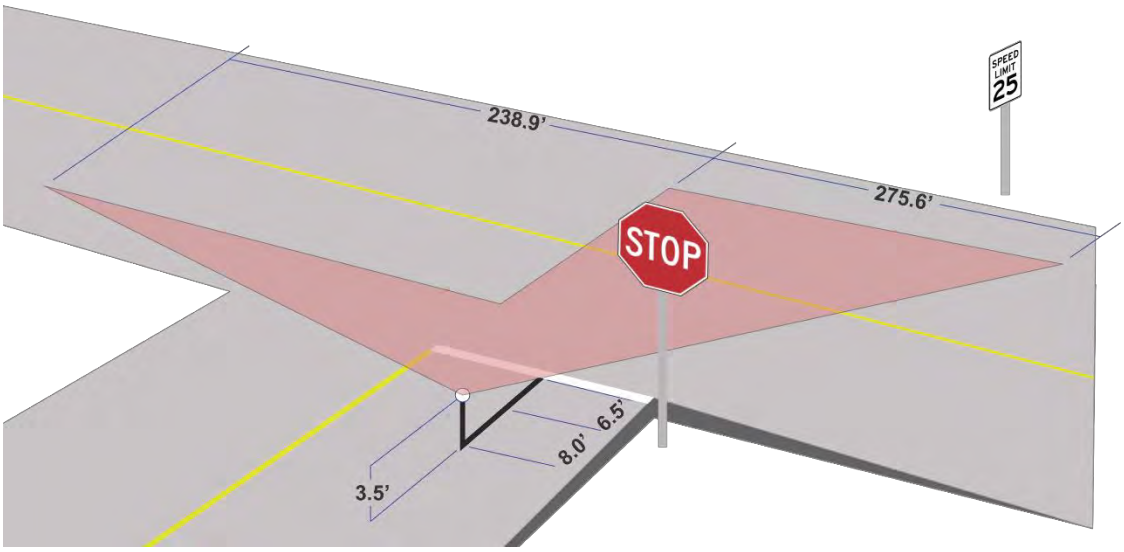


Figure 3-37. Recommended Intersection Sight Distance Dimensions on E Antler Avenue.



Figure 3-38. Existing view along E Antler Avenue facing west toward NE 11th Street.



Figure 3-39. E Antler Avenue facing east.

Additional field review of sight lines (or inclusion of sight lines within civil plans) will be provided as part of future site plan applications when more specific information is known, and once initial grading and improvement plans have been developed. The project frontage will be substantially modified with the City's 9th Street Eastside Arterial Project, construction of Antler Avenue, and the multiuse pathway along OR 126.

11. WALKING, BIKING AND TRANSIT

The City's Development Code indicates that a project is considered to have a "significant impact" if it does the following:

i. Fail to provide accessible and safe pedestrian and bike connections (i.e., accessible landings at corners, pedestrian refuge island where appropriate, striping and/or signage) to schools, adjacent residential areas, transit facilities, adjacent streets and to existing or planned neighborhood activity centers; or

ii. The project disrupts existing or planned biking or walking facilities or conflicts with the adopted TSP facility maps; or

iii. The project otherwise conflicts with the City's designated Quiet Streets as identified in the TSP.

The site provides the following connections:

- Area Schools: The site is located within the school attendance boundaries of Tom McCall Elementary School, M.A. Lynch Elementary School, Elton Gregory Middle School, and Redmond High School. All schools are located over 1.5 miles away from the site and will require transportation by bus or private vehicle.
- Residential Areas: The proposed commercial portion of the site may generate trips to nearby residential areas. There's a small pocket of residential homes between E Antler Avenue and SE Evergreen Avenue west of the site. No sidewalks are available on the local streets serving the homes or on E Antler Avenue until SE 9th Street, at which point sidewalks will be provided on both E Antler Avenue and SE 9th Street as part of frontage improvements. All other residential neighborhoods are located more than a mile from the site.
- Transit Facilities: There are no transit facilities within walking distance of the site. Transit service is provided at the Redmond Transit Center, which is located approximately 1.5 miles from the site.
- Adjacent Streets: With completion of the City's Eastside Arterial project, 9th Street will have a complete sidewalk system and striped bicycle lanes from NE Hemlock Avenue to SW Veterans Way. E Antler Avenue currently has no sidewalks or bicycle lanes with the exception of a short segment of sidewalk adjacent to the plumbing supply store on the north side of E Antler Avenue east of NE 9th Street. Site frontage improvements along E Antler Avenue will provide pedestrian and bicycle access for future connection and extension, but few users are expected until there are additional facilities.
- Neighborhood Activity Centers: The site is located in an industrial area on the eastern edge of the City with few local neighborhood activity centers. Downtown Redmond with its commercial, dining, and retail opportunities will be the primary draw for the site. However, with a distance of over a half mile from the site, pedestrian trips may be minimal. With limited crossing opportunities of US 97, the primary route between the site and downtown will be from SE 9th Street, to SE Evergreen Avenue, to OR 126 continuing to downtown. SE 9th Street will be completely improved through the combination of the funded CIP project and the REG frontage improvements. SE Evergreen Avenue between OR 126 and SE 9th Street is unimproved with gravel shoulders for most of its length, and no sidewalks. A combination of gravel shoulders and bicycle lanes is available on OR 126 between SE Evergreen Avenue and SE Franklin Avenue, at which point sidewalks are provided. At the US 97/Evergreen Avenue intersection marked crosswalks, ramps, and pedestrian signal heads are provided at the traffic signal. On the west side of US 97, complete pedestrian facilities into the downtown area.

Overall, there are limited pedestrian and bicyclist facilities in the area surrounding the site. As new developments are being built, the surrounding streets are being upgraded to urban standards with sidewalks and bicycle lanes, where appropriate. With the east side of the City being mostly industrial, commercial and residential trips from the site will mostly be by vehicle to access schools, residential areas, and neighborhood activity centers since there are few amenities close to the site.

The project is consistent with the proposed bicycle plan and priority pedestrian routes in the TSP. In addition, no Quiet Streets are planned within the vicinity of the site.

12. PROPORTIONATE SHARE CONTRIBUTION

The City of Redmond requires that all developments that submit a Transportation Impact Analysis be required to contribute a proportionate share cost of the final transportation system improvements that will result from the cumulative impacts that various projects have on identified pro-rata intersections.

These locations are established by the City and exclude locations already within the City's CIP, ODOT STIP, SDC methodology, or other approved or committed funding plans.

The following locations were identified as deficient within this long-range analysis, and may therefore be subject either to project-specific mitigation or potentially a pro-rata fee:

- NE 9th Street/NE Maple Avenue: This intersection has been identified as a single-lane roundabout but is not included within the City of Redmond's Draft Transportation SDC list. A pro-rata contribution is recommended, based on the following:
    - Existing Trips: 630 (see Figure 3-9)
    - Added Trips: 269 PM Trips (see Figure 3-6)
    - Total 2040 Trips: 1,506 (see Figure 3-12)
    - Project Cost: $3.2m (TSP Project I11, pp51)
    - Pro Rata = (Added Trips) ÷ (Future 2040 Trips – Existing PM Trips) × Project Cost
    - Pro Rata = ((269 PM) ÷ (1,506 – 630)) × $3.2M
    - Pro Rata = $982,648.40 ($731.14 per PM trip based on 1,344 total trips)

  It is recommended that project costs be revised pending cost estimate information from the Eastside Arterial. Planning costs provided within the TSP seem overly conservative relative to recent roundabout construction costs, that have been within the $2.0M to $2.5M range. This revision would reduce these pro-rata fees by over $200,000 ($571.20 per PM trip).
- NE 9th Street/NE Hemlock Avenue: This intersection is identified within the City's Transportation System Plan as Project I15: Consider Traffic Signal or Roundabout, Signal Preferred", and includes a cost of $500,000. With the City pursuing roundabouts throughout this corridor the preference is expected to also include a single-lane roundabout. The project is included within the City's SDC list so pro-rata fees are not required.
- NE 9th Street/E Antler Avenue: TSP Project I17 states "Consider Traffic Signal or Roundabout, Signal Preferred." The REG is coordinating with the City of Redmond to construct this roundabout, which is also included as an SDC creditable project. No pro-rata fees will be required.
- SE 9th Street/Evergreen Avenue: As a local street intersection the City's Transportation System Plan does not address this location. The REG has proposed reconstruction as a roundabout to support access into the commercial lands.
- US 97/Evergreen Avenue: The City's TSP lists improvements at this intersection as Project I18 (Safety Improvement) but no additional details are provided. The technical memoranda that support the final TSP identify operations at this intersection as deficient (year 2040 v/c ratio of 1.11 with 95th percentile highway queues exceeding 1,000 feet), noting that alternative mobility standards have been adopted to accept this higher level of congestion (identified within 2012 Senate Bill 1544 and Intergovernmental Agreement #28621). However, it does not appear that these were formally adopted by the Oregon Transportation Commission as agreed, and the standards outlined were not developed to support 2040 conditions. As noted, the TSP was developed with low-growth assumptions within the REG properties assuming that only about 20% of the industrial lands would be developed by 2040, whereas this analysis accounts for full development of these urban lands. Broader planning is recommended to address the east-west connectivity deficiencies on the US 97 corridor between Evergreen Avenue and Maple Avenue. Pro-rata fees will not be required as no mitigation is identified.
- Lake Road/OR 126: The City's TSP recommends the future restriction of this intersection to right-in, right-out as project I19 ("Consider Access Management"), with a cost of $100,000. There are on-going discussions as part of a separate private development application to construct this project.

- OR 126/SE 9th Street: This intersection contains a City-funded improvement (single-lane roundabout) as part of a design-build project. No additional improvements will be required, and information on the REG project was provided to the design team for incorporation into the intersection plans.
- OR 126/Veterans Way: The modification of this intersection will be required when access is provided at this highway/Collector intersection. This project is SDC creditable so pro-rata fees will not be required.
- US 97/SW Glacier Avenue – SW Highland Avenue operates under its carrying capacity but beyond ODOT's mobility target in 2040. ODOT has adopted alternative mobility targets along US 97 between Yew Avenue and Veteran's Way, and there is an established need and agreement to adopt similar measures at the US 97/Evergreen Avenue intersection. It is recommended that these policy changes also capture the needs at the US 97/Glacier – Highland intersection.
- US 97/Veteran's Way has been identified as deficient within the City's TSP and the South Redmond Corridor Plan. Alternative mobility standards were approved by the OTC, but even with these the future travel projections show continued long-term operational (and safety) needs. Until a plan identifying feasible mitigation measures is adopted and cost estimates can be obtained, no pro-rata contributions should be required.
- The Airport Way/Veteran's Way intersection is fully funded for improvements as part of the City's planned eastside arterial project. No additional contributions are required.
- Conditions at the US 97/Yew Avenue Northbound Ramp were reviewed as part of the US 97: South Redmond Corridor Plan. This plan recommended adoption of alternative mobility targets in lieu of capacity improvements, which was completed in 2021.
- SW Airport Way/SW 19th Street is identified as a future single-lane roundabout within the City's TSP, which is included in the City's SDC methodology. The City is developing plans to increase employment assumptions within the DSL LLI property beyond those accounted for within the adopted TSP. If pursued, additional mitigation may be required of the site for TPR compliance. No additional mitigation should be imposed on REG.

ROADWAY CROSS-SECTIONS

The proposed Redmond East Gateway development has frontage along both SE 9th Street, a *Minor Arterial*, and Antler Avenue, a *Major Collector*. In addition, the development includes the building of SE 17th Street, a *Major Collector*, along the east edge of the site with a connection to OR 126 consistent with the City's Transportation System Plan. All three roadways are intended to support higher levels of mobility within the City.

The Eastside Arterial Project will improve SE 9th Street from its existing two-lane section between Hemlock Avenue and OR 126 to a *Minor Arterial* standard in the City's Five-Year Capital Improvement Plan and will extend SE 9th Street from Veterans Way to OR 126. The project is currently in the design phase with construction planned for 2024/2027 with a total budget of $34.4 million. The proposed cross-section for SE 9th Street is shown in Figure 3-40.

The existing right-of-way along the site frontage is 70 feet. While typically a *Minor Arterial* road has a right-of-way of 100 feet, it is our understanding the City will be maintaining an 80-foot wide right-of-way along SE 9th Street. As a result, no additional right-of-way will be required. The City's standard 100-foot ROW design is provided in Figure 3-41.

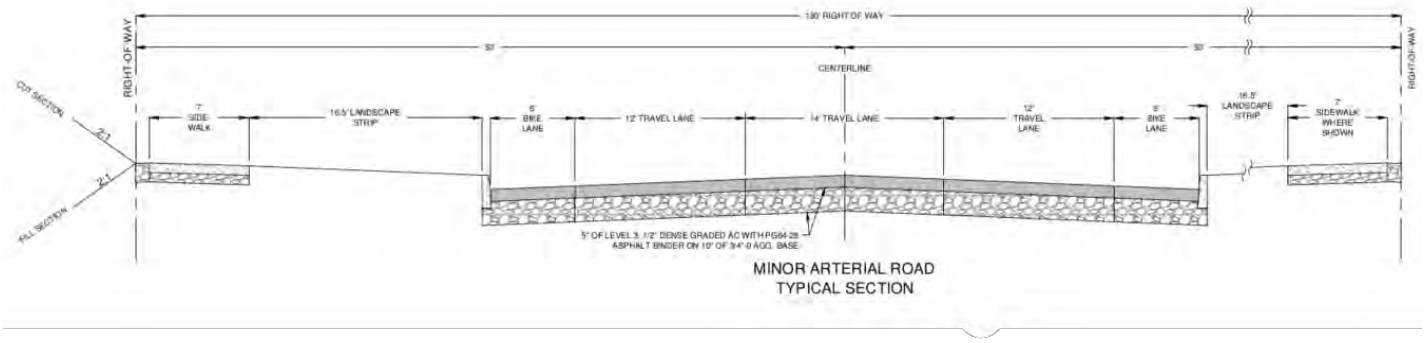


Figure 3-40. City of Redmond Typical *Minor Arterial* Cross-Section

Antler Avenue is unimproved with a narrow, paved section along the site frontage. The City's Transportation System Plan includes a project (S19) to improve Antler Road to *Major Collector* standards from NE 11th Street east to the future NE 17th Street. Project S19 is estimated to cost $2,068,500.

The existing Antler Avenue right-of-way along the site is 60 feet. The standard right-of-way width for *Major Collectors* in the City of Redmond is 80 feet, which would typically require right-of-way dedication to achieve a 40-foot half width. Our understanding from previous discussions with staff regarding the adjacent Wild Mike's Pizza Production Facility, is that this ROW dedication was required between 9th Street and 11th Street.

The construction of NE/SE 17th Street to Collector standards is also included as a TSP project (S17) from OR 126 to NE Kingwood Avenue. The approximately 1.7 mile long project is estimated to cost $9.3 million. Approximately 0.9 miles of this project will be built with the Redmond East Gateway development from E Antler Drive to OR 126.

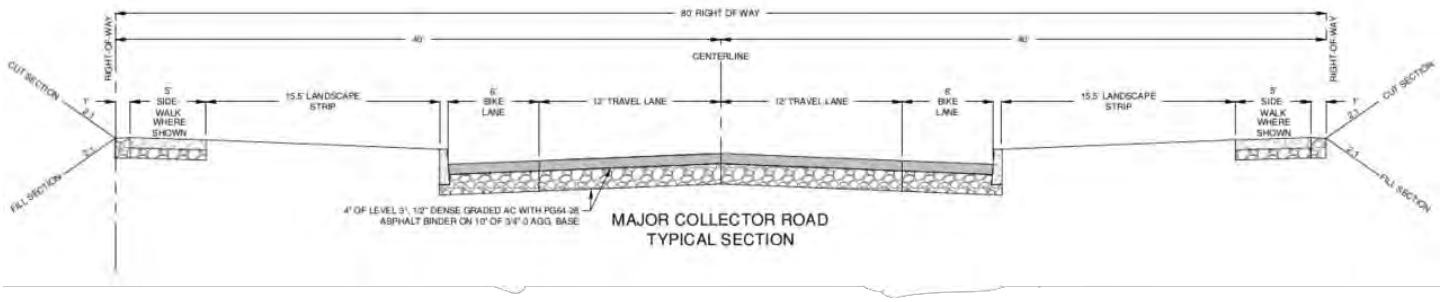


Figure 3-41. *Major Collector* Cross-Section.

Within the site, local roads will be built to city standards with on-street parking and property tight sidewalks, as shown in Figure 3-42.

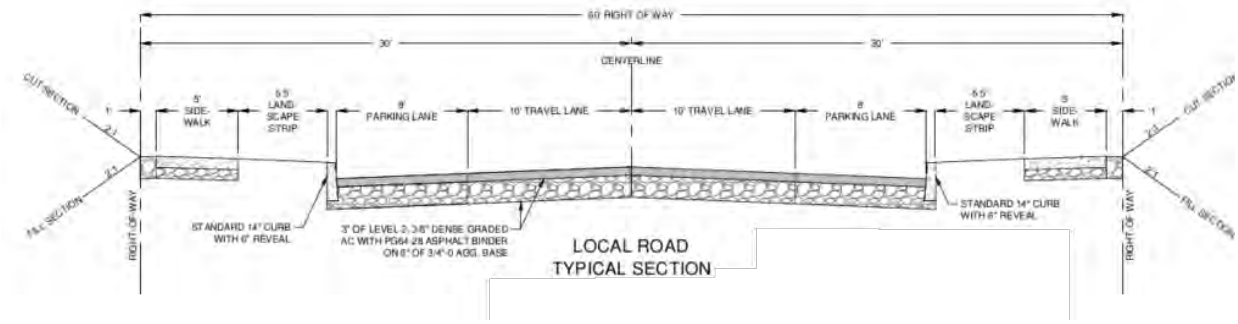


Figure 3-42. *Local Road* Cross-Section.

Local industrial roads are planned to have 12-foot travel lanes and on-street parking with curb tight sidewalks, as shown in Figure 3-43.

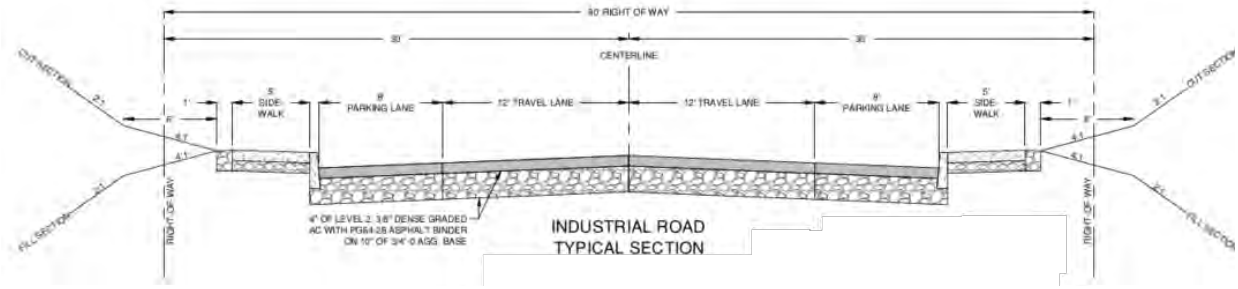


Figure 3-43. Local Industrial Road Cross-Section

SECTION 4. SUMMARY OF FINDINGS AND RECOMMENDATIONS

The Transportation Impact Analysis prepared for the proposed REG Master Plan identifies the long-range planning needs to support the REG project and serve additional lands throughout the east side of Redmond through the year 2040 planning horizon.

The approximately 200-acre site is currently zoned for *Light Industrial* (M1) and *Limited Service Commercial* (C4A) uses. The proposed master plan modifies the current zoning to accommodate 50.7 gross acres of *Limited Service Commercial* (C4A), 85.8 gross acres of *Light Industrial* (M1), and 68.1 gross acres of *Heavy Industrial* (M2) zoning, with this zoning remaining compliant with the Transportation Planning Rule as it creates less potential impacts than the current zoning.

Based on some common densities for industrial parks, shopping plaza, and multifamily (low-rise) housing, the site is conservatively estimated to generate nearly 15,550 net new daily trips of which 1,344 will occur during the weekday p.m. peak hour. This planning value could vary slightly depending on the specific site tenants and the intensity of operations. The system provides flexibility to accommodate some deviation to these estimates.

The analysis of the major intersections surrounding the site showed that all study intersections currently meet City and ODOT standards with the exception of the US 97/Evergreen Avenue intersection, which exceeds ODOT mobility targets today.

The 2040 analysis showed that many of the study intersections are expected to exceed standards in 2040 with (or without) full buildout of the site. In addition, multiple intersections will meet signal warrants and/or warrant left- or right-turn lanes, and six intersections currently have a crash rate exceeding ODOT's 90th percentile rate for similar intersections (or are included in ODOT's Safety Priority Index System report). Table 4-1 summarizes the results of the traffic analysis and highlights those intersections with a significant impact.

Table 4-1. Intersection Analysis Summary

Intersection	Acceptable 2040 Operations With Site?	Signal Warrants Met?	Left-Turn Lane Warrant Met?	Right-Turn Lane Warrant Met?	Exceeds ODOT's 90th % Crash Rate or Included on ODOT's SPIS
1: NE 9th St / NE Maple Ave	No	Yes *Warrants 1, 2, and 3 Met*	Yes *Westbound*	n/a	Yes
2: US 97 / NE Hemlock Ave	Yes	n/a	n/a	n/a	No
3: NE 9th St / NE Hemlock Ave	Yes	Yes *Warrants 1, 2, and 3 Met*	n/a	n/a	No
4: US 97 / Antler Ave	Yes	n/a	n/a	n/a	No
5: NE 9th St / E Antler Ave	No	Yes *Warrants 1, 2, and 3 Met*	Yes *Northbound & Southbound*	Yes *Northbound*	Yes
6: SE 15th St / Antler Ave	Yes	No	No	No	No
7: SE 17th St / Antler Ave	Yes	No	No	No	No
8: SE 9th St / Evergreen Ave	No	Yes *Warrants 1, 2, and 3 Met*	Yes *Southbound*	Yes *Northbound & Southbound*	No
9: US 97 / Evergreen Ave	No	n/a	n/a	n/a	Yes
10: Lake Rd / OR 126	No	No	Yes *Westbound*	Yes *Eastbound*	No
11: SE 9th St / OR 126	No	n/a	n/a	n/a	No
12: Veterans Way / OR 126	No	Yes *Warrants 1, 2, and 3 Met*	n/a	Yes *Westbound*	Yes
13: US 97 / SW Glacier Ave - SW Highland Ave	No	n/a	n/a	n/a	Yes
14: US 97 / SW Veterans Way	No	n/a	n/a	n/a	Yes
15: Airport Way / SW Veterans Way	No	n/a	n/a	n/a	No
16: US 97 SB Ramp / Yew Ave	Yes	n/a	n/a	n/a	No
17: US 97 NB Ramp / Airport Way	No	n/a	n/a	n/a	No
18: SW 19th St / Airport Way	No	Yes *Warrants 1, 2, and 3 Met*	n/a	Yes *Eastbound*	No

Most of these intersections that require improvements have previously been identified for improvements in the TSP and were previously addressed in the SB 1544 study. Consistent with previous studies, this analysis highlights the longer-term need for additional east-west connectivity, and the more immediate

need for improvements to the eastside arterial to support and enhance its mobility and connectivity extents. A summary of the mitigations and timing of improvements is included in Table 4-2.

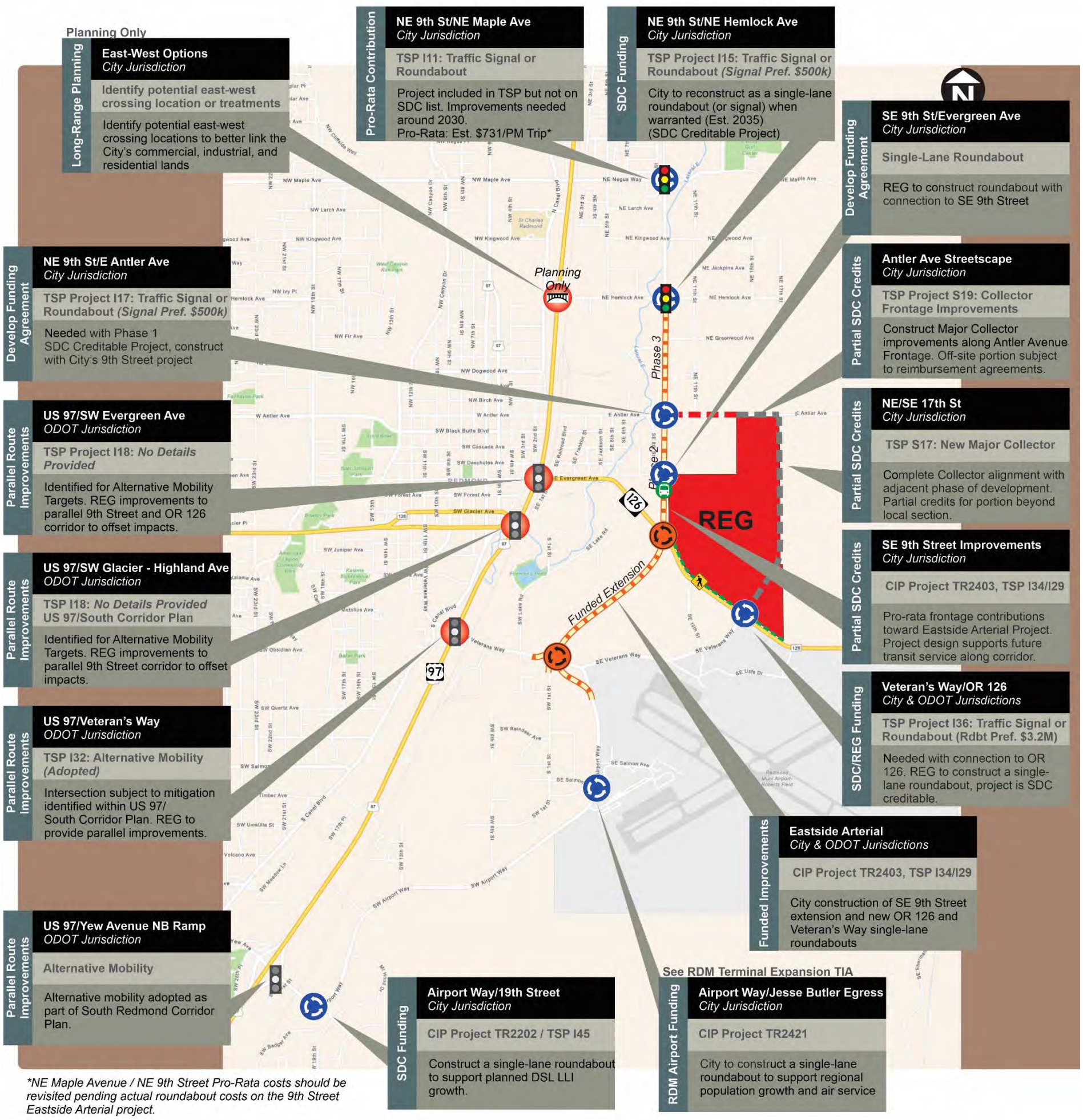
Table 4-2. Intersection Improvement Summary

Intersection	Mitigation	Timing (Year & PM Peak Hour Trips)*	Mitigation Notes
1: NE 9th St / NE Maple Ave	Traffic signal or roundabout (TSP)	2029 +420 trips	Establish a Pro-Rata Fee as Mitigation, with pro-rata fees paid on a per-phase basis.
2: US 97 / NE Hemlock Ave			
3: NE 9th St / NE Hemlock Ave	Traffic signal or roundabout (signal preferred, TSP)	2034 +840 trips	Lower priority than the Antler improvements as most travel is through trips and AWSC is present. Project included in City SDC list.
4: US 97 / Antler Ave			
5: NE 9th St / E Antler Ave	Traffic signal or roundabout (signal preferred, TSP)	Phase 1 (with EAP)	REG to support inclusion of roundabout within Eastside Arterial project. Project is SDC creditable.
6: SE 15th St / Antler Ave			
7: SE 17th St / Antler Ave			
8: SE 9th St / Evergreen Ave	Traffic signal or roundabout (with REG connection)	With 9th Street Connection (or EAP)	REG to fund a roundabout with connection to SE 9th Street. Project will allow City to avoid constructing a three-lane section.
9: US 97 / Evergreen Ave	None recommended as part of project	-	Systemwide issue; mitigation provided through 9th Street extension. Development of parallel 9th Street route to provide mitigation.
10: Lake Rd / OR 126	Access management (TSP)	Not Recommended	City plans to restrict intersection to LI-RIRO as part of a separate private development application.
11: SE 9th St / OR 126			City funded improvement as part of Eastside Arterial project.
12: Veterans Way / OR 126	Traffic signal or roundabout (TSP)	With new OR 126 Connection	Roundabout to be constructed with new connection to REG. Project is SDC creditable; recommend supplemental consideration of available State funding options to bridge funding gaps.
13: US 97 / SW Glacier Ave - SW Highland Ave	None recommended as part of project	-	Eastside Arterial route to reduce highway reliance.
14: US 97 / SW Veterans Way	None recommended as part of project	-	Eastside Arterial route to reduce highway reliance.
15: Airport Way / SW Veterans Way	None recommended as part of project	-	Reconstruction planned and funded as part of Eastside Arterial project.
16: US 97 SB Ramp / Yew Ave			
17: US 97 NB Ramp / Airport Way	None recommended as part of project	-	Addressed with US 97 South Corridor Plan and alternative mobility standard
18: SW 19th St / Airport Way	None recommended as part of project	-	Single-lane roundabout funded within SDC methodology supports REG.

*Trips refers to the net new p.m. peak hour trips from the REG development

In addition to these improvements, the project team is working with the City and ODOT to complete the multiuse pathway along the north side of the OR 126 corridor as part of an initial development phase, providing a walking and cycling connection to the CORE3 and Oasis Village projects. Frontage improvements will also be provided along Antler Avenue as initial development occurs. The planned 17th Street Collector will be built bisecting the site along the SE Veteran's Way alignment (with a new roundabout constructed on OR 126 when the connection is made) as identified within the City's TSP, providing access to additional lands beyond the REG. Figure 4-1 illustrates these overall transportation improvements.

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.



**NE Maple Avenue / NE 9th Street Pro-Rata costs should be revisited pending actual roundabout costs on the 9th Street Eastside Arterial project.*

Figure 4-1. Summary of Mitigation Needs to Support REG.

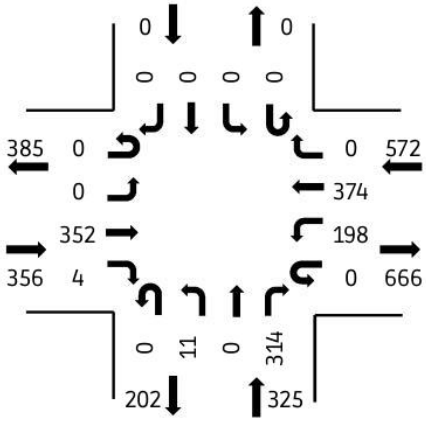
SECTION 5. TECHNICAL APPENDICES

This section contains technical appendices for the REG assessment. As this report includes numerous sensitivity analyses, additional technical documentation can be made available upon request.

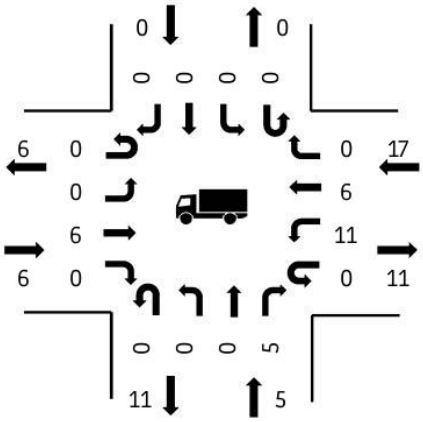
APPENDIX 1: TRAFFIC COUNT WORKSHEETS

Location: SW Veterans Way & OR 126
Date: 2024-04-09
Peak Hour Start: 04:20 PM
Peak 15 Minute Start: 05:00 PM
Peak Hour Factor: 0.95

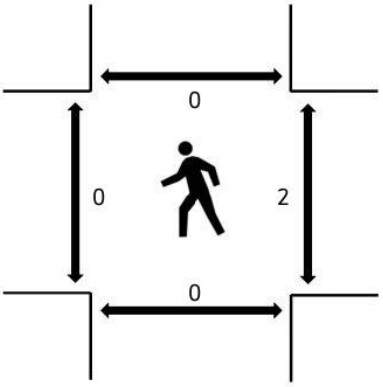
Motorized Vehicles



Heavy Vehicles



Pedestrians



(peak hour)

All Vehicle Volumes

Time	NB (SW Veterans Way)					SB (SW Veterans Way)					EB (OR 126)					WB (OR 126)					Totals	
Time	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	15min	1hr
04:00:00 PM	0	0	32	0	0	0	0	0	0	0	0	35	1	0	0	21	33	0	0	0		
04:05:00 PM	1	0	32	0	0	0	0	0	0	0	0	32	1	0	0	14	27	0	0	0		
04:10:00 PM	0	0	29	0	0	0	0	0	0	0	0	26	1	0	0	14	21	0	0	0	320	
04:15:00 PM	0	0	17	0	0	0	0	0	0	0	0	28	0	0	0	13	27	0	0	0	283	
04:20:00 PM	0	0	24	0	0	0	0	0	0	0	0	27	0	0	0	20	38	0	0	0	285	
04:25:00 PM	1	0	33	0	0	0	0	0	0	0	0	29	0	0	0	14	35	0	0	0	306	
04:30:00 PM	1	0	25	0	0	0	0	0	0	0	0	30	1	0	0	17	26	0	0	0	321	
04:35:00 PM	0	0	19	0	0	0	0	0	0	0	0	32	1	0	0	14	23	0	0	0	301	
04:40:00 PM	3	0	28	0	0	0	0	0	0	0	0	29	0	0	0	14	28	0	0	0	291	
04:45:00 PM	0	0	21	0	0	0	0	0	0	0	0	29	1	0	0	16	45	0	0	0	303	
04:50:00 PM	1	0	29	0	0	0	0	0	0	0	0	33	0	0	0	12	25	0	0	0	314	
04:55:00 PM	1	0	24	0	0	0	0	0	0	0	0	27	0	0	0	27	27	0	0	0	318	1235
05:00:00 PM	0	0	20	0	0	0	0	0	0	0	0	28	0	0	0	15	32	0	0	0	301	1208
05:05:00 PM	0	0	32	0	0	0	0	0	0	0	0	27	0	0	0	18	38	0	0	0	316	1216
05:10:00 PM	1	0	26	0	0	0	0	0	0	0	0	41	1	0	0	18	32	0	0	0	329	1244
05:15:00 PM	3	0	33	0	0	0	0	0	0	0	0	20	0	0	0	13	25	0	0	0	328	1253
05:20:00 PM	0	0	31	0	0	0	0	0	0	0	0	30	0	0	0	11	30	0	0	0	315	1246
05:25:00 PM	2	0	23	0	0	0	0	0	0	0	0	30	0	0	0	19	29	0	0	0	299	1237
05:30:00 PM	0	0	24	0	0	0	0	0	0	0	0	27	1	0	0	17	23	0	0	0	297	1229
05:35:00 PM	1	0	26	0	0	0	0	0	0	0	0	18	2	0	0	7	13	0	0	0	262	1207
05:40:00 PM	0	0	19	0	0	0	0	0	0	0	0	25	1	0	0	6	28	0	0	0	238	1184
05:45:00 PM	0	0	19	0	0	0	0	0	0	0	0	27	0	0	0	8	10	0	0	0	210	1136
05:50:00 PM	1	0	13	0	0	0	0	0	0	0	0	20	0	0	0	17	22	0	0	0	216	1109
05:55:00 PM	1	0	21	0	0	0	0	0	0	0	0	21	0	0	0	6	18	0	0	0	204	1070

Car Volumes

Time	NB (SW Veterans Way)					SB (SW Veterans Way)					EB (OR 126)					WB (OR 126)					Totals	
Time	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	15min	1hr
04:00:00 PM	0	0	27	0	0	0	0	0	0	0	0	35	1	0	0	20	31	0	0	0		
04:05:00 PM	1	0	31	0	0	0	0	0	0	0	0	32	1	0	0	13	26	0	0	0		
04:10:00 PM	0	0	26	0	0	0	0	0	0	0	0	25	1	0	0	12	20	0	0	0	302	
04:15:00 PM	0	0	16	0	0	0	0	0	0	0	0	28	0	0	0	12	26	0	0	0	270	
04:20:00 PM	0	0	24	0	0	0	0	0	0	0	0	26	0	0	0	20	37	0	0	0	273	
04:25:00 PM	1	0	31	0	0	0	0	0	0	0	0	29	0	0	0	14	33	0	0	0	297	
04:30:00 PM	1	0	25	0	0	0	0	0	0	0	0	29	1	0	0	16	25	0	0	0	312	
04:35:00 PM	0	0	19	0	0	0	0	0	0	0	0	30	1	0	0	14	22	0	0	0	291	
04:40:00 PM	3	0	26	0	0	0	0	0	0	0	0	29	0	0	0	11	28	0	0	0	280	
04:45:00 PM	0	0	21	0	0	0	0	0	0	0	0	29	1	0	0	16	45	0	0	0	295	
04:50:00 PM	1	0	29	0	0	0	0	0	0	0	0	33	0	0	0	12	25	0	0	0	309	
04:55:00 PM	1	0	24	0	0	0	0	0	0	0	0	27	0	0	0	25	27	0	0	0	316	1195
05:00:00 PM	0	0	20	0	0	0	0	0	0	0	0	27	0	0	0	15	32	0	0	0	298	1175
05:05:00 PM	0	0	32	0	0	0	0	0	0	0	0	27	0	0	0	14	38	0	0	0	309	1182
05:10:00 PM	1	0	26	0	0	0	0	0	0	0	0	41	1	0	0	17	31	0	0	0	322	1215
05:15:00 PM	3	0	32	0	0	0	0	0	0	0	0	19	0	0	0	13	25	0	0	0	320	1225
05:20:00 PM	0	0	31	0	0	0	0	0	0	0	0	28	0	0	0	11	28	0	0	0	307	1216
05:25:00 PM	2	0	21	0	0	0	0	0	0	0	0	30	0	0	0	17	28	0	0	0	288	1206
05:30:00 PM	0	0	24	0	0	0	0	0	0	0	0	27	1	0	0	16	23	0	0	0	287	1200
05:35:00 PM	1	0	26	0	0	0	0	0	0	0	0	17	2	0	0	7	13	0	0	0	255	1180
05:40:00 PM	0	0	19	0	0	0	0	0	0	0	0	24	1	0	0	6	28	0	0	0	235	1161
05:45:00 PM	0	0	19	0	0	0	0	0	0	0	0	26	0	0	0	8	10	0	0	0	207	1112
05:50:00 PM	1	0	12	0	0	0	0	0	0	0	0	20	0	0	0	16	22	0	0	0	212	1083
05:55:00 PM	1	0	21	0	0	0	0	0	0	0	0	20	0	0	0	5	18	0	0	0	199	1044

Truck Volumes

Time	NB (SW Veterans Way)					SB (SW Veterans Way)					EB (OR 126)					WB (OR 126)					Totals	
Time	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	15min	1hr
04:00:00 PM	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0		
04:05:00 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0		
04:10:00 PM	0	0	3	0	0	0	0	0	0	0	0	1	0	0	0	2	1	0	0	0	18	
04:15:00 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	13	
04:20:00 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	12	
04:25:00 PM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	9	
04:30:00 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	9	
04:35:00 PM	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	1	0	0	0	10	
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04:45:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	
04:50:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	
04:55:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	40
05:00:00 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	3	33
05:05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	7	34
05:10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	7	29
05:15:00 PM	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	8	28
05:20:00 PM	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	0	0	0	8	30
05:25:00 PM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	11	31
05:30:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	10	29
05:35:00 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	7	27
05:40:00 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	3	23
05:45:00 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	3	24
05:50:00 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	4	26
05:55:00 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	5	26

Bike Volumes

Time	NB (SW Veterans Way)					SB (SW Veterans Way)					EB (OR 126)					WB (OR 126)					Totals	
Time	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	15min	1hr
04:00:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
04:05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
04:10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
04:15:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
04:20:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
04:25:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
04:30:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
04:35:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
04:40:00 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	
04:45:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
04:50:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
04:55:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:00:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:15:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:20:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:25:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:30:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:35:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:40:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:50:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:55:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

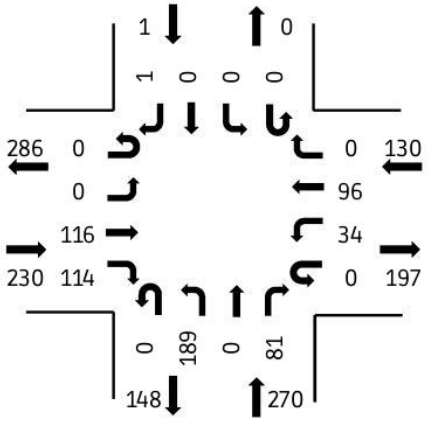
Pedestrian Volumes

Time	Pedestrians				Totals	
Time	NB	SB	EB	WB	15min	1hr
04:00:00 PM	0	0	0	0		
04:05:00 PM	0	0	0	0		
04:10:00 PM	0	0	0	0	0	
04:15:00 PM	0	0	0	0	0	
04:20:00 PM	0	0	0	0	0	
04:25:00 PM	0	0	0	0	0	
04:30:00 PM	0	0	0	0	0	
04:35:00 PM	0	0	0	0	0	
04:40:00 PM	0	0	0	0	0	
04:45:00 PM	0	0	0	0	0	
04:50:00 PM	0	0	0	0	0	
04:55:00 PM	0	0	0	0	0	0
05:00:00 PM	0	0	0	2	2	2
05:05:00 PM	0	0	0	0	2	2
05:10:00 PM	0	0	0	0	2	2
05:15:00 PM	0	0	0	0	0	2
05:20:00 PM	0	0	0	0	0	2
05:25:00 PM	0	0	0	0	0	2
05:30:00 PM	0	0	0	0	0	2
05:35:00 PM	0	0	0	0	0	2
05:40:00 PM	0	0	0	0	0	2
05:45:00 PM	0	0	0	0	0	2
05:50:00 PM	0	0	0	0	0	2
05:55:00 PM	0	0	0	0	0	2

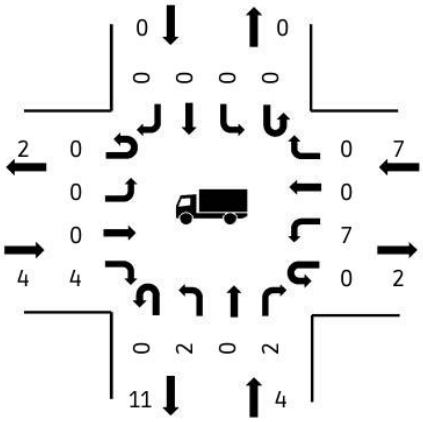
RallyTraffic

Location: NE 9th St & NE Maple Way
Date: 2024-04-09
Peak Hour Start: 04:20 PM
Peak 15 Minute Start: 04:55 PM
Peak Hour Factor: 0.83

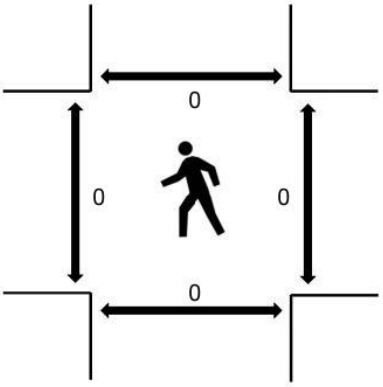
Motorized Vehicles



Heavy Vehicles



Pedestrians



(peak hour)

All Vehicle Volumes

Time	NB (NE 9th St)					SB (NE 9th St)					EB (NE Maple Way)					WB (NE Maple Way)					Totals	
Time	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	15min	1hr
04:00:00 PM	13	0	5	0	0	0	0	0	0	0	0	8	11	0	0	3	2	0	0	0		
04:05:00 PM	12	0	4	0	0	0	0	0	0	0	0	12	6	0	0	3	6	0	0	0		
04:10:00 PM	14	0	4	0	0	0	0	0	0	0	0	9	8	0	0	6	11	0	0	0	137	
04:15:00 PM	11	0	8	0	0	0	0	0	0	0	0	1	7	0	0	3	5	0	0	0	130	
04:20:00 PM	22	0	7	0	0	0	0	0	0	0	0	6	8	0	0	2	6	0	0	0	138	
04:25:00 PM	14	0	6	0	0	0	0	0	0	0	0	5	12	0	0	0	2	0	0	0	125	
04:30:00 PM	12	0	4	0	0	0	0	0	0	0	0	11	7	0	0	4	6	0	0	0	134	
04:35:00 PM	18	0	8	0	0	0	0	0	0	0	0	7	8	0	0	3	9	0	0	0	136	
04:40:00 PM	19	0	8	0	0	0	0	0	0	0	0	9	11	0	0	0	8	0	0	0	152	
04:45:00 PM	6	0	2	0	0	0	0	0	0	0	0	17	8	0	0	1	5	0	0	0	147	
04:50:00 PM	13	0	9	0	0	0	0	0	0	0	0	13	10	0	0	2	6	0	0	0	147	
04:55:00 PM	16	0	11	0	0	0	0	0	0	0	0	15	11	0	0	10	5	0	0	0	160	574
05:00:00 PM	17	0	6	0	0	0	0	0	0	0	0	10	10	0	0	2	9	0	0	0	175	586
05:05:00 PM	23	0	9	0	0	0	0	0	0	0	0	7	9	0	0	4	17	0	0	0	191	612
05:10:00 PM	18	0	6	0	0	0	0	1	0	0	0	8	9	0	0	4	14	0	0	0	183	620
05:15:00 PM	11	0	5	0	0	0	0	0	0	0	0	8	11	0	0	2	9	0	0	0	175	631
05:20:00 PM	15	0	8	0	0	0	0	0	0	0	0	8	10	0	0	0	5	0	0	0	152	626
05:25:00 PM	10	0	9	0	0	0	0	0	0	0	0	2	2	0	0	4	5	0	0	0	124	619
05:30:00 PM	10	0	1	0	0	0	0	0	0	0	0	8	3	0	0	1	2	0	0	0	103	600
05:35:00 PM	7	0	5	0	0	0	0	0	0	0	0	12	6	0	0	1	5	0	0	0	93	583
05:40:00 PM	9	0	6	0	0	0	0	1	0	0	1	9	5	0	0	3	4	0	0	0	99	566
05:45:00 PM	9	0	8	0	0	0	1	0	0	0	0	8	7	0	0	1	7	0	0	0	115	568
05:50:00 PM	9	1	7	0	0	0	0	0	0	0	0	15	2	0	0	1	6	0	0	0	120	556
05:55:00 PM	5	0	9	0	0	0	0	0	0	0	0	12	4	0	0	0	9	0	0	0	121	527

Car Volumes

Time	NB (NE 9th St)					SB (NE 9th St)					EB (NE Maple Way)					WB (NE Maple Way)					Totals	
Time	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	15min	1hr
04:00:00 PM	13	0	4	0	0	0	0	0	0	0	0	8	10	0	0	2	2	0	0	0		
04:05:00 PM	12	0	4	0	0	0	0	0	0	0	0	11	6	0	0	3	6	0	0	0		
04:10:00 PM	14	0	3	0	0	0	0	0	0	0	0	9	8	0	0	3	11	0	0	0	129	
04:15:00 PM	11	0	7	0	0	0	0	0	0	0	0	1	7	0	0	3	5	0	0	0	124	
04:20:00 PM	22	0	6	0	0	0	0	0	0	0	0	6	7	0	0	1	6	0	0	0	130	
04:25:00 PM	14	0	6	0	0	0	0	0	0	0	0	5	12	0	0	0	2	0	0	0	121	
04:30:00 PM	12	0	4	0	0	0	0	0	0	0	0	11	6	0	0	3	6	0	0	0	129	
04:35:00 PM	18	0	7	0	0	0	0	0	0	0	0	7	8	0	0	2	9	0	0	0	132	
04:40:00 PM	19	0	8	0	0	0	0	0	0	0	0	9	11	0	0	0	8	0	0	0	148	
04:45:00 PM	6	0	2	0	0	0	0	0	0	0	0	17	8	0	0	1	5	0	0	0	145	
04:50:00 PM	13	0	9	0	0	0	0	0	0	0	0	13	10	0	0	2	6	0	0	0	147	
04:55:00 PM	16	0	11	0	0	0	0	0	0	0	0	15	11	0	0	6	5	0	0	0	156	554
05:00:00 PM	17	0	6	0	0	0	0	0	0	0	0	10	10	0	0	2	9	0	0	0	171	569
05:05:00 PM	23	0	9	0	0	0	0	0	0	0	0	7	9	0	0	4	17	0	0	0	187	596
05:10:00 PM	18	0	6	0	0	0	0	1	0	0	0	8	8	0	0	4	14	0	0	0	182	607
05:15:00 PM	11	0	5	0	0	0	0	0	0	0	0	8	10	0	0	2	9	0	0	0	173	618
05:20:00 PM	15	0	8	0	0	0	0	0	0	0	0	8	10	0	0	0	5	0	0	0	150	616
05:25:00 PM	10	0	9	0	0	0	0	0	0	0	0	2	2	0	0	3	5	0	0	0	122	608
05:30:00 PM	10	0	1	0	0	0	0	0	0	0	0	8	3	0	0	1	2	0	0	0	102	591
05:35:00 PM	7	0	5	0	0	0	0	0	0	0	0	12	6	0	0	1	5	0	0	0	92	576
05:40:00 PM	9	0	6	0	0	0	0	1	0	0	1	9	5	0	0	3	4	0	0	0	99	559
05:45:00 PM	9	0	8	0	0	0	1	0	0	0	0	8	7	0	0	1	7	0	0	0	115	561
05:50:00 PM	9	1	7	0	0	0	0	0	0	0	0	15	2	0	0	1	6	0	0	0	120	549
05:55:00 PM	5	0	9	0	0	0	0	0	0	0	0	12	4	0	0	0	9	0	0	0	121	524

Truck Volumes

Time	NB (NE 9th St)					SB (NE 9th St)					EB (NE Maple Way)					WB (NE Maple Way)					Totals	
Time	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	15min	1hr
04:00:00 PM	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0		
04:05:00 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0		
04:10:00 PM	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	9	
04:15:00 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	
04:20:00 PM	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	9	
04:25:00 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	
04:30:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	6	
04:35:00 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	5	
04:40:00 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	
04:45:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	
04:50:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
04:55:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	4	23
05:00:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	20
05:05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	19
05:10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	15
05:15:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	2	15
05:20:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	12
05:25:00 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	3	13
05:30:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	11
05:35:00 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	10
05:40:00 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	10
05:45:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	10
05:50:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	10
05:55:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6

Bike Volumes

Time	NB (NE 9th St)					SB (NE 9th St)					EB (NE Maple Way)					WB (NE Maple Way)					Totals	
Time	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	15min	1hr
04:00:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
04:05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
04:10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
04:15:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
04:20:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
04:25:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
04:30:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
04:35:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
04:40:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
04:45:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
04:50:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
04:55:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:05:00 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
05:10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
05:15:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
05:20:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:25:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:30:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:35:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:40:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:45:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:50:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:55:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1

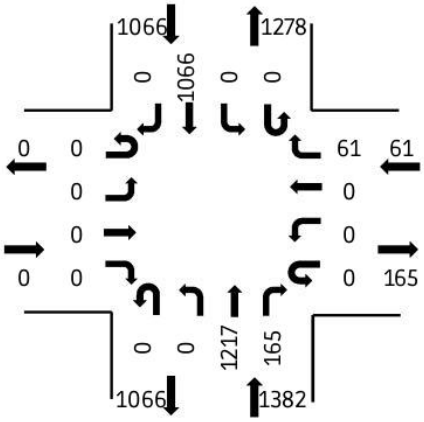
Pedestrian Volumes

Time	Pedestrians				Totals	
Time	NB	SB	EB	WB	15min	1hr
04:00:00 PM	0	0	0	0		
04:05:00 PM	0	0	0	0		
04:10:00 PM	0	0	0	0	0	
04:15:00 PM	0	0	0	0	0	
04:20:00 PM	0	0	0	0	0	
04:25:00 PM	0	0	0	0	0	
04:30:00 PM	0	0	0	0	0	
04:35:00 PM	0	0	0	0	0	
04:40:00 PM	0	0	0	0	0	
04:45:00 PM	0	0	0	0	0	
04:50:00 PM	0	0	0	0	0	
04:55:00 PM	0	0	0	0	0	0
05:00:00 PM	0	0	0	0	0	0
05:05:00 PM	0	0	0	0	0	0
05:10:00 PM	0	0	0	0	0	0
05:15:00 PM	0	0	0	0	0	0
05:20:00 PM	0	0	0	0	0	0
05:25:00 PM	0	0	0	0	0	0
05:30:00 PM	0	0	0	0	0	0
05:35:00 PM	0	0	0	0	0	0
05:40:00 PM	0	0	0	0	0	0
05:45:00 PM	0	0	0	0	0	0
05:50:00 PM	0	0	0	0	0	0
05:55:00 PM	0	0	0	0	0	0

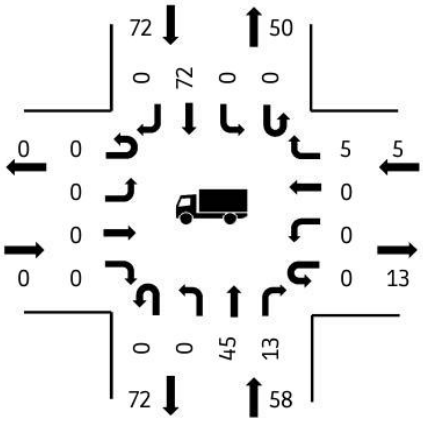
RallyTraffic

Location: US 97 & NE Hemlock Ave
Date: 2024-04-09
Peak Hour Start: 04:00 PM
Peak 15 Minute Start: 04:00 PM
Peak Hour Factor: 0.94

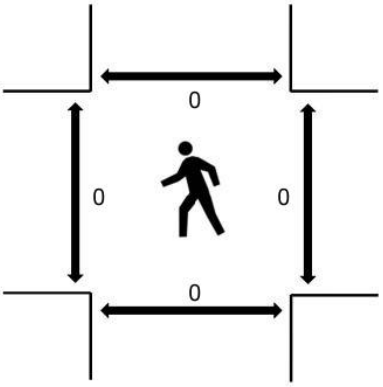
Motorized Vehicles



Heavy Vehicles



Pedestrians



(peak hour)

All Vehicle Volumes

Time	NB (US 97)					SB (US 97)					EB (NE Hemlock Ave)					WB (NE Hemlock Ave)					Totals	
Time	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	15min	1hr
04:00:00 PM	0	112	18	0	0	0	100	0	0	0	0	0	0	0	0	0	0	6	0	0		
04:05:00 PM	0	119	12	0	0	0	84	0	0	0	0	0	0	0	0	0	0	3	0	0		
04:10:00 PM	0	99	8	0	0	0	101	0	0	0	0	0	0	0	0	0	0	6	0	0	668	
04:15:00 PM	0	96	12	0	0	0	86	0	0	0	0	0	0	0	0	0	0	3	0	0	629	
04:20:00 PM	0	84	22	0	0	0	96	0	0	0	0	0	0	0	0	0	0	7	0	0	620	
04:25:00 PM	0	105	9	0	0	0	93	0	0	0	0	0	0	0	0	0	0	4	0	0	617	
04:30:00 PM	0	68	12	0	0	0	70	0	0	0	0	0	0	0	0	0	0	6	0	0	576	
04:35:00 PM	0	101	19	0	0	0	87	0	0	0	0	0	0	0	0	0	0	5	0	0	579	
04:40:00 PM	0	118	9	0	0	0	97	0	0	0	0	0	0	0	0	0	0	3	0	0	595	
04:45:00 PM	0	104	10	0	0	0	90	0	0	0	0	0	0	0	0	0	0	8	0	0	651	
04:50:00 PM	0	96	14	0	0	0	87	0	0	0	0	0	0	0	0	0	0	3	0	0	639	
04:55:00 PM	0	115	20	0	0	0	75	0	0	0	0	0	0	0	0	0	0	7	0	0	629	2509
05:00:00 PM	0	95	12	0	0	0	92	0	0	0	0	0	0	0	0	0	0	5	0	0	621	2477
05:05:00 PM	0	105	16	0	0	0	78	0	0	0	0	0	0	0	0	0	0	7	0	0	627	2465
05:10:00 PM	0	127	14	0	0	0	86	0	0	0	0	0	0	0	0	0	0	6	0	0	643	2484
05:15:00 PM	0	109	17	0	0	0	80	0	0	0	0	0	0	0	0	0	0	4	0	0	649	2497
05:20:00 PM	0	75	12	0	0	0	73	0	0	0	0	0	0	0	0	0	0	1	0	0	604	2449
05:25:00 PM	0	109	18	0	0	0	74	0	0	0	0	0	0	0	0	0	0	2	0	0	574	2441
05:30:00 PM	0	93	17	0	0	0	59	0	0	0	0	0	0	0	0	0	0	5	0	0	538	2459
05:35:00 PM	0	88	14	0	0	0	81	0	0	0	0	0	0	0	0	0	0	2	0	0	562	2432
05:40:00 PM	0	95	15	0	0	0	77	0	0	0	0	0	0	0	0	0	0	2	0	0	548	2394
05:45:00 PM	0	104	33	0	0	0	84	0	0	0	0	0	0	0	0	0	0	2	0	0	597	2405
05:50:00 PM	0	53	16	0	0	0	83	0	0	0	0	0	0	0	0	0	0	3	0	0	567	2360
05:55:00 PM	0	81	16	0	0	0	77	0	0	0	0	0	0	0	0	0	0	1	0	0	553	2318

Car Volumes

Time	NB (US 97)					SB (US 97)					EB (NE Hemlock Ave)					WB (NE Hemlock Ave)					Totals	
Time	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	15min	1hr
04:00:00 PM	0	107	18	0	0	0	94	0	0	0	0	0	0	0	0	0	0	6	0	0		
04:05:00 PM	0	116	11	0	0	0	80	0	0	0	0	0	0	0	0	0	0	3	0	0		
04:10:00 PM	0	97	7	0	0	0	90	0	0	0	0	0	0	0	0	0	0	5	0	0	634	
04:15:00 PM	0	93	10	0	0	0	81	0	0	0	0	0	0	0	0	0	0	3	0	0	596	
04:20:00 PM	0	80	20	0	0	0	83	0	0	0	0	0	0	0	0	0	0	6	0	0	575	
04:25:00 PM	0	101	9	0	0	0	89	0	0	0	0	0	0	0	0	0	0	3	0	0	578	
04:30:00 PM	0	65	11	0	0	0	63	0	0	0	0	0	0	0	0	0	0	6	0	0	536	
04:35:00 PM	0	98	16	0	0	0	81	0	0	0	0	0	0	0	0	0	0	5	0	0	547	
04:40:00 PM	0	114	7	0	0	0	90	0	0	0	0	0	0	0	0	0	0	3	0	0	559	
04:45:00 PM	0	97	10	0	0	0	88	0	0	0	0	0	0	0	0	0	0	6	0	0	615	
04:50:00 PM	0	92	14	0	0	0	84	0	0	0	0	0	0	0	0	0	0	3	0	0	608	
04:55:00 PM	0	112	19	0	0	0	71	0	0	0	0	0	0	0	0	0	0	7	0	0	603	2374
05:00:00 PM	0	90	11	0	0	0	87	0	0	0	0	0	0	0	0	0	0	5	0	0	595	2342
05:05:00 PM	0	98	16	0	0	0	71	0	0	0	0	0	0	0	0	0	0	7	0	0	594	2324
05:10:00 PM	0	123	14	0	0	0	79	0	0	0	0	0	0	0	0	0	0	6	0	0	607	2347
05:15:00 PM	0	103	17	0	0	0	78	0	0	0	0	0	0	0	0	0	0	3	0	0	615	2361
05:20:00 PM	0	71	11	0	0	0	64	0	0	0	0	0	0	0	0	0	0	1	0	0	570	2319
05:25:00 PM	0	103	17	0	0	0	70	0	0	0	0	0	0	0	0	0	0	2	0	0	540	2309
05:30:00 PM	0	89	16	0	0	0	53	0	0	0	0	0	0	0	0	0	0	5	0	0	502	2327
05:35:00 PM	0	81	14	0	0	0	75	0	0	0	0	0	0	0	0	0	0	2	0	0	527	2299
05:40:00 PM	0	92	15	0	0	0	71	0	0	0	0	0	0	0	0	0	0	2	0	0	515	2265
05:45:00 PM	0	104	33	0	0	0	76	0	0	0	0	0	0	0	0	0	0	2	0	0	567	2279
05:50:00 PM	0	53	16	0	0	0	79	0	0	0	0	0	0	0	0	0	0	3	0	0	546	2237
05:55:00 PM	0	77	13	0	0	0	68	0	0	0	0	0	0	0	0	0	0	1	0	0	525	2187

Truck Volumes

Time	NB (US 97)					SB (US 97)					EB (NE Hemlock Ave)					WB (NE Hemlock Ave)					Totals	
Time	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	15min	1hr
04:00:00 PM	0	5	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0		
04:05:00 PM	0	3	1	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0		
04:10:00 PM	0	2	1	0	0	0	11	0	0	0	0	0	0	0	0	0	0	1	0	0	34	
04:15:00 PM	0	3	2	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	33	
04:20:00 PM	0	4	2	0	0	0	13	0	0	0	0	0	0	0	0	0	0	1	0	0	45	
04:25:00 PM	0	4	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	1	0	0	39	
04:30:00 PM	0	3	1	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	40	
04:35:00 PM	0	3	3	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	32	
04:40:00 PM	0	4	2	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	36	
04:45:00 PM	0	7	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2	0	0	36	
04:50:00 PM	0	4	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	31	
04:55:00 PM	0	3	1	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	26	135
05:00:00 PM	0	5	1	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	26	135
05:05:00 PM	0	7	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	33	141
05:10:00 PM	0	4	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	36	137
05:15:00 PM	0	6	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	1	0	0	34	136
05:20:00 PM	0	4	1	0	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	34	130
05:25:00 PM	0	6	1	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	34	132
05:30:00 PM	0	4	1	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	36	132
05:35:00 PM	0	7	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	35	133
05:40:00 PM	0	3	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	33	129
05:45:00 PM	0	0	0	0	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	30	126
05:50:00 PM	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	21	123
05:55:00 PM	0	4	3	0	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	28	131

Bike Volumes

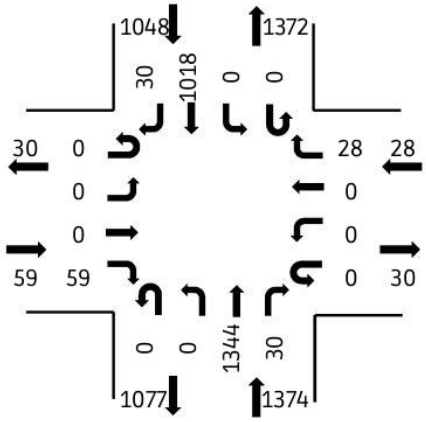
Time	NB (US 97)					SB (US 97)					EB (NE Hemlock Ave)					WB (NE Hemlock Ave)					Totals	
Time	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	15min	1hr
04:00:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
04:05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
04:10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
04:15:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
04:20:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
04:25:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
04:30:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
04:35:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
04:40:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
04:45:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
04:50:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
04:55:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:20:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:25:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:35:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:40:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:50:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:55:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Pedestrian Volumes

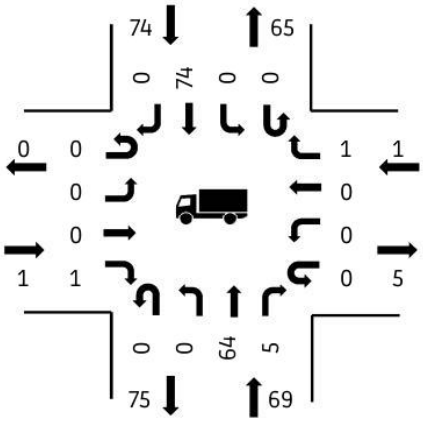
Time	Pedestrians				Totals	
Time	NB	SB	EB	WB	15min	1hr
04:00:00 PM	0	0	0	0		
04:05:00 PM	0	0	0	0		
04:10:00 PM	0	0	0	0	0	
04:15:00 PM	0	0	0	0	0	
04:20:00 PM	0	0	0	0	0	
04:25:00 PM	0	0	0	0	0	
04:30:00 PM	0	0	0	0	0	
04:35:00 PM	0	0	0	0	0	
04:40:00 PM	0	0	0	0	0	
04:45:00 PM	0	0	0	0	0	
04:50:00 PM	0	0	0	0	0	
04:55:00 PM	0	0	0	0	0	0
05:00:00 PM	0	0	0	0	0	0
05:05:00 PM	0	0	0	0	0	0
05:10:00 PM	0	0	0	0	0	0
05:15:00 PM	0	0	0	0	0	0
05:20:00 PM	0	0	0	0	0	0
05:25:00 PM	0	0	0	0	0	0
05:30:00 PM	0	0	0	0	0	0
05:35:00 PM	0	0	0	0	0	0
05:40:00 PM	0	0	0	0	0	0
05:45:00 PM	0	0	0	0	0	0
05:50:00 PM	0	0	0	0	0	0
05:55:00 PM	0	0	0	0	0	0

Location: US 97 & E Antler Ave
Date: 2024-04-09
Peak Hour Start: 04:20 PM
Peak 15 Minute Start: 05:00 PM
Peak Hour Factor: 0.96

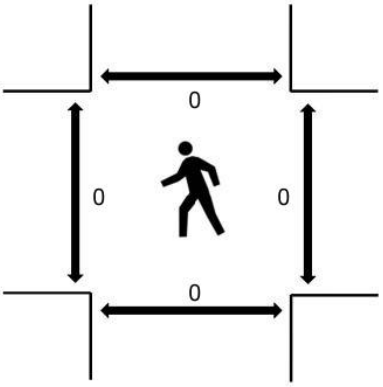
Motorized Vehicles



Heavy Vehicles



Pedestrians



(peak hour)

All Vehicle Volumes

Time	NB (US 97)					SB (US 97)					EB (E Antler Ave)					WB (E Antler Ave)					Totals	
Time	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	15min	1hr
04:00:00 PM	0	103	3	0	0	0	89	5	0	0	0	0	6	0	0	0	0	12	0	0		
04:05:00 PM	0	115	1	0	0	0	90	1	0	0	0	0	2	0	0	0	0	6	0	0		
04:10:00 PM	0	95	2	0	0	0	94	2	0	0	0	0	6	0	0	0	0	2	0	0	634	
04:15:00 PM	0	104	2	0	0	0	83	3	0	0	0	0	2	0	0	0	0	2	0	0	612	
04:20:00 PM	0	128	3	0	0	0	92	2	0	0	0	0	7	0	0	0	0	0	0	0	629	
04:25:00 PM	0	88	4	0	0	0	89	4	0	0	0	0	2	0	0	0	0	0	0	0	615	
04:30:00 PM	0	77	5	0	0	0	71	6	0	0	0	0	6	0	0	0	0	3	0	0	587	
04:35:00 PM	0	133	3	0	0	0	85	2	0	0	0	0	5	0	0	0	0	2	0	0	585	
04:40:00 PM	0	104	0	0	0	0	90	2	0	0	0	0	4	0	0	0	0	4	0	0	602	
04:45:00 PM	0	101	0	0	0	0	88	2	0	0	0	0	5	0	0	0	0	3	0	0	633	
04:50:00 PM	0	135	4	0	0	0	79	5	0	0	0	0	4	0	0	0	0	1	0	0	631	
04:55:00 PM	0	115	2	0	0	0	76	2	0	0	0	0	4	0	0	0	0	2	0	0	628	2479
05:00:00 PM	0	115	1	0	0	0	86	1	0	0	0	0	8	0	0	0	0	2	0	0	642	2474
05:05:00 PM	0	110	3	0	0	0	87	0	0	0	0	0	4	0	0	0	0	6	0	0	624	2469
05:10:00 PM	0	125	1	0	0	0	89	3	0	0	0	0	5	0	0	0	0	4	0	0	650	2495
05:15:00 PM	0	113	4	0	0	0	86	1	0	0	0	0	5	0	0	0	0	1	0	0	647	2509
05:20:00 PM	0	98	0	0	0	0	71	3	0	0	0	0	3	0	0	0	0	1	0	0	613	2453
05:25:00 PM	0	134	1	0	0	0	67	4	0	0	0	0	6	0	0	0	0	1	0	0	599	2479
05:30:00 PM	0	82	0	0	0	0	59	3	0	0	0	0	3	0	0	0	0	0	0	0	536	2458
05:35:00 PM	0	104	0	0	0	0	78	1	0	0	0	0	2	0	0	0	0	2	0	0	547	2415
05:40:00 PM	0	143	1	0	0	0	77	2	0	0	0	0	4	0	0	0	0	1	0	0	562	2439
05:45:00 PM	0	106	4	0	0	0	75	2	0	0	0	0	6	0	0	0	0	3	0	0	611	2436
05:50:00 PM	0	66	0	0	0	0	82	3	0	0	0	0	6	0	0	0	0	1	0	0	582	2366
05:55:00 PM	0	106	2	0	0	0	70	5	0	0	0	0	6	0	0	0	0	2	0	0	545	2356

Car Volumes

Time	NB (US 97)					SB (US 97)					EB (E Antler Ave)					WB (E Antler Ave)					Totals	
Time	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	15min	1hr
04:00:00 PM	0	98	2	0	0	0	83	5	0	0	0	0	5	0	0	0	0	12	0	0		
04:05:00 PM	0	110	1	0	0	0	87	1	0	0	0	0	2	0	0	0	0	6	0	0		
04:10:00 PM	0	92	2	0	0	0	82	2	0	0	0	0	6	0	0	0	0	2	0	0	598	
04:15:00 PM	0	99	2	0	0	0	80	3	0	0	0	0	2	0	0	0	0	2	0	0	581	
04:20:00 PM	0	122	2	0	0	0	79	2	0	0	0	0	7	0	0	0	0	0	0	0	586	
04:25:00 PM	0	84	2	0	0	0	84	4	0	0	0	0	2	0	0	0	0	0	0	0	576	
04:30:00 PM	0	73	4	0	0	0	63	6	0	0	0	0	6	0	0	0	0	3	0	0	543	
04:35:00 PM	0	127	3	0	0	0	77	2	0	0	0	0	5	0	0	0	0	1	0	0	546	
04:40:00 PM	0	98	0	0	0	0	82	2	0	0	0	0	4	0	0	0	0	4	0	0	560	
04:45:00 PM	0	95	0	0	0	0	87	2	0	0	0	0	5	0	0	0	0	3	0	0	597	
04:50:00 PM	0	131	4	0	0	0	76	5	0	0	0	0	4	0	0	0	0	1	0	0	603	
04:55:00 PM	0	110	2	0	0	0	71	2	0	0	0	0	4	0	0	0	0	2	0	0	604	2338
05:00:00 PM	0	108	1	0	0	0	83	1	0	0	0	0	8	0	0	0	0	2	0	0	615	2336
05:05:00 PM	0	104	2	0	0	0	79	0	0	0	0	0	4	0	0	0	0	6	0	0	589	2324
05:10:00 PM	0	120	1	0	0	0	80	3	0	0	0	0	5	0	0	0	0	4	0	0	611	2351
05:15:00 PM	0	108	4	0	0	0	83	1	0	0	0	0	4	0	0	0	0	1	0	0	609	2364
05:20:00 PM	0	93	0	0	0	0	64	3	0	0	0	0	3	0	0	0	0	1	0	0	578	2316
05:25:00 PM	0	126	1	0	0	0	63	4	0	0	0	0	6	0	0	0	0	1	0	0	566	2341
05:30:00 PM	0	78	0	0	0	0	55	3	0	0	0	0	3	0	0	0	0	0	0	0	504	2325
05:35:00 PM	0	97	0	0	0	0	72	1	0	0	0	0	2	0	0	0	0	2	0	0	514	2284
05:40:00 PM	0	139	0	0	0	0	69	2	0	0	0	0	4	0	0	0	0	1	0	0	528	2309
05:45:00 PM	0	106	3	0	0	0	67	2	0	0	0	0	6	0	0	0	0	3	0	0	576	2304
05:50:00 PM	0	64	0	0	0	0	77	3	0	0	0	0	6	0	0	0	0	1	0	0	553	2234
05:55:00 PM	0	101	2	0	0	0	63	5	0	0	0	0	6	0	0	0	0	1	0	0	516	2221

Truck Volumes

Time	NB (US 97)					SB (US 97)					EB (E Antler Ave)					WB (E Antler Ave)					Totals	
Time	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	15min	1hr
04:00:00 PM	0	5	1	0	0	0	6	0	0	0	0	0	1	0	0	0	0	0	0	0		
04:05:00 PM	0	5	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0		
04:10:00 PM	0	3	0	0	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	36	
04:15:00 PM	0	5	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	31	
04:20:00 PM	0	6	1	0	0	0	13	0	0	0	0	0	0	0	0	0	0	0	0	0	43	
04:25:00 PM	0	4	2	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	39	
04:30:00 PM	0	4	1	0	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	44	
04:35:00 PM	0	6	0	0	0	0	8	0	0	0	0	0	0	0	0	0	0	1	0	0	39	
04:40:00 PM	0	6	0	0	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	42	
04:45:00 PM	0	6	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	36	
04:50:00 PM	0	4	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	28	
04:55:00 PM	0	5	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	24	141
05:00:00 PM	0	7	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	27	138
05:05:00 PM	0	6	1	0	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	35	145
05:10:00 PM	0	5	0	0	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	39	144
05:15:00 PM	0	5	0	0	0	0	3	0	0	0	0	0	1	0	0	0	0	0	0	0	38	145
05:20:00 PM	0	5	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	35	137
05:25:00 PM	0	8	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	33	138
05:30:00 PM	0	4	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	32	133
05:35:00 PM	0	7	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	33	131
05:40:00 PM	0	4	1	0	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	34	130
05:45:00 PM	0	0	1	0	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	35	132
05:50:00 PM	0	2	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	29	132
05:55:00 PM	0	5	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0	1	0	0	29	135

Bike Volumes

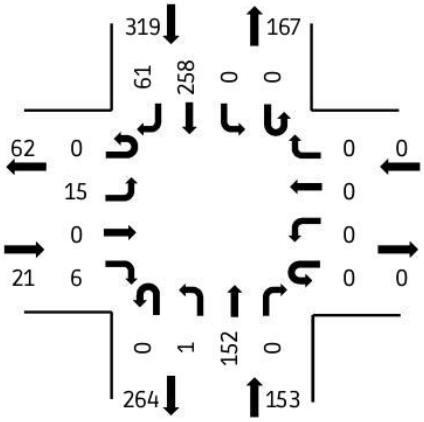
Time	NB (US 97)					SB (US 97)					EB (E Antler Ave)					WB (E Antler Ave)					Totals	
Time	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	15min	1hr
04:00:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
04:05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
04:10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
04:15:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
04:20:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
04:25:00 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	
04:30:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
04:35:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
04:40:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
04:45:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
04:50:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
04:55:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:00:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:15:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:20:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:25:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:35:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:40:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:50:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:55:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Pedestrian Volumes

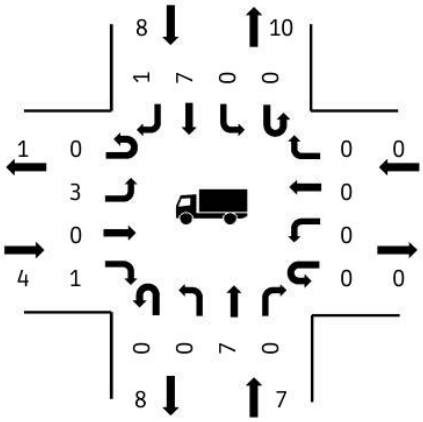
Time	Pedestrians				Totals	
Time	NB	SB	EB	WB	15min	1hr
04:00:00 PM	0	0	0	0		
04:05:00 PM	0	0	0	0		
04:10:00 PM	0	0	0	0	0	
04:15:00 PM	0	0	0	0	0	
04:20:00 PM	0	0	0	0	0	
04:25:00 PM	0	0	0	0	0	
04:30:00 PM	0	0	0	0	0	
04:35:00 PM	0	0	0	0	0	
04:40:00 PM	0	0	0	0	0	
04:45:00 PM	0	0	0	0	0	
04:50:00 PM	0	0	0	0	0	
04:55:00 PM	0	0	0	0	0	0
05:00:00 PM	0	0	0	0	0	0
05:05:00 PM	0	0	0	0	0	0
05:10:00 PM	0	0	0	0	0	0
05:15:00 PM	0	0	0	0	0	0
05:20:00 PM	0	0	0	0	0	0
05:25:00 PM	0	0	0	0	0	0
05:30:00 PM	0	0	0	0	0	0
05:35:00 PM	0	0	0	0	0	0
05:40:00 PM	0	0	0	0	0	0
05:45:00 PM	0	0	0	0	0	0
05:50:00 PM	0	0	0	0	0	0
05:55:00 PM	0	0	0	0	0	0

Location: SE 9th St & Evergreen Ave
Date: 2024-04-09
Peak Hour Start: 04:25 PM
Peak 15 Minute Start: 04:30 PM
Peak Hour Factor: 0.88

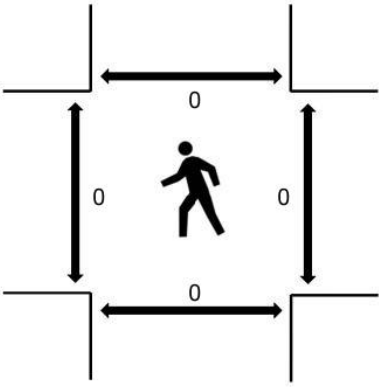
Motorized Vehicles



Heavy Vehicles



Pedestrians



(peak hour)

All Vehicle Volumes

Time	NB (SE 9th St)					SB (SE 9th St)					EB (Evergreen Ave)					WB (Evergreen Ave)					Totals	
Time	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	15min	1hr
04:00:00 PM	0	12	0	0	0	0	24	8	0	0	1	0	1	0	0	0	0	0	0	0		
04:05:00 PM	0	16	0	0	0	0	23	9	0	0	0	0	0	0	0	0	0	0	0	0		
04:10:00 PM	0	10	0	0	0	0	19	5	0	0	1	0	0	0	0	0	0	0	0	0	129	
04:15:00 PM	0	16	0	0	0	0	18	1	0	0	3	0	0	0	0	0	0	0	0	0	121	
04:20:00 PM	1	9	0	0	0	0	12	4	0	0	1	0	0	0	0	0	0	0	0	0	100	
04:25:00 PM	0	7	0	0	0	0	23	5	0	0	1	0	1	0	0	0	0	0	0	0	102	
04:30:00 PM	0	7	0	0	0	0	23	9	0	0	1	0	1	0	0	0	0	0	0	0	105	
04:35:00 PM	0	13	0	0	0	0	30	7	0	0	4	0	0	0	0	0	0	0	0	0	132	
04:40:00 PM	0	22	0	0	0	0	19	3	0	0	1	0	0	0	0	0	0	0	0	0	140	
04:45:00 PM	0	10	0	0	0	0	16	5	0	0	1	0	0	0	0	0	0	0	0	0	131	
04:50:00 PM	0	11	0	0	0	0	21	8	0	0	2	0	0	0	0	0	0	0	0	0	119	
04:55:00 PM	0	10	0	0	0	0	26	6	0	0	1	0	2	0	0	0	0	0	0	0	119	490
05:00:00 PM	0	11	0	0	0	0	22	2	0	0	1	0	0	0	0	0	0	0	0	0	123	480
05:05:00 PM	1	20	0	0	0	0	24	9	0	0	1	0	1	0	0	0	0	0	0	0	137	488
05:10:00 PM	0	14	0	0	0	0	19	3	0	0	0	0	0	0	0	0	0	0	0	0	128	489
05:15:00 PM	0	11	0	0	0	0	18	2	0	0	1	0	1	0	0	0	0	0	0	0	125	484
05:20:00 PM	0	16	0	0	0	0	17	2	0	0	1	0	0	0	0	0	0	0	0	0	105	493
05:25:00 PM	0	13	0	0	0	0	16	2	0	0	1	0	0	0	0	0	0	0	0	0	101	488
05:30:00 PM	0	11	0	0	0	0	12	3	0	0	0	0	0	0	0	0	0	0	0	0	94	473
05:35:00 PM	0	11	0	0	0	0	9	1	0	0	1	0	0	0	0	0	0	0	0	0	80	441
05:40:00 PM	0	8	0	0	0	0	7	2	0	0	1	0	0	0	0	0	0	0	0	0	66	414
05:45:00 PM	0	7	0	0	0	0	3	2	0	0	1	0	0	0	0	0	0	0	0	0	53	395
05:50:00 PM	0	15	0	0	0	0	9	2	0	0	0	0	0	0	0	0	0	0	0	0	57	379
05:55:00 PM	0	7	0	0	0	0	6	3	0	0	0	0	1	0	0	0	0	0	0	0	56	351

Car Volumes

Time	NB (SE 9th St)					SB (SE 9th St)					EB (Evergreen Ave)					WB (Evergreen Ave)					Totals	
Time	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	15min	1hr
04:00:00 PM	0	12	0	0	0	0	24	6	0	0	1	0	1	0	0	0	0	0	0	0		
04:05:00 PM	0	14	0	0	0	0	21	9	0	0	0	0	0	0	0	0	0	0	0	0		
04:10:00 PM	0	9	0	0	0	0	18	5	0	0	1	0	0	0	0	0	0	0	0	0	121	
04:15:00 PM	0	14	0	0	0	0	17	1	0	0	3	0	0	0	0	0	0	0	0	0	112	
04:20:00 PM	1	9	0	0	0	0	12	4	0	0	1	0	0	0	0	0	0	0	0	0	95	
04:25:00 PM	0	6	0	0	0	0	22	5	0	0	1	0	0	0	0	0	0	0	0	0	96	
04:30:00 PM	0	7	0	0	0	0	23	9	0	0	0	0	1	0	0	0	0	0	0	0	101	
04:35:00 PM	0	12	0	0	0	0	29	7	0	0	4	0	0	0	0	0	0	0	0	0	126	
04:40:00 PM	0	19	0	0	0	0	19	2	0	0	0	0	0	0	0	0	0	0	0	0	132	
04:45:00 PM	0	9	0	0	0	0	15	5	0	0	1	0	0	0	0	0	0	0	0	0	122	
04:50:00 PM	0	11	0	0	0	0	21	8	0	0	1	0	0	0	0	0	0	0	0	0	111	
04:55:00 PM	0	10	0	0	0	0	24	6	0	0	1	0	2	0	0	0	0	0	0	0	114	463
05:00:00 PM	0	11	0	0	0	0	22	2	0	0	1	0	0	0	0	0	0	0	0	0	120	455
05:05:00 PM	1	20	0	0	0	0	24	9	0	0	1	0	1	0	0	0	0	0	0	0	135	467
05:10:00 PM	0	13	0	0	0	0	19	3	0	0	0	0	0	0	0	0	0	0	0	0	127	469
05:15:00 PM	0	11	0	0	0	0	16	2	0	0	1	0	1	0	0	0	0	0	0	0	122	465
05:20:00 PM	0	16	0	0	0	0	17	2	0	0	1	0	0	0	0	0	0	0	0	0	102	474
05:25:00 PM	0	13	0	0	0	0	15	2	0	0	1	0	0	0	0	0	0	0	0	0	98	471
05:30:00 PM	0	11	0	0	0	0	12	3	0	0	0	0	0	0	0	0	0	0	0	0	93	457
05:35:00 PM	0	11	0	0	0	0	8	1	0	0	1	0	0	0	0	0	0	0	0	0	78	426
05:40:00 PM	0	8	0	0	0	0	7	2	0	0	1	0	0	0	0	0	0	0	0	0	65	404
05:45:00 PM	0	7	0	0	0	0	3	2	0	0	1	0	0	0	0	0	0	0	0	0	52	387
05:50:00 PM	0	15	0	0	0	0	9	2	0	0	0	0	0	0	0	0	0	0	0	0	57	372
05:55:00 PM	0	6	0	0	0	0	6	3	0	0	0	0	1	0	0	0	0	0	0	0	55	345

Truck Volumes

Time	NB (SE 9th St)					SB (SE 9th St)					EB (Evergreen Ave)					WB (Evergreen Ave)					Totals	
Time	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	15min	1hr
04:00:00 PM	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0		
04:05:00 PM	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0		
04:10:00 PM	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	8	
04:15:00 PM	0	2	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	9	
04:20:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	
04:25:00 PM	0	1	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	6	
04:30:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	4	
04:35:00 PM	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	6	
04:40:00 PM	0	3	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	8	
04:45:00 PM	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	9	
04:50:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	8	
04:55:00 PM	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	5	27
05:00:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	25
05:05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	21
05:10:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	20
05:15:00 PM	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	3	19
05:20:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	19
05:25:00 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	3	17
05:30:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	16
05:35:00 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	15
05:40:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	10
05:45:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	8
05:50:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7
05:55:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	6

Bike Volumes

Time	NB (SE 9th St)					SB (SE 9th St)					EB (Evergreen Ave)					WB (Evergreen Ave)					Totals	
Time	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	15min	1hr
04:00:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
04:05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
04:10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
04:15:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
04:20:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
04:25:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
04:30:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
04:35:00 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
04:40:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
04:45:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
04:50:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
04:55:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:00:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:15:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:20:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:25:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:30:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:35:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:40:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:50:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:55:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

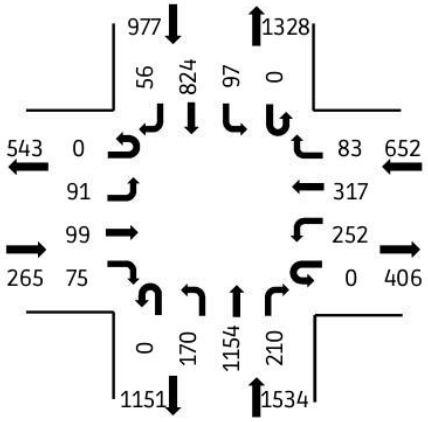
Pedestrian Volumes

Time	Pedestrians				Totals	
Time	NB	SB	EB	WB	15min	1hr
04:00:00 PM	0	0	0	0		
04:05:00 PM	0	0	0	0		
04:10:00 PM	0	0	0	0	0	
04:15:00 PM	0	0	0	0	0	
04:20:00 PM	0	0	0	0	0	
04:25:00 PM	0	0	0	0	0	
04:30:00 PM	0	0	0	0	0	
04:35:00 PM	0	0	0	0	0	
04:40:00 PM	0	0	0	0	0	
04:45:00 PM	0	0	0	0	0	
04:50:00 PM	0	0	0	0	0	
04:55:00 PM	0	0	0	0	0	0
05:00:00 PM	0	0	0	0	0	0
05:05:00 PM	0	0	0	0	0	0
05:10:00 PM	0	0	0	0	0	0
05:15:00 PM	0	0	0	0	0	0
05:20:00 PM	0	0	0	0	0	0
05:25:00 PM	0	0	0	0	0	0
05:30:00 PM	0	0	0	0	0	0
05:35:00 PM	0	0	0	0	0	0
05:40:00 PM	0	0	0	0	0	0
05:45:00 PM	0	0	0	0	0	0
05:50:00 PM	0	0	0	0	0	0
05:55:00 PM	0	0	0	0	0	0

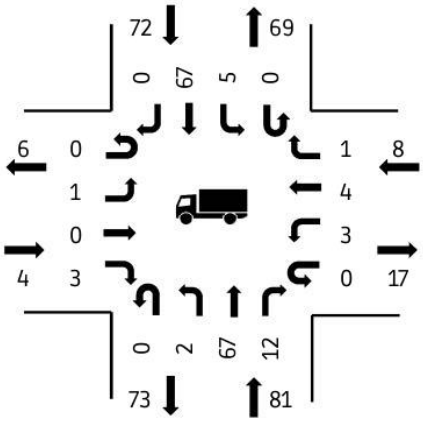
RallyTraffic

Location: US 97 & Evergreen Ave
Date: 2024-04-09
Peak Hour Start: 04:20 PM
Peak 15 Minute Start: 04:20 PM
Peak Hour Factor: 0.98

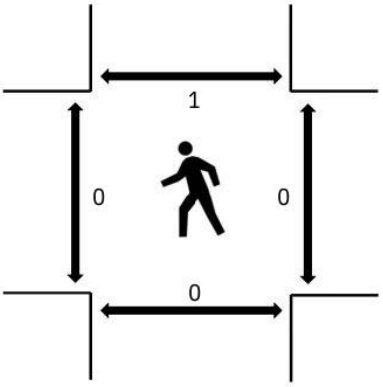
Motorized Vehicles



Heavy Vehicles



Pedestrians



(peak hour)

All Vehicle Volumes

Time	NB (US 97)					SB (US 97)					EB (Evergreen Ave)					WB (Evergreen Ave)					Totals	
Time	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	15min	1hr
04:00:00 PM	14	52	16	0	0	16	57	2	0	0	9	10	3	0	0	16	17	6	0	0		
04:05:00 PM	3	103	24	0	0	4	80	5	0	0	12	7	5	0	0	17	25	6	0	0		
04:10:00 PM	19	106	16	0	0	4	76	3	0	0	9	10	5	0	0	20	20	11	0	0	808	
04:15:00 PM	8	84	12	0	0	10	69	5	0	0	18	4	4	0	0	23	20	3	0	0	850	
04:20:00 PM	16	86	17	0	0	8	61	4	0	0	4	8	11	0	0	25	35	9	0	0	843	
04:25:00 PM	18	91	24	0	0	8	69	4	0	0	10	12	5	0	0	16	24	6	0	0	831	
04:30:00 PM	14	106	15	0	0	8	80	4	0	0	3	5	7	0	0	25	35	4	0	0	877	
04:35:00 PM	8	63	18	0	0	5	65	6	0	0	7	6	4	0	0	27	33	4	0	0	839	
04:40:00 PM	18	101	24	0	0	10	58	6	0	0	7	14	5	0	0	18	24	9	0	0	846	
04:45:00 PM	16	98	16	0	0	9	77	1	0	0	7	7	10	0	0	19	19	9	0	0	828	
04:50:00 PM	7	94	22	0	0	8	65	10	0	0	6	9	6	0	0	23	35	6	0	0	873	
04:55:00 PM	14	89	12	0	0	16	64	4	0	0	10	7	5	0	0	20	16	7	0	0	843	3328
05:00:00 PM	10	125	15	0	0	6	74	4	0	0	6	6	2	0	0	19	21	9	0	0	852	3407
05:05:00 PM	18	100	10	0	0	7	62	8	0	0	6	8	2	0	0	19	22	5	0	0	828	3383
05:10:00 PM	12	87	16	0	0	7	69	1	0	0	15	14	7	0	0	19	29	7	0	0	847	3367
05:15:00 PM	19	114	21	0	0	5	80	4	0	0	10	3	11	0	0	22	24	8	0	0	871	3428
05:20:00 PM	6	107	12	0	0	7	86	4	0	0	9	6	2	0	0	20	20	5	0	0	888	3428
05:25:00 PM	11	71	14	0	0	3	54	2	0	0	2	13	8	0	0	21	21	8	0	0	833	3369
05:30:00 PM	15	110	18	0	0	3	70	5	1	0	13	9	4	0	0	13	13	2	0	0	788	3339
05:35:00 PM	11	96	12	0	0	6	60	3	0	0	3	3	2	0	0	13	17	1	0	0	731	3320
05:40:00 PM	11	81	20	0	0	5	66	1	0	0	10	7	5	0	0	16	18	4	0	0	747	3270
05:45:00 PM	21	97	11	0	0	14	57	5	0	0	5	2	6	0	0	9	10	6	0	0	714	3225
05:50:00 PM	11	110	7	0	0	7	77	1	0	0	9	8	3	0	0	14	12	6	0	0	752	3199
05:55:00 PM	10	49	10	0	0	6	64	5	0	0	11	8	7	0	0	13	6	3	0	0	700	3127

Car Volumes

Time	NB (US 97)					SB (US 97)					EB (Evergreen Ave)					WB (Evergreen Ave)					Totals	
Time	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	15min	1hr
04:00:00 PM	14	48	16	0	0	16	52	2	0	0	9	10	3	0	0	14	17	6	0	0		
04:05:00 PM	3	97	23	0	0	3	74	5	0	0	12	6	5	0	0	16	25	6	0	0		
04:10:00 PM	19	102	16	0	0	4	70	3	0	0	9	10	5	0	0	18	20	11	0	0	769	
04:15:00 PM	8	81	12	0	0	10	64	5	0	0	18	4	4	0	0	22	20	3	0	0	813	
04:20:00 PM	16	81	14	0	0	7	55	4	0	0	4	8	10	0	0	24	34	9	0	0	804	
04:25:00 PM	18	84	23	0	0	7	60	4	0	0	10	12	5	0	0	16	23	6	0	0	785	
04:30:00 PM	14	100	15	0	0	8	72	4	0	0	3	5	6	0	0	25	35	4	0	0	825	
04:35:00 PM	8	58	15	0	0	4	60	6	0	0	7	6	4	0	0	27	31	4	0	0	789	
04:40:00 PM	18	95	21	0	0	9	51	6	0	0	7	14	5	0	0	18	24	9	0	0	798	
04:45:00 PM	16	94	16	0	0	9	70	1	0	0	7	7	10	0	0	18	19	9	0	0	783	
04:50:00 PM	7	86	21	0	0	7	62	10	0	0	6	9	6	0	0	23	35	6	0	0	831	
04:55:00 PM	14	85	11	0	0	16	60	4	0	0	10	7	4	0	0	19	16	7	0	0	807	3159
05:00:00 PM	10	121	15	0	0	6	71	4	0	0	6	6	2	0	0	19	21	9	0	0	821	3242
05:05:00 PM	18	95	10	0	0	7	59	8	0	0	5	8	2	0	0	19	22	5	0	0	801	3225
05:10:00 PM	12	78	16	0	0	7	63	1	0	0	15	14	7	0	0	19	29	7	0	0	816	3206
05:15:00 PM	19	110	21	0	0	5	74	4	0	0	10	3	11	0	0	22	24	7	0	0	836	3265
05:20:00 PM	6	102	11	0	0	7	77	4	0	0	9	6	2	0	0	19	20	5	0	0	846	3267
05:25:00 PM	11	66	14	0	0	3	50	2	0	0	2	12	8	0	0	21	21	8	0	0	796	3217
05:30:00 PM	15	102	18	0	0	3	64	5	1	0	13	9	4	0	0	13	13	2	0	0	748	3188
05:35:00 PM	11	92	12	0	0	5	57	3	0	0	3	3	2	0	0	12	17	1	0	0	698	3176
05:40:00 PM	11	75	18	0	0	5	60	1	0	0	10	7	5	0	0	15	18	4	0	0	709	3128
05:45:00 PM	21	93	11	0	0	13	52	5	0	0	5	2	6	0	0	9	10	6	0	0	680	3085
05:50:00 PM	11	109	7	0	0	7	69	1	0	0	9	8	3	0	0	13	12	6	0	0	717	3062
05:55:00 PM	10	48	10	0	0	6	58	5	0	0	11	8	7	0	0	13	6	3	0	0	673	2994

Truck Volumes

Time	NB (US 97)					SB (US 97)					EB (Evergreen Ave)					WB (Evergreen Ave)					Totals	
Time	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	15min	1hr
04:00:00 PM	0	4	0	0	0	0	5	0	0	0	0	0	0	0	0	2	0	0	0	0		
04:05:00 PM	0	6	1	0	0	1	6	0	0	0	0	1	0	0	0	1	0	0	0	0		
04:10:00 PM	0	4	0	0	0	0	6	0	0	0	0	0	0	0	0	2	0	0	0	0	39	
04:15:00 PM	1	3	0	0	0	0	5	0	0	0	0	0	0	0	0	1	0	0	0	0	38	
04:20:00 PM	0	5	3	0	0	1	6	0	0	0	0	0	1	0	0	1	1	0	0	0	40	
04:25:00 PM	1	7	1	0	0	1	9	0	0	0	0	0	0	0	0	0	1	0	0	0	48	
04:30:00 PM	0	6	0	0	0	0	8	0	0	0	0	0	1	0	0	0	0	0	0	0	53	
04:35:00 PM	0	5	3	0	0	1	5	0	0	0	0	0	0	0	0	0	2	0	0	0	51	
04:40:00 PM	0	6	3	0	0	1	7	0	0	0	0	0	0	0	0	0	0	0	0	0	48	
04:45:00 PM	0	4	0	0	0	0	7	0	0	0	0	0	0	0	0	1	0	0	0	0	45	
04:50:00 PM	0	8	1	0	0	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	42	
04:55:00 PM	0	4	1	0	0	0	4	0	0	0	0	0	1	0	0	1	0	0	0	0	36	171
05:00:00 PM	0	4	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	31	167
05:05:00 PM	1	5	0	0	0	0	3	0	0	0	1	0	0	0	0	0	0	0	0	0	28	161
05:10:00 PM	0	9	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	32	164
05:15:00 PM	0	4	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	1	0	0	36	165
05:20:00 PM	0	5	1	0	0	0	9	0	0	0	0	0	0	0	0	1	0	0	0	0	42	163
05:25:00 PM	0	5	0	0	0	0	4	0	0	0	0	1	0	0	0	0	0	0	0	0	37	153
05:30:00 PM	0	8	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	40	152
05:35:00 PM	0	4	0	0	0	1	3	0	0	0	0	0	0	0	0	1	0	0	0	0	33	145
05:40:00 PM	0	6	2	0	0	0	6	0	0	0	0	0	0	0	0	1	0	0	0	0	38	143
05:45:00 PM	0	4	0	0	0	1	5	0	0	0	0	0	0	0	0	0	0	0	0	0	34	141
05:50:00 PM	0	1	0	0	0	0	8	0	0	0	0	0	0	0	0	1	0	0	0	0	35	138
05:55:00 PM	0	1	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	27	134

Bike Volumes

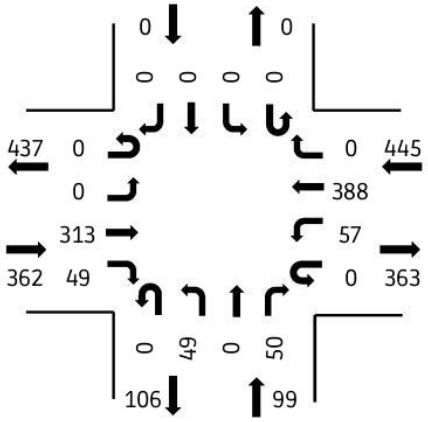
Time	NB (US 97)					SB (US 97)					EB (Evergreen Ave)					WB (Evergreen Ave)					Totals	
Time	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	15min	1hr
04:00:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
04:05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
04:10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
04:15:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
04:20:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
04:25:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
04:30:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
04:35:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
04:40:00 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	
04:45:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
04:50:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
04:55:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:00:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:15:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:20:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:25:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:30:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:35:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:40:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:50:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:55:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Pedestrian Volumes

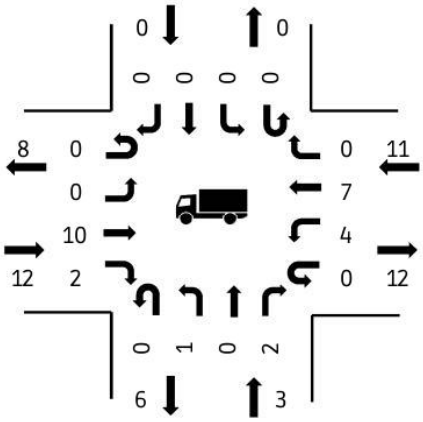
Time	Pedestrians				Totals	
Time	NB	SB	EB	WB	15min	1hr
04:00:00 PM	0	0	0	0		
04:05:00 PM	0	0	0	0		
04:10:00 PM	0	0	0	0	0	
04:15:00 PM	0	0	0	0	0	
04:20:00 PM	0	0	0	0	0	
04:25:00 PM	0	0	0	0	0	
04:30:00 PM	0	0	0	0	0	
04:35:00 PM	0	0	0	0	0	
04:40:00 PM	0	0	0	0	0	
04:45:00 PM	0	0	0	0	0	
04:50:00 PM	0	0	0	0	0	
04:55:00 PM	0	0	0	0	0	0
05:00:00 PM	0	0	0	0	0	0
05:05:00 PM	0	1	0	0	1	1
05:10:00 PM	0	0	0	0	1	1
05:15:00 PM	0	0	0	0	1	1
05:20:00 PM	0	0	0	0	0	1
05:25:00 PM	0	0	0	0	0	1
05:30:00 PM	0	0	0	0	0	1
05:35:00 PM	0	0	0	0	0	1
05:40:00 PM	0	0	0	0	0	1
05:45:00 PM	0	0	0	0	0	1
05:50:00 PM	0	0	0	0	0	1
05:55:00 PM	0	0	0	0	0	1

Location: Lake Rd & OR 126
Date: 2024-04-09
Peak Hour Start: 04:00 PM
Peak 15 Minute Start: 04:35 PM
Peak Hour Factor: 0.9

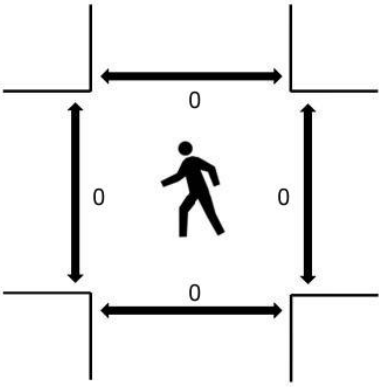
Motorized Vehicles



Heavy Vehicles



Pedestrians



(peak hour)

All Vehicle Volumes

Time	NB (Lake Rd)					SB (Lake Rd)					EB (OR 126)					WB (OR 126)					Totals	
Time	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	15min	1hr
04:00:00 PM	4	0	8	0	0	0	0	0	0	0	0	29	4	0	0	8	32	0	0	0		
04:05:00 PM	6	0	8	0	0	0	0	0	0	0	0	26	5	0	0	4	36	0	0	0		
04:10:00 PM	3	0	2	0	0	0	0	0	0	0	0	22	4	0	0	3	23	0	0	0	227	
04:15:00 PM	4	0	5	0	0	0	0	0	0	0	0	26	5	0	0	2	35	0	0	0	219	
04:20:00 PM	0	0	5	0	0	0	0	0	0	0	0	31	5	0	0	4	33	0	0	0	212	
04:25:00 PM	3	0	0	0	0	0	0	0	0	0	0	25	3	0	0	5	37	0	0	0	228	
04:30:00 PM	8	0	4	0	0	0	0	0	0	0	0	18	3	0	0	5	29	0	0	0	218	
04:35:00 PM	3	0	6	0	0	0	0	0	0	0	0	38	4	0	0	7	33	0	0	0	231	
04:40:00 PM	6	0	7	0	0	0	0	0	0	0	0	23	6	0	0	6	29	0	0	0	235	
04:45:00 PM	4	0	1	0	0	0	0	0	0	0	0	30	3	0	0	7	40	0	0	0	253	
04:50:00 PM	4	0	2	0	0	0	0	0	0	0	0	27	3	0	0	3	27	0	0	0	228	
04:55:00 PM	4	0	2	0	0	0	0	0	0	0	0	18	4	0	0	3	34	0	0	0	216	906
05:00:00 PM	3	0	2	0	0	0	0	0	0	0	0	18	2	0	0	3	27	0	0	0	186	876
05:05:00 PM	6	0	9	0	0	0	0	0	0	0	0	32	3	0	0	8	43	0	0	0	221	892
05:10:00 PM	4	0	8	0	0	0	0	0	0	0	0	19	3	0	0	2	33	0	0	0	225	904
05:15:00 PM	1	0	3	0	0	0	0	0	0	0	0	22	1	0	0	3	20	0	0	0	220	877
05:20:00 PM	2	0	6	0	0	0	0	0	0	0	0	22	1	0	0	5	32	0	0	0	187	867
05:25:00 PM	3	0	4	0	0	0	0	0	0	0	0	27	3	0	0	5	27	0	0	0	187	863
05:30:00 PM	7	0	3	0	0	0	0	0	0	0	0	15	0	0	0	5	18	0	0	0	185	844
05:35:00 PM	6	0	4	0	0	0	0	0	0	0	0	25	2	0	0	4	12	0	0	0	170	806
05:40:00 PM	6	0	1	0	0	0	0	0	0	0	0	26	0	0	0	3	24	0	0	0	161	789
05:45:00 PM	0	0	4	0	0	0	0	0	0	0	0	22	1	0	0	1	13	0	0	0	154	745
05:50:00 PM	0	0	3	0	0	0	0	0	0	0	0	18	2	0	0	3	14	0	0	0	141	719
05:55:00 PM	2	0	1	0	0	0	0	0	0	0	0	21	1	0	0	3	20	0	0	0	129	702

Car Volumes

Time	NB (Lake Rd)					SB (Lake Rd)					EB (OR 126)					WB (OR 126)					Totals	
Time	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	15min	1hr
04:00:00 PM	4	0	8	0	0	0	0	0	0	0	0	28	3	0	0	7	32	0	0	0		
04:05:00 PM	6	0	8	0	0	0	0	0	0	0	0	26	5	0	0	4	35	0	0	0		
04:10:00 PM	3	0	1	0	0	0	0	0	0	0	0	22	4	0	0	3	23	0	0	0	222	
04:15:00 PM	4	0	5	0	0	0	0	0	0	0	0	23	5	0	0	1	34	0	0	0	212	
04:20:00 PM	0	0	5	0	0	0	0	0	0	0	0	30	5	0	0	4	32	0	0	0	204	
04:25:00 PM	3	0	0	0	0	0	0	0	0	0	0	25	3	0	0	4	36	0	0	0	219	
04:30:00 PM	8	0	4	0	0	0	0	0	0	0	0	16	3	0	0	5	29	0	0	0	212	
04:35:00 PM	3	0	6	0	0	0	0	0	0	0	0	36	3	0	0	7	31	0	0	0	222	
04:40:00 PM	6	0	6	0	0	0	0	0	0	0	0	23	6	0	0	6	29	0	0	0	227	
04:45:00 PM	4	0	1	0	0	0	0	0	0	0	0	29	3	0	0	7	39	0	0	0	245	
04:50:00 PM	4	0	2	0	0	0	0	0	0	0	0	27	3	0	0	3	27	0	0	0	225	
04:55:00 PM	4	0	2	0	0	0	0	0	0	0	0	18	4	0	0	2	34	0	0	0	213	881
05:00:00 PM	3	0	2	0	0	0	0	0	0	0	0	18	2	0	0	3	27	0	0	0	185	854
05:05:00 PM	6	0	9	0	0	0	0	0	0	0	0	32	3	0	0	8	43	0	0	0	220	871
05:10:00 PM	4	0	8	0	0	0	0	0	0	0	0	19	3	0	0	2	32	0	0	0	224	883
05:15:00 PM	1	0	3	0	0	0	0	0	0	0	0	21	1	0	0	3	20	0	0	0	218	860
05:20:00 PM	2	0	6	0	0	0	0	0	0	0	0	21	1	0	0	4	30	0	0	0	181	848
05:25:00 PM	3	0	4	0	0	0	0	0	0	0	0	27	3	0	0	5	26	0	0	0	181	845
05:30:00 PM	7	0	3	0	0	0	0	0	0	0	0	15	0	0	0	4	18	0	0	0	179	827
05:35:00 PM	6	0	4	0	0	0	0	0	0	0	0	23	2	0	0	4	11	0	0	0	165	791
05:40:00 PM	6	0	1	0	0	0	0	0	0	0	0	25	0	0	0	3	24	0	0	0	156	774
05:45:00 PM	0	0	4	0	0	0	0	0	0	0	0	22	1	0	0	1	13	0	0	0	150	732
05:50:00 PM	0	0	3	0	0	0	0	0	0	0	0	18	2	0	0	3	14	0	0	0	140	706
05:55:00 PM	2	0	1	0	0	0	0	0	0	0	0	20	1	0	0	3	20	0	0	0	128	689

Truck Volumes

Time	NB (Lake Rd)					SB (Lake Rd)					EB (OR 126)					WB (OR 126)					Totals	
Time	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	15min	1hr
04:00:00 PM	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	0	0	0	0		
04:05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0		
04:10:00 PM	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	
04:15:00 PM	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	1	1	0	0	0	8	
04:20:00 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	9	
04:25:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	9	
04:30:00 PM	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	6	
04:35:00 PM	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	2	0	0	0	9	
04:40:00 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	
04:45:00 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	8	
04:50:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	
04:55:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	3	26
05:00:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	23
05:05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	22
05:10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	21
05:15:00 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	2	17
05:20:00 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	2	0	0	0	6	19
05:25:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	6	18
05:30:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	6	17
05:35:00 PM	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	1	0	0	0	5	15
05:40:00 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	5	15
05:45:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	13
05:50:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	13
05:55:00 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	13

Bike Volumes

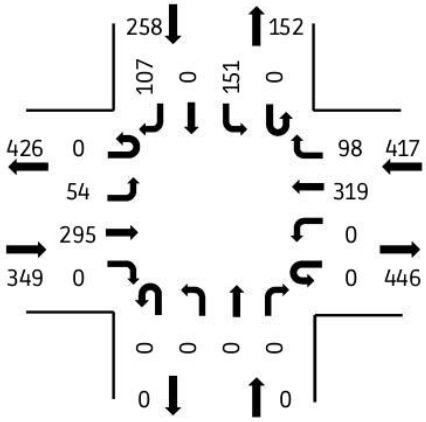
Time	NB (Lake Rd)					SB (Lake Rd)					EB (OR 126)					WB (OR 126)					Totals	
Time	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	15min	1hr
04:00:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
04:05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
04:10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
04:15:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
04:20:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
04:25:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
04:30:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
04:35:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
04:40:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
04:45:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
04:50:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
04:55:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:20:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:25:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:35:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:40:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:50:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:55:00 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1

Pedestrian Volumes

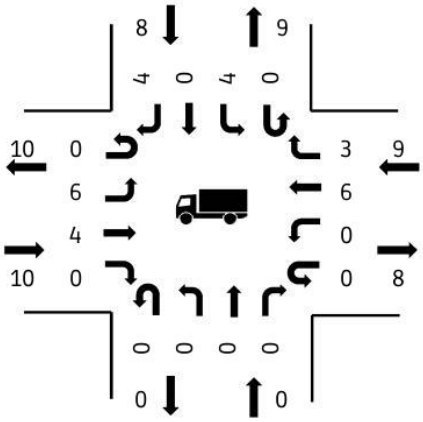
Time	Pedestrians				Totals	
Time	NB	SB	EB	WB	15min	1hr
04:00:00 PM	0	0	0	0		
04:05:00 PM	0	0	0	0		
04:10:00 PM	0	0	0	0	0	
04:15:00 PM	0	0	0	0	0	
04:20:00 PM	0	0	0	0	0	
04:25:00 PM	0	0	0	0	0	
04:30:00 PM	0	0	0	0	0	
04:35:00 PM	0	0	0	0	0	
04:40:00 PM	0	0	0	0	0	
04:45:00 PM	0	0	0	0	0	
04:50:00 PM	0	0	0	0	0	
04:55:00 PM	0	0	0	0	0	0
05:00:00 PM	0	0	0	0	0	0
05:05:00 PM	0	0	0	0	0	0
05:10:00 PM	0	0	0	0	0	0
05:15:00 PM	0	0	0	0	0	0
05:20:00 PM	0	0	0	0	0	0
05:25:00 PM	0	0	0	0	0	0
05:30:00 PM	0	0	0	0	0	0
05:35:00 PM	0	0	0	0	0	0
05:40:00 PM	0	0	0	0	0	0
05:45:00 PM	0	0	0	0	0	0
05:50:00 PM	0	0	0	0	0	0
05:55:00 PM	0	0	0	0	0	0

Location: SE 9th St & OR 126
Date: 2024-04-09
Peak Hour Start: 04:15 PM
Peak 15 Minute Start: 04:35 PM
Peak Hour Factor: 0.93

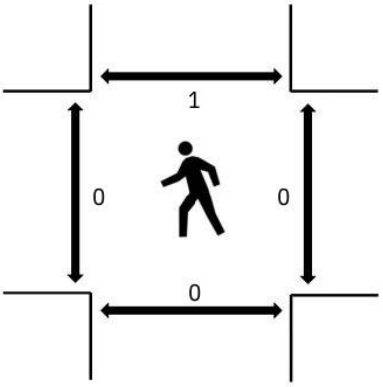
Motorized Vehicles



Heavy Vehicles



Pedestrians



(peak hour)

All Vehicle Volumes

Time	NB (SE 9th St)					SB (SE 9th St)					EB (OR 126)					WB (OR 126)					Totals	
Time	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	15min	1hr
04:00:00 PM	0	0	0	0	0	13	0	10	0	0	8	26	0	0	0	0	25	4	0	0		
04:05:00 PM	0	0	0	0	0	13	0	13	0	0	5	27	0	0	0	0	20	8	0	0		
04:10:00 PM	0	0	0	0	0	11	0	8	0	0	5	23	0	0	0	0	20	7	0	0	246	
04:15:00 PM	0	0	0	0	0	12	0	7	0	0	6	26	0	0	0	0	25	8	0	0	244	
04:20:00 PM	0	0	0	0	0	6	0	6	0	0	3	26	0	0	0	0	31	9	0	0	239	
04:25:00 PM	0	0	0	0	0	12	0	6	0	0	1	26	0	0	0	0	33	6	0	0	249	
04:30:00 PM	0	0	0	0	0	12	0	13	0	0	5	17	0	0	0	0	21	4	0	0	237	
04:35:00 PM	0	0	0	0	0	17	0	15	0	0	8	32	0	0	0	0	22	7	0	0	257	
04:40:00 PM	0	0	0	0	0	8	0	12	0	0	8	25	0	0	0	0	28	9	0	0	263	
04:45:00 PM	0	0	0	0	0	9	0	10	0	0	2	24	0	0	0	0	30	9	0	0	275	
04:50:00 PM	0	0	0	0	0	11	0	8	0	0	1	25	0	0	0	0	19	10	0	0	248	
04:55:00 PM	0	0	0	0	0	16	0	9	0	0	2	22	0	0	0	0	28	7	0	0	242	1000
05:00:00 PM	0	0	0	0	0	18	0	6	0	0	3	19	0	0	0	0	19	9	0	0	232	988
05:05:00 PM	0	0	0	0	0	16	0	7	0	0	11	28	0	0	0	0	36	10	0	0	266	1010
05:10:00 PM	0	0	0	0	0	14	0	8	0	0	4	25	0	0	0	0	27	10	0	0	270	1024
05:15:00 PM	0	0	0	0	0	14	0	5	0	0	3	20	0	0	0	0	19	9	0	0	266	1010
05:20:00 PM	0	0	0	0	0	11	0	8	0	0	6	24	0	0	0	0	27	10	0	0	244	1015
05:25:00 PM	0	0	0	0	0	8	0	7	0	0	7	26	0	0	0	0	23	4	0	0	231	1006
05:30:00 PM	0	0	0	0	0	6	0	7	0	0	3	16	0	0	0	0	17	8	0	0	218	991
05:35:00 PM	0	0	0	0	0	3	0	5	0	0	5	21	0	0	0	0	13	8	0	0	187	945
05:40:00 PM	0	0	0	0	0	2	0	4	0	0	3	27	0	0	0	0	21	4	0	0	173	916
05:45:00 PM	0	0	0	0	0	2	0	3	0	0	4	21	0	0	0	0	12	4	0	0	162	878
05:50:00 PM	0	0	0	0	0	6	0	3	0	0	3	19	0	0	0	0	15	11	0	0	164	861
05:55:00 PM	0	0	0	0	0	3	0	4	0	0	0	20	0	0	0	0	17	6	0	0	153	827

Car Volumes

Time	NB (SE 9th St)					SB (SE 9th St)					EB (OR 126)					WB (OR 126)					Totals	
Time	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	15min	1hr
04:00:00 PM	0	0	0	0	0	13	0	9	0	0	7	26	0	0	0	0	25	4	0	0		
04:05:00 PM	0	0	0	0	0	11	0	13	0	0	5	27	0	0	0	0	19	7	0	0		
04:10:00 PM	0	0	0	0	0	10	0	8	0	0	4	23	0	0	0	0	20	7	0	0	238	
04:15:00 PM	0	0	0	0	0	11	0	6	0	0	4	25	0	0	0	0	24	8	0	0	232	
04:20:00 PM	0	0	0	0	0	6	0	6	0	0	3	25	0	0	0	0	29	9	0	0	228	
04:25:00 PM	0	0	0	0	0	10	0	6	0	0	1	26	0	0	0	0	32	5	0	0	236	
04:30:00 PM	0	0	0	0	0	12	0	13	0	0	5	15	0	0	0	0	21	4	0	0	228	
04:35:00 PM	0	0	0	0	0	17	0	14	0	0	7	32	0	0	0	0	21	6	0	0	247	
04:40:00 PM	0	0	0	0	0	8	0	12	0	0	6	25	0	0	0	0	28	9	0	0	255	
04:45:00 PM	0	0	0	0	0	9	0	9	0	0	1	24	0	0	0	0	30	9	0	0	267	
04:50:00 PM	0	0	0	0	0	11	0	8	0	0	1	25	0	0	0	0	19	10	0	0	244	
04:55:00 PM	0	0	0	0	0	15	0	8	0	0	2	22	0	0	0	0	28	7	0	0	238	967
05:00:00 PM	0	0	0	0	0	18	0	6	0	0	3	19	0	0	0	0	19	9	0	0	230	957
05:05:00 PM	0	0	0	0	0	16	0	7	0	0	11	28	0	0	0	0	36	10	0	0	264	983
05:10:00 PM	0	0	0	0	0	14	0	8	0	0	4	25	0	0	0	0	26	9	0	0	268	997
05:15:00 PM	0	0	0	0	0	13	0	5	0	0	3	19	0	0	0	0	19	9	0	0	262	987
05:20:00 PM	0	0	0	0	0	11	0	7	0	0	6	23	0	0	0	0	25	10	0	0	236	991
05:25:00 PM	0	0	0	0	0	8	0	7	0	0	7	26	0	0	0	0	22	4	0	0	224	985
05:30:00 PM	0	0	0	0	0	6	0	6	0	0	3	16	0	0	0	0	17	8	0	0	212	971
05:35:00 PM	0	0	0	0	0	3	0	4	0	0	5	19	0	0	0	0	13	8	0	0	182	926
05:40:00 PM	0	0	0	0	0	2	0	4	0	0	3	26	0	0	0	0	21	4	0	0	168	898
05:45:00 PM	0	0	0	0	0	2	0	3	0	0	4	21	0	0	0	0	12	4	0	0	158	862
05:50:00 PM	0	0	0	0	0	6	0	3	0	0	3	19	0	0	0	0	15	11	0	0	163	845
05:55:00 PM	0	0	0	0	0	3	0	4	0	0	0	19	0	0	0	0	17	5	0	0	151	811

Truck Volumes

Time	NB (SE 9th St)					SB (SE 9th St)					EB (OR 126)					WB (OR 126)					Totals	
Time	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	15min	1hr
04:00:00 PM	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0		
04:05:00 PM	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	1	1	0	0		
04:10:00 PM	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	8	
04:15:00 PM	0	0	0	0	0	1	0	1	0	0	2	1	0	0	0	0	1	0	0	0	12	
04:20:00 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	2	0	0	0	11	
04:25:00 PM	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	1	1	0	0	13	
04:30:00 PM	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	9	
04:35:00 PM	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1	1	0	0	10	
04:40:00 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	8	
04:45:00 PM	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	8	
04:50:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	
04:55:00 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	4	33
05:00:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	31
05:05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	27
05:10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2	27
05:15:00 PM	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	4	23
05:20:00 PM	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	2	0	0	0	8	24
05:25:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	7	21
05:30:00 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	6	20
05:35:00 PM	0	0	0	0	0	0	0	1	0	0	0	2	0	0	0	0	0	0	0	0	5	19
05:40:00 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	5	18
05:45:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	16
05:50:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	16
05:55:00 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	2	16

Bike Volumes

Time	NB (SE 9th St)					SB (SE 9th St)					EB (OR 126)					WB (OR 126)					Totals	
Time	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	15min	1hr
04:00:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
04:05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
04:10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
04:15:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
04:20:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
04:25:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
04:30:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
04:35:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
04:40:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
04:45:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
04:50:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
04:55:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:20:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:25:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:35:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:40:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:50:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:55:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

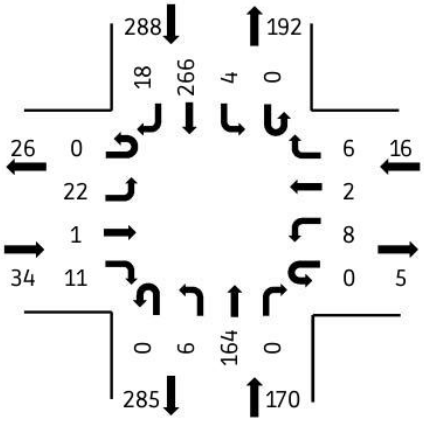
Pedestrian Volumes

Time	Pedestrians				Totals	
Time	NB	SB	EB	WB	15min	1hr
04:00:00 PM	0	0	0	0		
04:05:00 PM	0	0	0	0		
04:10:00 PM	0	0	0	0	0	
04:15:00 PM	0	0	0	0	0	
04:20:00 PM	0	0	0	0	0	
04:25:00 PM	0	0	0	0	0	
04:30:00 PM	0	0	0	0	0	
04:35:00 PM	0	0	0	0	0	
04:40:00 PM	0	0	0	0	0	
04:45:00 PM	0	0	0	0	0	
04:50:00 PM	0	0	0	0	0	
04:55:00 PM	0	1	0	0	1	1
05:00:00 PM	0	0	0	0	1	1
05:05:00 PM	0	0	0	0	1	1
05:10:00 PM	0	0	0	0	0	1
05:15:00 PM	0	0	0	0	0	1
05:20:00 PM	0	0	0	0	0	1
05:25:00 PM	0	0	0	0	0	1
05:30:00 PM	0	0	0	0	0	1
05:35:00 PM	0	0	0	0	0	1
05:40:00 PM	0	0	0	0	0	1
05:45:00 PM	0	0	0	0	0	1
05:50:00 PM	0	0	0	0	0	1
05:55:00 PM	0	0	0	0	0	0

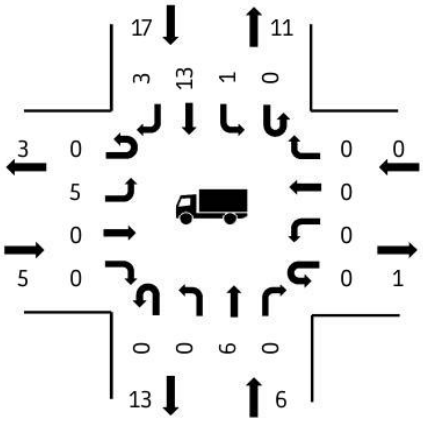
RallyTraffic

Location: NE 9th St & E Antler Ave
Date: 2024-02-01
Peak Hour Start: 04:00 PM
Peak 15 Minute Start: 04:00 PM
Peak Hour Factor: 0.83

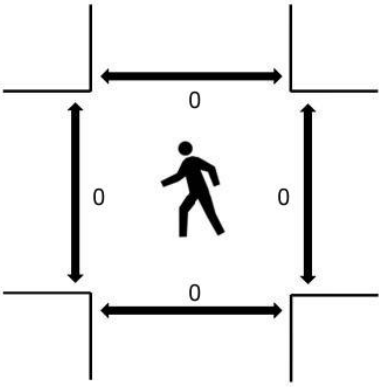
Motorized Vehicles



Heavy Vehicles



Pedestrians



(peak hour)

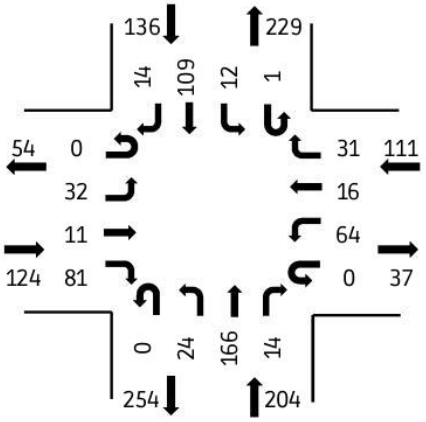
Total Vehicle Volumes

Time	Northbound					Southbound					Eastbound					Westbound					Totals	
Time	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	15min	1hr
04:00:00 PM	0	11	0	0	0	0	33	3	0	0	5	0	1	0	0	1	0	1	0	0		
04:05:00 PM	1	17	0	0	0	0	24	0	0	0	1	0	0	0	0	0	1	2	0	0		
04:10:00 PM	2	16	0	0	0	0	25	4	0	0	3	0	0	0	0	1	0	1	0	0	153	
04:15:00 PM	0	7	0	0	0	3	16	1	0	0	2	0	1	0	0	0	0	0	0	0	128	
04:20:00 PM	1	10	0	0	0	0	22	4	0	0	1	0	1	0	0	1	0	1	0	0	123	
04:25:00 PM	0	12	0	0	0	0	20	0	0	0	3	0	1	0	0	0	0	1	0	0	108	
04:30:00 PM	0	11	0	0	0	0	26	1	0	0	2	0	1	0	0	1	0	0	0	0	120	
04:35:00 PM	0	13	0	0	0	0	28	0	0	0	1	0	1	0	0	2	1	0	0	0	125	
04:40:00 PM	0	11	0	0	0	0	21	2	0	0	2	0	0	0	0	1	0	0	0	0	125	
04:45:00 PM	2	20	0	0	0	0	10	2	0	0	0	1	1	0	0	0	0	0	0	0	119	
04:50:00 PM	0	17	0	0	0	1	23	1	0	0	2	0	2	0	0	1	0	0	0	0	120	
04:55:00 PM	0	19	0	0	0	0	18	0	0	0	0	0	2	0	0	0	0	0	0	0	122	508
05:00:00 PM	2	12	1	0	0	0	23	3	0	0	0	0	0	0	0	0	0	2	0	0	129	496
05:05:00 PM	0	19	0	0	0	0	34	0	0	0	3	0	1	0	0	0	1	0	0	0	140	508
05:10:00 PM	1	13	0	0	0	0	21	1	0	0	0	0	1	0	0	0	0	1	0	0	139	494
05:15:00 PM	0	9	2	0	0	0	16	1	0	0	1	0	0	0	0	0	0	0	0	0	125	493
05:20:00 PM	1	9	0	0	0	0	19	2	0	0	3	0	2	0	0	0	0	1	0	0	104	489
05:25:00 PM	0	9	0	0	0	0	15	0	0	0	1	1	0	0	0	0	0	0	0	0	92	478
05:30:00 PM	0	15	0	0	0	0	16	3	0	0	0	0	0	0	0	0	1	0	0	0	98	471
05:35:00 PM	0	10	0	0	0	0	13	1	0	0	2	0	0	0	0	0	0	0	0	0	87	451
05:40:00 PM	0	15	0	0	0	0	14	0	0	0	2	0	0	0	0	0	1	0	0	0	93	446
05:45:00 PM	0	2	0	0	0	0	9	0	0	0	2	0	1	0	0	0	0	0	0	0	72	424
05:50:00 PM	0	5	1	0	0	0	11	1	0	0	1	0	0	0	0	0	2	0	0	0	67	398
05:55:00 PM	0	3	0	0	0	0	4	0	0	0	2	0	0	0	0	0	0	1	0	0	45	369

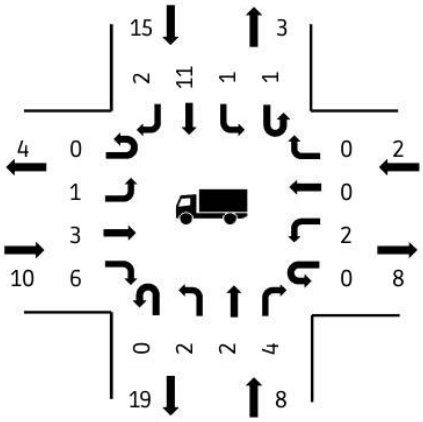
RallyTraffic

Location: NE 9th St & NE Hemlock Ave
Date: 2024-02-01
Peak Hour Start: 04:00 PM
Peak 15 Minute Start: 04:00 PM
Peak Hour Factor: 0.82

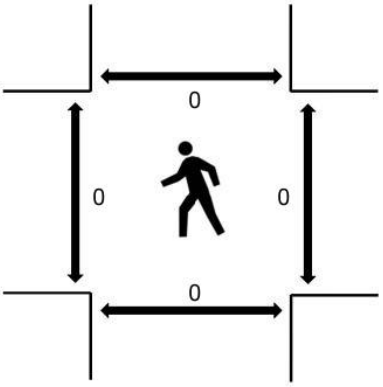
Motorized Vehicles



Heavy Vehicles



Pedestrians



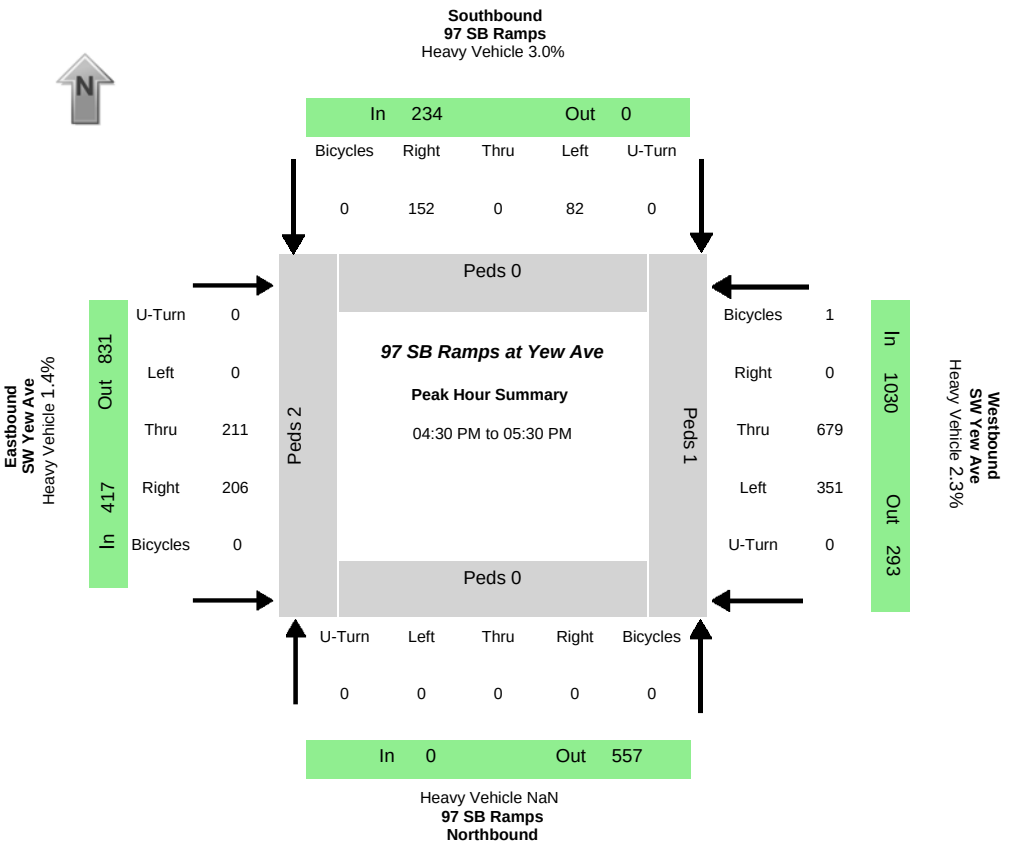
(peak hour)

Total Vehicle Volumes

Time	Northbound					Southbound					Eastbound					Westbound					Totals	
Time	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	15min	1hr
04:00:00 PM	3	15	0	0	0	1	17	1	0	0	2	2	11	0	0	4	1	7	0	0		
04:05:00 PM	1	16	1	0	0	1	6	2	0	0	3	0	9	0	0	7	3	1	0	0		
04:10:00 PM	3	16	2	0	0	3	11	3	0	0	2	2	6	0	0	8	2	4	0	0	176	
04:15:00 PM	4	7	0	0	0	0	5	2	0	0	5	0	5	0	0	1	1	1	0	0	143	
04:20:00 PM	1	13	1	0	0	2	13	1	0	0	5	1	6	0	0	3	1	3	0	0	143	
04:25:00 PM	1	19	0	0	0	0	6	0	0	0	2	0	3	0	0	5	1	0	0	0	118	
04:30:00 PM	0	12	0	0	0	0	10	0	0	0	1	0	8	0	0	9	2	4	0	0	133	
04:35:00 PM	2	8	1	0	0	1	11	1	0	0	1	1	6	0	0	11	0	2	0	0	128	
04:40:00 PM	5	17	2	0	0	2	7	0	1	0	2	1	8	0	0	3	1	3	0	0	143	
04:45:00 PM	3	13	1	0	0	0	8	3	0	0	5	1	5	0	0	2	1	3	0	0	142	
04:50:00 PM	1	10	5	0	0	2	8	1	0	0	2	3	7	0	0	10	2	2	0	0	150	
04:55:00 PM	0	20	1	0	0	0	7	0	0	0	2	0	7	0	0	1	1	1	0	0	138	575
05:00:00 PM	0	12	2	0	0	1	9	0	0	0	1	0	8	0	0	7	2	3	0	0	138	556
05:05:00 PM	1	16	0	0	0	0	18	0	0	0	3	1	8	0	0	9	3	8	0	0	152	573
05:10:00 PM	0	21	0	0	0	0	9	1	0	0	1	0	3	0	0	1	1	5	0	0	154	553
05:15:00 PM	1	8	0	0	0	0	9	1	0	0	3	2	8	0	0	0	1	4	0	0	146	559
05:20:00 PM	1	9	0	0	0	0	7	0	0	0	1	0	5	0	0	6	1	1	0	0	110	540
05:25:00 PM	0	11	0	0	0	0	7	0	0	0	0	1	4	0	0	2	0	1	0	0	94	529
05:30:00 PM	2	14	1	0	0	0	11	0	0	0	2	1	1	0	0	2	1	2	0	0	94	520
05:35:00 PM	2	11	0	0	0	1	6	0	0	0	6	1	4	0	0	3	0	2	0	0	99	511
05:40:00 PM	0	12	2	0	0	0	5	0	0	0	3	2	5	0	0	1	0	1	0	0	104	490
05:45:00 PM	0	7	0	0	0	0	7	1	0	0	3	1	4	0	0	0	3	3	0	0	96	474
05:50:00 PM	1	4	0	0	0	0	9	1	0	0	6	0	1	0	0	1	0	0	0	0	83	444
05:55:00 PM	0	6	0	0	0	0	1	0	0	0	2	0	0	0	0	0	0	2	0	0	63	415

K-D-N
KEY DATA NETWORK

Data Provided by K-D-N.com 503-594-4224	
N/S street	*97 SB Ramps*
E/W street	*SW Yew Ave*
City, State	Redmond OR
Site Notes	
Location	44.243 - -121.19389
Start Date	Tuesday, April 12, 2022
Start Time	04:00:00 PM
Weather	
Study ID #	
Peak Hour Start	04:30:00 PM
Peak 15 Min Start	05:00:00 PM
PHF (15-Min Int)	0.92



Peak-Hour Volumes (PHV)

Northbound				Southbound				Eastbound				Westbound				Entering				Leaving			
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	NB	SB	EB	WB	NB	SB	EB	WB
0	0	0	0	82	0	152	0	0	211	206	0	351	679	0	0	0	234	417	1030	557	0	831	293

Percent Heavy Vehicles

0.0%	0.0%	0.0%	0.0%	4.9%	0.0%	2.0%	0.0%	0.0%	1.4%	1.5%	0.0%	2.3%	2.4%	0.0%	0.0%	NaN	3.0%	1.4%	2.3%	2.0%	0.0%	2.3%	2.4%

PHV- Bicycles

Northbound				Southbound				Eastbound				Westbound				
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	**Sum**
0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1

PHV - Pedestrians

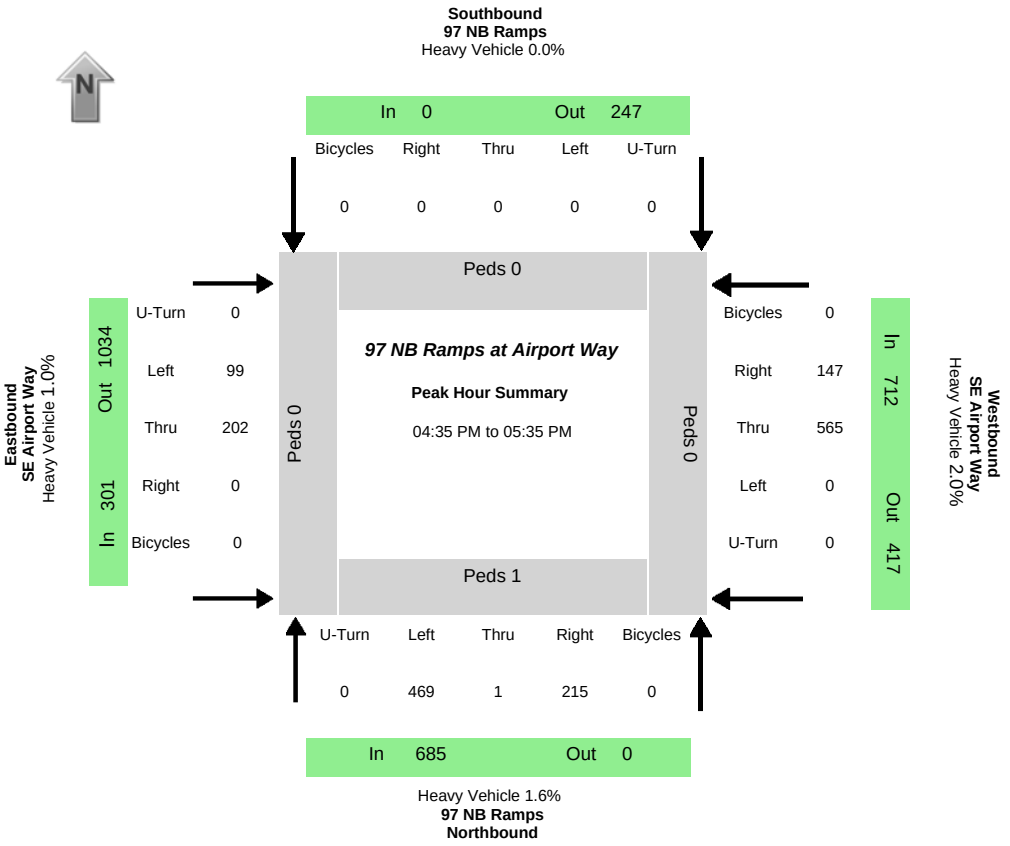
in Crosswalk				
NB	SB	EB	WB	**Sum**
0	0	2	1	3

All Vehicle Volumes

	Northbound 97 SB Ramps				Southbound 97 SB Ramps				Eastbound SW Yew Ave				Westbound SW Yew Ave				15 Min	1 HR
Time	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	Sum
04:00:00 PM	0	0	0	0	8	0	10	0	0	15	20	0	24	45	0	0		
04:05:00 PM	0	0	0	0	13	0	12	0	0	14	18	0	25	55	0	0		
04:10:00 PM	0	0	0	0	7	0	19	0	0	23	27	0	22	29	0	0	386	
04:15:00 PM	0	0	0	0	7	0	12	0	0	14	11	0	26	42	0	0	376	
04:20:00 PM	0	0	0	0	13	0	14	0	0	7	19	0	27	58	0	0	377	
04:25:00 PM	0	0	0	0	5	0	15	0	0	16	12	0	24	48	0	0	370	
04:30:00 PM	0	0	0	0	7	0	11	0	0	22	6	0	31	40	0	0	375	
04:35:00 PM	0	0	0	0	6	0	10	0	0	20	10	0	29	61	0	0	373	
04:40:00 PM	0	0	0	0	12	0	15	0	0	16	17	0	39	45	0	0	397	
04:45:00 PM	0	0	0	0	4	0	11	0	0	12	17	0	26	51	0	0	401	
04:50:00 PM	0	0	0	0	4	0	11	0	0	13	16	0	35	67	0	0	411	
04:55:00 PM	0	0	0	0	7	0	13	0	0	9	18	0	26	64	0	0	404	1557
05:00:00 PM	0	0	0	0	7	0	18	0	0	19	16	0	33	55	0	0	431	1583
05:05:00 PM	0	0	0	0	11	0	9	0	0	19	23	0	29	67	0	0	443	1604
05:10:00 PM	0	0	0	0	4	0	13	0	0	23	26	0	34	49	0	0	455	1626
05:15:00 PM	0	0	0	0	6	0	18	0	0	27	16	0	34	41	0	0	449	1656
05:20:00 PM	0	0	0	0	9	0	8	0	0	15	22	0	18	68	0	0	431	1658
05:25:00 PM	0	0	0	0	5	0	15	0	0	16	19	0	17	71	0	0	425	1681
05:30:00 PM	0	0	0	0	3	0	6	0	0	9	17	0	16	61	0	0	395	1676
05:35:00 PM	0	0	0	0	9	0	14	0	0	10	15	0	11	60	0	0	374	1659
05:40:00 PM	0	0	0	0	2	0	8	0	0	15	12	0	12	58	0	0	338	1622
05:45:00 PM	0	0	0	0	6	0	15	0	0	17	8	0	17	51	0	0	340	1615
05:50:00 PM	0	0	0	0	8	0	11	0	0	21	11	0	9	49	0	0	330	1578
05:55:00 PM	0	0	0	0	9	0	9	0	0	15	11	0	6	46	0	0	319	1537

K-D-N
KEY DATA NETWORK

Data Provided by K-D-N.com 503-594-4224	
N/S street	*97 NB Ramps*
E/W street	*SE Airport Way*
City, State	Redmond OR
Site Notes	
Location	44.24186 - -121.19232
Start Date	Thursday, April 14, 2022
Start Time	04:00:00 PM
Weather	
Study ID #	
Peak Hour Start	04:35:00 PM
Peak 15 Min Start	05:10:00 PM
PHF (15-Min Int)	0.94



Peak-Hour Volumes (PHV)

Northbound				Southbound				Eastbound				Westbound				Entering				Leaving			
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	NB	SB	EB	WB	NB	SB	EB	WB
469	1	215	0	0	0	0	0	99	202	0	0	0	565	147	0	685	0	301	712	0	247	1034	417

Percent Heavy Vehicles

1.9%	0.0%	0.9%	0.0%	0.0%	0.0%	0.0%	0.0%	1.0%	1.0%	0.0%	0.0%	0.0%	2.1%	1.4%	0.0%	1.6%	0.0%	1.0%	2.0%	NaN	1.2%	2.0%	1.0%

PHV- Bicycles

Northbound				Southbound				Eastbound				Westbound				
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	**Sum**
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PHV - Pedestrians

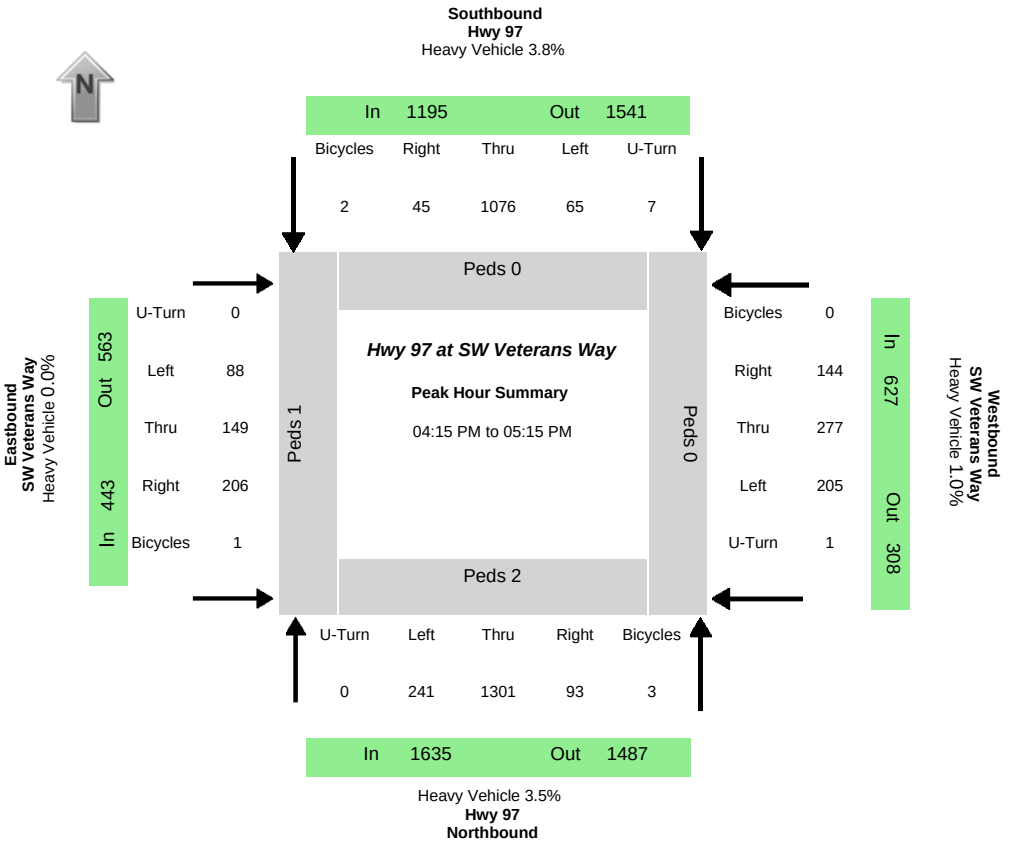
in Crosswalk				
NB	SB	EB	WB	**Sum**
1	0	0	0	1

All Vehicle Volumes

	Northbound 97 NB Ramps				Southbound 97 NB Ramps				Eastbound SE Airport Way				Westbound SE Airport Way				15 Min	1 HR
Time	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	Sum
04:00:00 PM	48	0	21	0	0	0	0	0	2	22	0	0	0	44	5	0		
04:05:00 PM	41	0	18	0	0	0	0	0	7	12	0	0	0	33	19	0		
04:10:00 PM	22	0	22	0	0	0	0	0	9	23	0	0	0	38	13	0	399	
04:15:00 PM	30	1	14	0	0	0	0	0	6	29	0	0	0	41	12	0	390	
04:20:00 PM	38	0	18	0	0	0	0	0	8	20	0	0	0	43	11	0	398	
04:25:00 PM	50	0	26	0	0	0	0	0	5	21	0	0	0	41	7	0	421	
04:30:00 PM	24	0	18	0	0	0	0	0	5	22	0	0	0	43	20	0	420	
04:35:00 PM	32	0	17	0	0	0	0	0	9	21	0	0	0	55	14	0	430	
04:40:00 PM	35	0	22	0	0	0	0	0	5	14	0	0	0	45	10	0	411	
04:45:00 PM	34	0	18	0	0	0	0	0	3	11	0	0	0	45	11	0	401	
04:50:00 PM	44	0	25	0	0	0	0	0	8	16	0	0	0	39	17	0	402	
04:55:00 PM	35	0	26	0	0	0	0	0	9	13	0	0	0	34	12	0	400	1631
05:00:00 PM	38	0	15	0	0	0	0	0	4	16	0	0	0	48	18	0	417	1628
05:05:00 PM	35	0	17	0	0	0	0	0	11	19	0	0	0	53	8	0	411	1641
05:10:00 PM	50	0	16	0	0	0	0	0	11	22	0	0	0	47	14	0	442	1674
05:15:00 PM	34	1	17	0	0	0	0	0	9	20	0	0	0	53	11	0	448	1686
05:20:00 PM	38	0	12	0	0	0	0	0	9	19	0	0	0	60	9	0	452	1695
05:25:00 PM	53	0	19	0	0	0	0	0	6	16	0	0	0	42	12	0	440	1693
05:30:00 PM	41	0	11	0	0	0	0	0	15	15	0	0	0	44	11	0	432	1698
05:35:00 PM	39	0	13	0	0	0	0	0	7	26	0	0	0	28	7	0	405	1670
05:40:00 PM	38	0	11	0	0	0	0	0	7	14	0	0	0	29	2	0	358	1640
05:45:00 PM	44	0	18	0	0	0	0	0	12	17	0	0	0	20	5	0	337	1634
05:50:00 PM	33	0	18	0	0	0	0	0	8	15	0	0	0	34	5	0	330	1598
05:55:00 PM	33	0	15	0	0	0	0	0	10	14	0	0	0	23	13	0	337	1577

K-D-N
KEY DATA NETWORK

Data Provided by K-D-N.com 503-594-4224	
N/S street	*Hwy 97*
E/W street	*SW Veterans Way*
City, State	Redmond OR
Site Notes	
Location	44.26311 - -121.17694
Start Date	Thursday, May 05, 2022
Start Time	04:00:00 PM
Weather	
Study ID #	
Peak Hour Start	04:15:00 PM
Peak 15 Min Start	05:00:00 PM
PHF (15-Min Int)	0.94



Peak-Hour Volumes (PHV)

Northbound				Southbound				Eastbound				Westbound				Entering				Leaving			
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	NB	SB	EB	WB	NB	SB	EB	WB
241	1301	93	0	65	1076	45	7	88	149	206	0	205	277	144	1	1635	1193	443	627	1487	1540	563	308

Percent Heavy Vehicles

0.0%	4.2%	2.2%	0.0%	7.7%	3.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.7%	2.8%	0.0%	3.5%	3.9%	0.0%	1.0%	2.8%	3.8%	0.4%	2.3%

PHV- Bicycles

Northbound				Southbound				Eastbound				Westbound				
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	**Sum**
1	0	2	0	1	0	1	0	1	0	0	0	0	0	0	0	6

PHV - Pedestrians

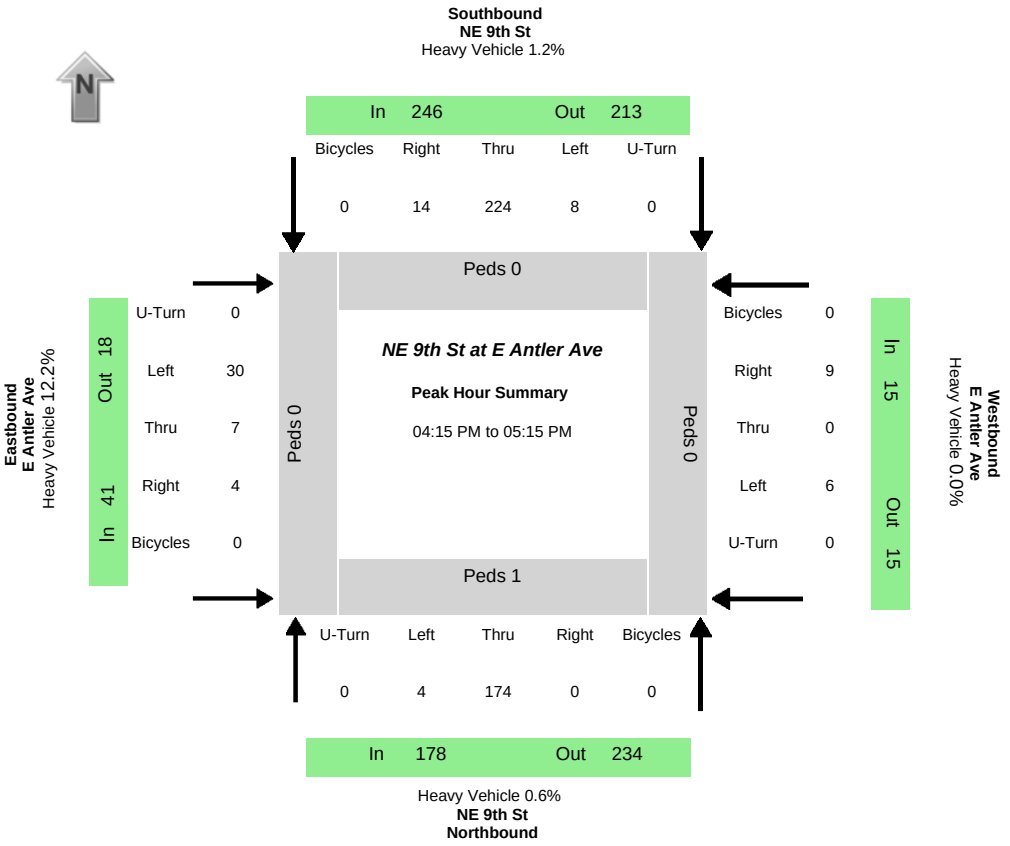
in Crosswalk				
NB	SB	EB	WB	**Sum**
2	0	1	0	3

All Vehicle Volumes

	Northbound Hwy 97				Southbound Hwy 97				Eastbound SW Veterans Way				Westbound SW Veterans Way				15 Min	1 HR
Time	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	Sum
04:00:00 PM	16	128	11	0	5	105	5	0	4	5	13	0	8	14	6	0		
04:05:00 PM	19	74	10	0	3	75	3	0	9	18	25	0	26	35	19	0		
04:10:00 PM	27	111	6	0	11	78	4	0	7	8	10	0	18	21	23	0	960	
04:15:00 PM	16	108	14	0	5	113	4	0	8	11	9	0	11	18	6	0	963	
04:20:00 PM	22	102	7	0	5	84	3	2	9	11	16	0	13	18	7	0	946	
04:25:00 PM	17	101	6	0	12	73	1	1	11	17	17	0	20	29	12	0	939	
04:30:00 PM	22	122	4	0	7	118	4	2	9	13	17	0	14	25	12	0	985	
04:35:00 PM	24	95	5	0	1	55	4	0	4	18	16	0	25	21	11	0	965	
04:40:00 PM	19	132	7	0	4	96	4	0	6	11	13	0	15	22	14	0	991	
04:45:00 PM	24	112	12	0	5	90	2	0	5	11	19	0	13	23	12	0	950	
04:50:00 PM	16	107	8	0	3	93	5	0	10	10	18	0	16	15	15	0	987	
04:55:00 PM	15	96	4	0	1	74	3	1	7	15	21	0	17	25	8	1	932	3822
05:00:00 PM	24	120	11	0	6	95	4	1	6	6	27	0	16	26	12	0	958	3856
05:05:00 PM	21	109	7	0	6	112	5	0	4	11	10	0	18	24	17	0	986	3884
05:10:00 PM	21	97	8	0	10	73	6	0	9	15	23	0	27	31	18	0	1036	3898
05:15:00 PM	24	119	4	0	5	77	3	0	7	5	23	0	16	16	10	0	991	3884
05:20:00 PM	17	86	9	0	4	81	2	0	6	3	21	0	15	20	11	0	922	3860
05:25:00 PM	7	73	4	0	8	65	3	0	9	14	13	0	8	19	12	0	819	3778
05:30:00 PM	23	112	9	0	13	92	4	3	9	4	18	0	12	17	11	0	837	3736
05:35:00 PM	21	125	6	0	5	98	4	1	8	7	16	0	14	12	12	0	891	3786
05:40:00 PM	19	120	11	0	4	86	1	1	8	8	12	0	17	22	8	0	973	3760
05:45:00 PM	23	85	9	0	3	61	1	0	6	13	18	0	8	12	9	0	894	3680
05:50:00 PM	19	106	8	0	10	77	2	0	3	7	10	0	4	7	4	0	822	3621
05:55:00 PM	17	98	5	0	1	68	7	0	12	9	11	0	14	9	5	0	761	3589

K-D-N
KEY DATA NETWORK

Data Provided by K-D-N.com 503-594-4224	
N/S street	*NE 9th St*
E/W street	*E Antler Ave*
City, State	Redmond OR
Site Notes	
Location	44.276554 - -121.158820
Start Date	Thursday, April 01, 2021
Start Time	04:00:00 PM
Weather	
Study ID #	
Peak Hour Start	04:15:00 PM
Peak 15 Min Start	04:30:00 PM
PHF (15-Min Int)	0.91



Peak-Hour Volumes (PHV)																							
Northbound				**Southbound**				**Eastbound**				**Westbound**				**Entering**				**Leaving**			
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	NB	SB	EB	WB	NB	SB	EB	WB
4	174	0	0	8	224	14	0	30	7	4	0	6	0	9	0	178	246	41	15	234	213	18	15
Percent Heavy Vehicles																							
0.0%	0.6%	0.0%	0.0%	25.0%	0.4%	0.0%	0.0%	13.3%	0.0%	25.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.6%	1.2%	12.2%	0.0%	0.9%	2.3%	0.0%	13.3%

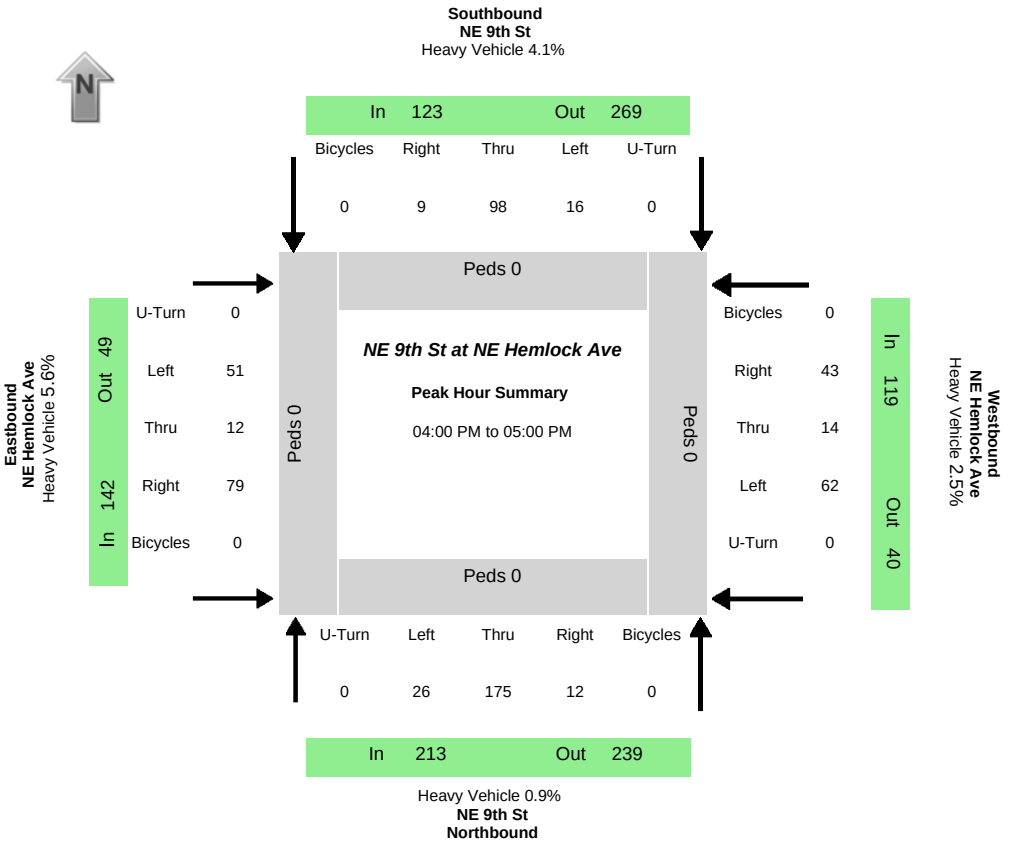
PHV- Bicycles																	PHV - Pedestrians				
Northbound				**Southbound**				**Eastbound**				**Westbound**					in Crosswalk				
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	**Sum**	NB	SB	EB	WB	**Sum**
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1

All Vehicle Volumes

	Northbound NE 9th St				**Southbound** NE 9th St				**Eastbound** E Antler Ave				**Westbound** E Antler Ave				15 Min	1 HR
Time	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	Sum
04:00:00 PM	0	13	0	0	0	27	0	0	4	0	0	0	0	0	0	0		
04:05:00 PM	0	11	0	0	0	23	3	0	2	0	3	0	1	0	2	0		
04:10:00 PM	0	15	0	0	0	14	1	0	2	0	1	0	1	0	1	0	124	
04:15:00 PM	0	10	0	0	1	15	3	0	0	1	0	0	0	0	0	0	110	
04:20:00 PM	0	9	0	0	0	21	0	0	1	0	0	0	1	0	2	0	99	
04:25:00 PM	1	11	0	0	3	18	0	0	2	1	0	0	0	0	1	0	101	
04:30:00 PM	0	9	0	0	1	27	4	0	4	1	1	0	0	0	1	0	119	
04:35:00 PM	1	19	0	0	1	18	0	0	3	0	0	0	0	0	0	0	127	
04:40:00 PM	0	16	0	0	0	17	0	0	6	1	1	0	0	0	1	0	132	
04:45:00 PM	0	18	0	0	0	22	1	0	2	0	0	0	0	0	1	0	128	
04:50:00 PM	0	13	0	0	0	19	3	0	2	1	0	0	2	0	0	0	126	
04:55:00 PM	1	15	0	0	1	16	0	0	2	1	0	0	1	0	0	0	121	478
05:00:00 PM	1	17	0	0	0	16	0	0	3	1	0	0	0	0	1	0	116	473
05:05:00 PM	0	21	0	0	0	17	1	0	3	0	1	0	1	0	2	0	122	474
05:10:00 PM	0	16	0	0	1	18	2	0	2	0	1	0	1	0	0	0	126	480
05:15:00 PM	0	8	0	0	1	12	2	0	3	0	0	0	0	0	1	0	114	477
05:20:00 PM	0	8	0	0	0	17	1	0	3	0	0	0	0	0	0	0	97	472
05:25:00 PM	0	7	0	0	1	15	1	0	1	1	0	0	0	0	0	0	82	461
05:30:00 PM	0	15	0	0	1	13	1	0	2	0	1	0	0	0	1	0	89	447
05:35:00 PM	0	6	1	0	1	9	0	0	3	0	0	0	1	0	0	0	81	426
05:40:00 PM	0	6	0	0	0	14	0	0	1	0	1	0	0	0	1	0	78	407
05:45:00 PM	0	14	1	0	1	7	1	0	0	0	1	0	0	0	0	0	69	388
05:50:00 PM	1	8	0	0	0	8	0	0	1	0	1	0	0	0	2	1	70	370
05:55:00 PM	0	9	0	0	0	9	1	0	2	1	1	0	1	0	1	0	72	358

K-D-N
KEY DATA NETWORK

Data Provided by K-D-N.com 503-594-4224	
N/S street	*NE 9th St*
E/W street	*NE Hemlock Ave*
City, State	Redmond OR
Site Notes	
Location	44.283804 - -121.158847
Start Date	Thursday, April 01, 2021
Start Time	04:00:00 PM
Weather	
Study ID #	
Peak Hour Start	04:00:00 PM
Peak 15 Min Start	04:00:00 PM
PHF (15-Min Int)	0.89



Peak-Hour Volumes (PHV)																								
Northbound				Southbound				Eastbound				Westbound				Entering				Leaving				
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	NB	SB	EB	WB	NB	SB	EB	WB	
26	175	12	0	16	98	9	0	51	12	79	0	62	14	43	0	213	123	142	119	239	269	49	40	

Percent Heavy Vehicles																								
3.8%	0.0%	8.3%	0.0%	12.5%	2.0%	11.1%	0.0%	2.0%	25.0%	5.1%	0.0%	1.6%	0.0%	4.7%	0.0%	0.9%	4.1%	5.6%	2.5%	2.9%	1.1%	4.1%	15.0%	

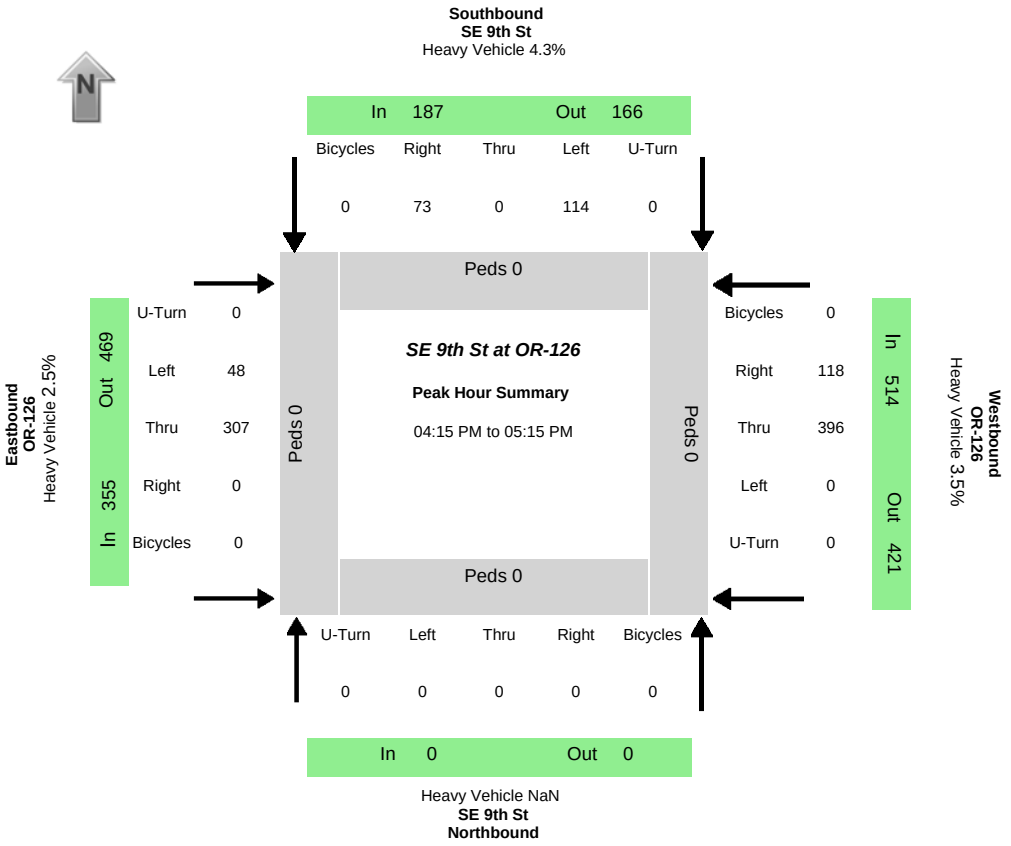
PHV- Bicycles																	PHV - Pedestrians					
Northbound				Southbound				Eastbound				Westbound					in Crosswalk					
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	NB	SB	EB	WB	Sum	
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

All Vehicle Volumes

	Northbound NE 9th St				Southbound NE 9th St				Eastbound NE Hemlock Ave				Westbound NE Hemlock Ave				15 Min	1 HR
Time	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	Sum
04:00:00 PM	1	19	0	0	1	6	1	0	5	3	17	0	9	0	6	0		
04:05:00 PM	3	18	1	0	3	12	0	0	5	3	7	0	7	0	5	0		
04:10:00 PM	2	15	1	0	0	6	0	0	1	0	5	0	2	1	2	0	167	
04:15:00 PM	1	6	1	0	2	10	1	0	4	0	4	0	2	4	2	0	136	
04:20:00 PM	0	15	1	0	2	14	0	0	3	0	7	0	2	3	3	0	122	
04:25:00 PM	2	10	1	0	2	6	0	0	0	0	4	0	7	2	3	0	124	
04:30:00 PM	4	12	0	0	0	5	2	0	3	3	6	0	14	1	6	0	143	
04:35:00 PM	0	15	0	0	1	6	1	0	5	1	9	0	3	1	1	0	136	
04:40:00 PM	1	20	1	0	2	7	0	0	4	0	4	0	3	0	3	0	144	
04:45:00 PM	4	16	1	0	2	11	0	0	7	0	4	0	5	1	7	0	146	
04:50:00 PM	6	14	3	0	1	9	3	0	5	2	5	0	5	0	5	0	161	
04:55:00 PM	2	15	2	0	0	6	1	0	9	0	7	0	3	1	0	0	162	597
05:00:00 PM	1	13	0	0	1	8	1	0	5	0	8	0	1	0	4	0	146	571
05:05:00 PM	2	28	2	0	0	5	0	0	6	0	6	0	7	3	1	0	148	567
05:10:00 PM	1	19	1	0	1	10	0	0	6	1	6	0	4	0	0	0	151	581
05:15:00 PM	2	10	1	0	1	7	1	0	3	0	4	0	3	0	0	0	141	576
05:20:00 PM	1	10	0	0	0	8	1	0	2	1	7	0	3	0	3	0	117	562
05:25:00 PM	1	11	1	0	1	9	0	0	3	1	6	0	0	0	1	0	102	559
05:30:00 PM	4	12	0	0	2	12	0	0	5	0	0	0	2	0	1	0	108	541
05:35:00 PM	2	9	0	0	0	4	0	0	1	1	2	0	3	1	1	0	96	522
05:40:00 PM	0	6	0	0	0	8	1	0	2	0	3	0	2	2	0	0	86	501
05:45:00 PM	1	13	1	0	1	6	0	0	2	0	2	0	0	0	1	0	75	470
05:50:00 PM	3	6	0	0	1	5	0	0	2	0	2	0	0	1	0	0	71	432
05:55:00 PM	2	9	1	0	0	3	1	0	1	0	4	0	2	0	0	0	70	409

K-D-N
KEY DATA NETWORK

Data Provided by K-D-N.com 503-594-4224	
N/S street	*SE 9th St*
E/W street	*OR-126*
City, State	Redmond OR
Site Notes	
Location	44.269331 - -121.159227
Start Date	Thursday, April 01, 2021
Start Time	04:00:00 PM
Weather	
Study ID #	
Peak Hour Start	04:15:00 PM
Peak 15 Min Start	04:35:00 PM
PHF (15-Min Int)	0.92



Peak-Hour Volumes (PHV)

Northbound				Southbound				Eastbound				Westbound				Entering				Leaving			
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	NB	SB	EB	WB	NB	SB	EB	WB
0	0	0	0	114	0	73	0	48	307	0	0	0	396	118	0	0	187	355	514	0	166	469	421

Percent Heavy Vehicles

0.0%	0.0%	0.0%	0.0%	4.4%	0.0%	4.1%	0.0%	0.0%	2.9%	0.0%	0.0%	0.0%	4.3%	0.8%	0.0%	NaN	4.3%	2.5%	3.5%	NaN	0.6%	4.3%	3.3%

PHV- Bicycles

Northbound				Southbound				Eastbound				Westbound				
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PHV - Pedestrians

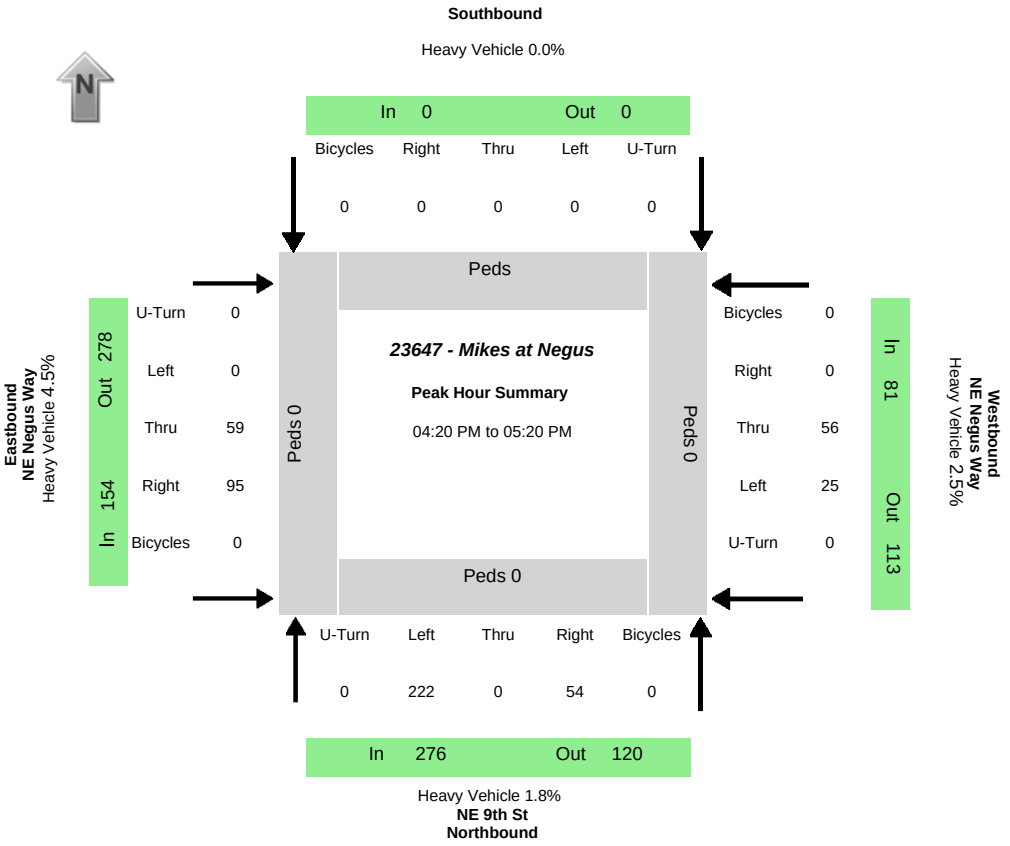
in Crosswalk				
NB	SB	EB	WB	Sum
0	0	0	0	0

All Vehicle Volumes

	Northbound SE 9th St				Southbound SE 9th St				Eastbound OR-126				Westbound OR-126				15 Min	1 HR
Time	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	Sum
04:00:00 PM	0	0	0	0	9	0	9	0	5	29	0	0	0	33	10	0		
04:05:00 PM	0	0	0	0	11	0	11	0	2	25	0	0	0	13	10	0		
04:10:00 PM	0	0	0	0	13	0	3	0	4	22	0	0	0	23	9	0	241	
04:15:00 PM	0	0	0	0	9	0	4	0	2	28	0	0	0	24	8	0	221	
04:20:00 PM	0	0	0	0	12	0	2	0	4	31	0	0	0	28	4	0	230	
04:25:00 PM	0	0	0	0	12	0	6	0	4	25	0	0	0	24	5	0	232	
04:30:00 PM	0	0	0	0	5	0	15	0	2	24	0	0	0	32	7	0	242	
04:35:00 PM	0	0	0	0	13	0	3	0	7	25	0	0	0	40	12	0	261	
04:40:00 PM	0	0	0	0	11	0	5	0	5	27	0	0	0	35	9	0	277	
04:45:00 PM	0	0	0	0	13	0	3	0	2	19	0	0	0	40	18	0	287	
04:50:00 PM	0	0	0	0	10	0	7	0	3	21	0	0	0	39	9	0	276	
04:55:00 PM	0	0	0	0	5	0	11	0	3	21	0	0	0	35	10	0	269	1019
05:00:00 PM	0	0	0	0	7	0	4	0	4	33	0	0	0	40	13	0	275	1025
05:05:00 PM	0	0	0	0	11	0	6	0	9	22	0	0	0	27	13	0	274	1041
05:10:00 PM	0	0	0	0	6	0	7	0	3	31	0	0	0	32	10	0	278	1056
05:15:00 PM	0	0	0	0	10	0	1	0	3	28	0	0	0	21	3	0	243	1047
05:20:00 PM	0	0	0	0	6	0	9	0	1	28	0	0	0	37	7	0	243	1054
05:25:00 PM	0	0	0	0	6	0	3	0	4	37	0	0	0	21	6	0	231	1055
05:30:00 PM	0	0	0	0	9	0	3	0	2	25	0	0	0	24	7	0	235	1040
05:35:00 PM	0	0	0	0	3	0	6	0	2	23	0	0	0	22	5	0	208	1001
05:40:00 PM	0	0	0	0	6	0	9	0	3	25	0	0	0	24	5	0	203	981
05:45:00 PM	0	0	0	0	5	0	5	0	7	17	0	0	0	18	4	0	189	942
05:50:00 PM	0	0	0	0	4	0	5	0	4	17	0	0	0	18	6	0	182	907
05:55:00 PM	0	0	0	0	4	0	3	0	3	25	0	0	0	18	7	0	170	882

K-D-N
KEY DATA NETWORK

Data Provided by K-D-N.com 503-594-4224	
N/S street	*NE 9th St*
E/W street	*NE Negus Way*
City, State	Redmond OR
Site Notes	
Location	44.291029 - -121.158918
Start Date	Wednesday, June 09, 2021
Start Time	04:00:00 PM
Weather	
Study ID #	
Peak Hour Start	04:20:00 PM
Peak 15 Min Start	04:55:00 PM
PHF (15-Min Int)	0.81



Peak-Hour Volumes (PHV)																								
Northbound				Southbound				Eastbound				Westbound				Entering				Leaving				
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	NB	SB	EB	WB	NB	SB	EB	WB	
222	0	54	0	0	0	0	0	0	59	95	0	25	56	0	0	276	0	154	81	120	0	278	113	
Percent Heavy Vehicles																								
2.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	3.4%	5.3%	0.0%	8.0%	0.0%	0.0%	0.0%	1.8%	0.0%	4.5%	2.5%	5.8%	0.0%	1.8%	1.8%	

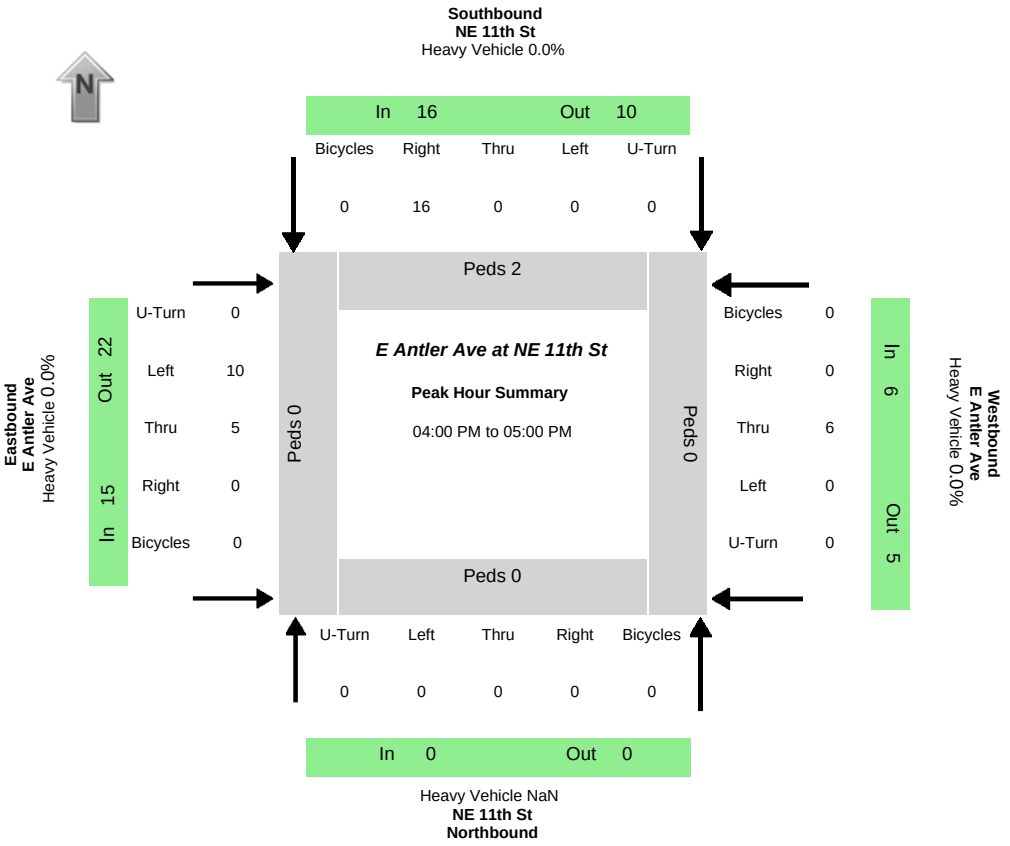
PHV- Bicycles																	PHV - Pedestrians					
Northbound				Southbound				Eastbound				Westbound					in Crosswalk					
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	NB	SB	EB	WB	Sum	
0		0	0						0	0	0	0	0		0	0	0		0	0	0	

All Vehicle Volumes

	Northbound NE 9th St				Southbound				Eastbound NE Negus Way				Westbound NE Negus Way				15 Min	1 HR
Time	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	Sum
04:00:00 PM	20		2	0						3	4	0	3	3		0		
04:05:00 PM	21		5	0						6	7	0	2	2		0		
04:10:00 PM	18		4	0						6	6	0	3	4		0	119	
04:15:00 PM	18		3	0						2	8	0	6	2		0	123	
04:20:00 PM	20		4	0						8	4	0	2	3		0	121	
04:25:00 PM	16		4	0						4	10	0	3	6		0	123	
04:30:00 PM	7		2	0						2	5	0	1	6		0	107	
04:35:00 PM	21		7	0						2	7	0	2	3		0	108	
04:40:00 PM	20		2	0						3	6	0	0	2		0	98	
04:45:00 PM	18		3	0						5	9	0	2	7		0	119	
04:50:00 PM	17		4	0						4	7	0	2	2		0	113	
04:55:00 PM	19		5	0						6	6	0	9	9		0	134	474
05:00:00 PM	24		7	0						4	10	0	1	5		0	141	490
05:05:00 PM	24		6	0						7	12	0	1	3		0	158	500
05:10:00 PM	21		5	0						9	8	0	0	4		0	151	506
05:15:00 PM	15		5	0						5	11	0	2	6		0	144	511
05:20:00 PM	10		4	0						6	6	0	0	2		0	119	498
05:25:00 PM	7		3	0						6	5	0	0	3		0	96	479
05:30:00 PM	11		2	0						4	10	0	1	3		0	83	487
05:35:00 PM	6		3	0						4	5	0	3	4		0	80	470
05:40:00 PM	6		4	0						5	7	0	3	5		0	86	467
05:45:00 PM	8		4	0						6	6	0	0	4		0	83	451
05:50:00 PM	8		4	0						5	6	0	0	3		0	84	441
05:55:00 PM	5		3	0						1	5	0	0	1		0	69	402

K-D-N
KEY DATA NETWORK

Data Provided by K-D-N.com 503-594-4224	
N/S street	*NE 11th St*
E/W street	*E Antler Ave*
City, State	Redmond OR
Site Notes	
Location	44.276627 - -121.156247
Start Date	Thursday, April 01, 2021
Start Time	04:00:00 PM
Weather	
Study ID #	
Peak Hour Start	04:00:00 PM
Peak 15 Min Start	04:00:00 PM
PHF (15-Min Int)	0.62



Peak-Hour Volumes (PHV)																								
Northbound				Southbound				Eastbound				Westbound				Entering				Leaving				
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	NB	SB	EB	WB	NB	SB	EB	WB	
0	0	0	0	0	0	16	0	10	5	0	0	0	6	0	0	0	16	15	6	0	10	22	5	

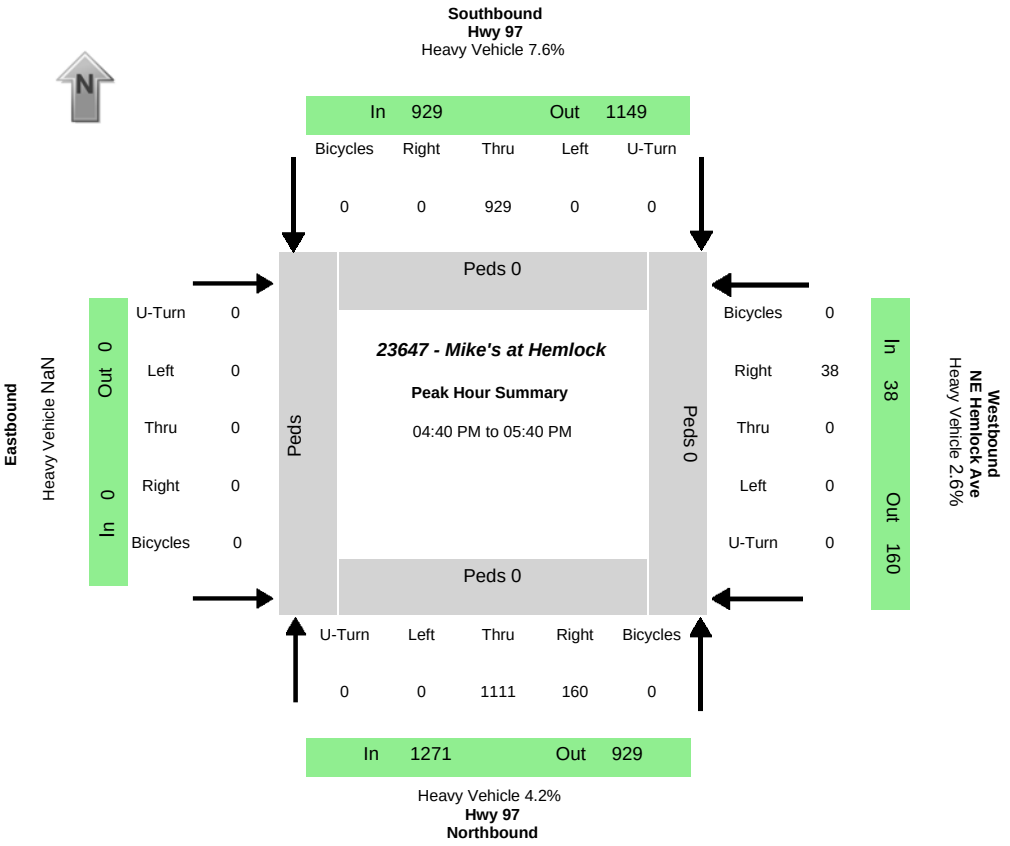
Percent Heavy Vehicles																								
0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	NaN	0.0%	0.0%	0.0%	NaN	0.0%	0.0%	0.0%	

PHV- Bicycles																	PHV - Pedestrians					
Northbound				Southbound				Eastbound				Westbound					in Crosswalk					
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	NB	SB	EB	WB	Sum	
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	

All Vehicle Volumes																		
	Northbound				Southbound				Eastbound				Westbound					
	NE 11th St				NE 11th St				E Antler Ave				E Antler Ave				15 Min	1 HR
Time	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	Sum
04:00:00 PM	0	0	0	0	0	0	2	0	1	1	0	0	0	0	0	0		
04:05:00 PM	0	0	0	0	0	0	3	0	2	0	0	0	0	1	0	0		
04:10:00 PM	0	0	0	0	0	0	4	0	0	0	0	0	0	1	0	0	15	
04:15:00 PM	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	13	
04:20:00 PM	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	10	
04:25:00 PM	0	0	0	0	0	0	0	0	1	1	0	0	0	1	0	0	8	
04:30:00 PM	0	0	0	0	0	0	1	0	0	2	0	0	0	1	0	0	10	
04:35:00 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	8	
04:40:00 PM	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	7	
04:45:00 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	4	
04:50:00 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	1	0	0	6	
04:55:00 PM	0	0	0	0	0	0	0	0	2	0	0	0	0	1	0	0	7	37
05:00:00 PM	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	8	35
05:05:00 PM	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	10	34
05:10:00 PM	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	9	31
05:15:00 PM	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	9	31
05:20:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	28
05:25:00 PM	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	4	27
05:30:00 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	4	25
05:35:00 PM	0	0	0	0	0	0	0	0	1	0	0	1	0	1	0	0	7	27
05:40:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	6	26
05:45:00 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	5	26
05:50:00 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	3	24
05:55:00 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	1	0	0	5	24

K-D-N
KEY DATA NETWORK

Data Provided by K-D-N.com 503-594-4224	
N/S street	*Hwy 97*
E/W street	*NE Hemlock Ave*
City, State	Redmond OR
Site Notes	
Location	44.283773 - -121.167998
Start Date	Wednesday, June 09, 2021
Start Time	04:00:00 PM
Weather	
Study ID #	
Peak Hour Start	04:40:00 PM
Peak 15 Min Start	05:00:00 PM
PHF (15-Min Int)	0.91



Peak-Hour Volumes (PHV)

Northbound				Southbound				Eastbound				Westbound				Entering				Leaving			
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	NB	SB	EB	WB	NB	SB	EB	WB
0	1111	160	0	0	929	0	0	0	0	0	0	0	0	38	0	1271	929	0	38	929	1149	0	160

Percent Heavy Vehicles

0.0%	4.4%	2.5%	0.0%	0.0%	7.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.6%	0.0%	4.2%	7.6%	NaN	2.6%	7.6%	4.4%	NaN	2.5%

PHV- Bicycles

Northbound				Southbound				Eastbound				Westbound				
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum
	0	0	0	0	0		0					0		0	0	0

PHV - Pedestrians

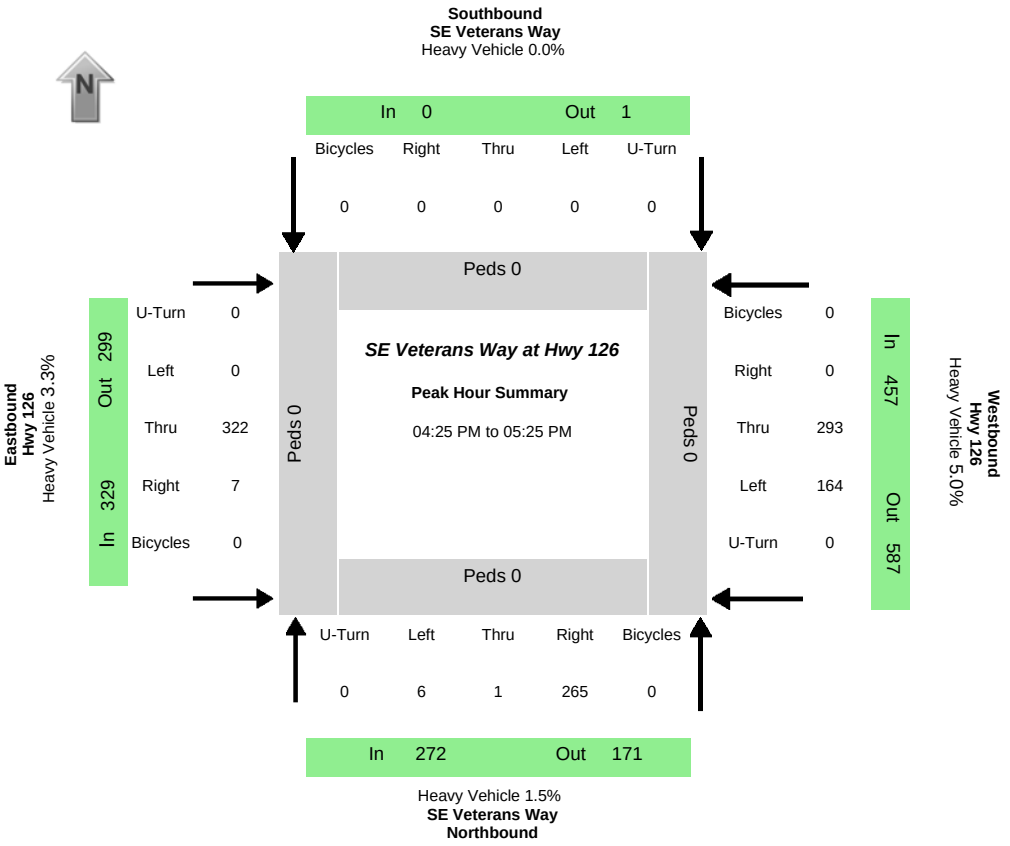
in Crosswalk				
NB	SB	EB	WB	Sum
0	0		0	0

All Vehicle Volumes

	Northbound Hwy 97				Southbound Hwy 97				Eastbound				Westbound NE Hemlock Ave				15 Min	1 HR
Time	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	Sum
04:00:00 PM		96	17	0	0	73		0					0		1	0		
04:05:00 PM		89	7	0	0	90		0					0		6	0		
04:10:00 PM		87	9	0	0	77		0					0		4	0	556	
04:15:00 PM		92	13	0	0	80		0					0		3	0	557	
04:20:00 PM		69	10	0	0	83		0					0		2	0	529	
04:25:00 PM		94	10	0	0	89		0					0		6	0	551	
04:30:00 PM		93	13	0	0	82		0					0		4	0	555	
04:35:00 PM		60	11	0	0	91		0					0		3	0	556	
04:40:00 PM		84	16	0	0	74		0					0		7	0	538	
04:45:00 PM		81	13	0	0	85		0					0		5	0	530	
04:50:00 PM		95	20	0	0	63		0					0		3	0	546	
04:55:00 PM		67	14	0	0	65		0					0		2	0	513	2158
05:00:00 PM		108	13	0	0	81		0					0		3	0	534	2176
05:05:00 PM		114	14	0	0	93		0					0		5	0	579	2210
05:10:00 PM		87	13	0	0	78		0					0		4	0	613	2215
05:15:00 PM		111	7	0	0	76		0					0		2	0	604	2223
05:20:00 PM		89	8	0	0	75		0					0		3	0	553	2234
05:25:00 PM		99	12	0	0	85		0					0		2	0	569	2233
05:30:00 PM		102	11	0	0	72		0					0		1	0	559	2227
05:35:00 PM		74	19	0	0	82		0					0		1	0	560	2238
05:40:00 PM		68	15	0	0	72		0					0		1	0	518	2213
05:45:00 PM		74	3	0	0	76		0					0		0	0	485	2182
05:50:00 PM		104	18	0	0	70		0					0		2	0	503	2195
05:55:00 PM		70	13	0	0	77		0					0		1	0	508	2208

K-D-N
KEY DATA NETWORK

Data Provided by K-D-N.com 503-594-4224	
N/S street	*SE Veterans Way*
E/W street	*Hwy 126*
City, State	Redmond OR
Site Notes	
Location	44.264078 - -121.152038
Start Date	Wednesday, August 09, 2017
Start Time	04:00:00 PM
Weather	
Study ID #	
Peak Hour Start	04:25:00 PM
Peak 15 Min Start	04:40:00 PM
PHF (15-Min Int)	0.92



Peak-Hour Volumes (PHV)

Northbound				Southbound				Eastbound				Westbound				Entering				Leaving			
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	NB	SB	EB	WB	NB	SB	EB	WB
6	1	265	0	0	0	0	0	0	322	7	0	164	293	0	0	272	0	329	457	171	1	299	587

Percent Heavy Vehicles

33.3%	0.0%	0.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	3.4%	0.0%	0.0%	5.5%	4.8%	0.0%	0.0%	1.5%	0.0%	3.3%	5.0%	5.3%	0.0%	5.4%	2.2%

PHV- Bicycles

Northbound				Southbound				Eastbound				Westbound				
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	**Sum**
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PHV - Pedestrians

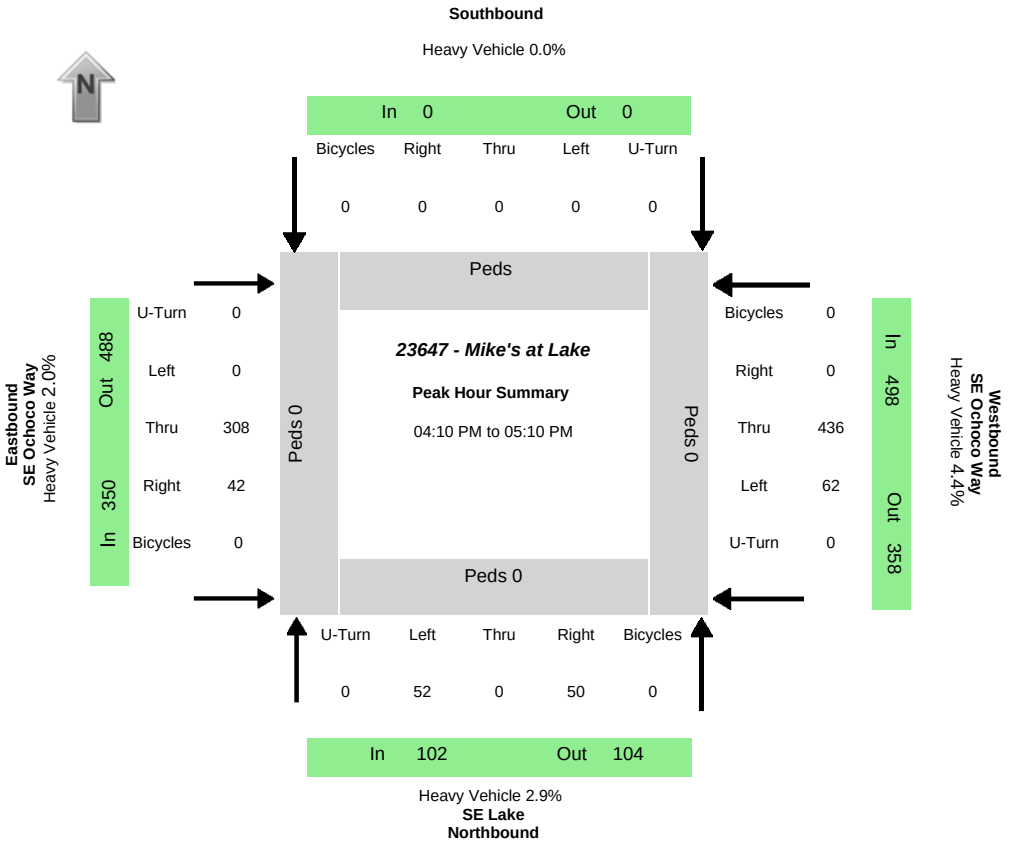
in Crosswalk				
NB	SB	EB	WB	**Sum**
0	0	0	0	0

All Vehicle Volumes

	Northbound SE Veterans Way				Southbound SE Veterans Way				Eastbound Hwy 126				Westbound Hwy 126				15 Min	1 HR
Time	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	Sum
04:00:00 PM	0	0	20	0	0	0	0	0	0	22	1	0	14	24	0	0		
04:05:00 PM	1	0	14	0	0	0	0	0	0	23	0	0	5	18	0	0		
04:10:00 PM	0	0	25	0	0	0	0	0	0	19	0	0	10	27	0	0	223	
04:15:00 PM	0	0	15	0	0	0	0	0	0	34	1	0	14	18	0	0	224	
04:20:00 PM	0	0	15	0	0	0	0	0	0	38	0	0	11	14	0	0	241	
04:25:00 PM	1	0	22	0	0	0	0	0	0	21	1	0	20	24	0	0	249	
04:30:00 PM	1	0	16	0	0	0	0	0	0	30	0	0	13	27	0	0	254	
04:35:00 PM	1	0	17	0	0	0	0	0	0	30	0	0	9	21	0	0	254	
04:40:00 PM	0	0	36	0	0	0	0	0	0	30	0	0	17	35	0	0	283	
04:45:00 PM	0	0	18	0	0	0	0	0	0	22	0	0	12	23	0	0	271	
04:50:00 PM	1	0	25	0	0	0	0	0	0	29	1	0	15	22	0	0	286	
04:55:00 PM	0	1	19	0	0	0	0	0	0	16	0	0	24	29	0	0	257	1012
05:00:00 PM	1	0	21	0	0	0	0	0	0	22	0	0	11	24	0	0	261	1010
05:05:00 PM	0	0	23	0	0	0	0	0	0	33	1	0	8	22	0	0	255	1036
05:10:00 PM	0	0	22	0	0	0	0	0	0	27	2	0	19	16	0	0	252	1041
05:15:00 PM	0	0	24	0	0	0	0	0	0	32	2	0	9	26	0	0	266	1052
05:20:00 PM	1	0	22	0	0	0	0	0	0	30	0	0	7	24	0	0	263	1058
05:25:00 PM	0	0	26	0	0	0	0	0	0	23	0	0	14	21	0	0	261	1053
05:30:00 PM	0	1	16	0	0	0	0	0	0	21	0	0	18	24	0	0	248	1046
05:35:00 PM	1	0	19	0	0	0	0	0	0	22	0	0	9	33	0	0	248	1052
05:40:00 PM	1	0	14	0	0	0	0	0	0	24	0	0	9	23	0	0	235	1005
05:45:00 PM	1	0	19	0	0	0	0	0	0	23	0	0	13	25	0	0	236	1011
05:50:00 PM	0	0	12	0	0	0	0	0	0	28	0	0	5	19	0	0	216	982
05:55:00 PM	0	0	11	0	0	0	0	0	0	25	2	0	6	15	0	0	204	952

K-D-N
KEY DATA NETWORK

Data Provided by K-D-N.com 503-594-4224	
N/S street	*SE Lake*
E/W street	*SE Ochoco Way*
City, State	Redmond OR
Site Notes	
Location	44.272054 - -121.162609
Start Date	Wednesday, June 09, 2021
Start Time	04:00:00 PM
Weather	
Study ID #	
Peak Hour Start	04:10:00 PM
Peak 15 Min Start	04:25:00 PM
PHF (15-Min Int)	0.86



Peak-Hour Volumes (PHV)																								
Northbound				Southbound				Eastbound				Westbound				Entering				Leaving				
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	NB	SB	EB	WB	NB	SB	EB	WB	
52	0	50	0	0	0	0	0	0	308	42	0	62	436	0	0	102	0	350	498	104	0	488	358	

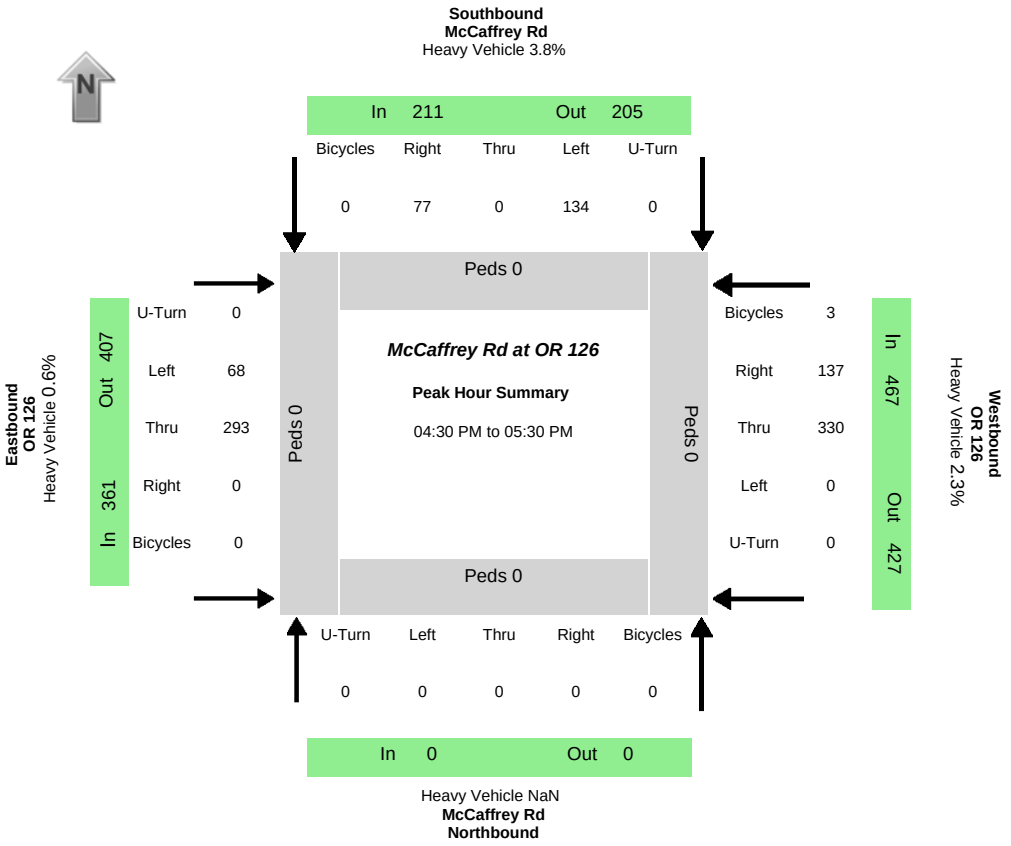
Percent Heavy Vehicles																								
3.8%	0.0%	2.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.3%	0.0%	0.0%	9.7%	3.7%	0.0%	0.0%	2.9%	0.0%	2.0%	4.4%	5.8%	0.0%	3.7%	2.2%	

PHV- Bicycles																	PHV - Pedestrians					
Northbound				Southbound				Eastbound				Westbound					in Crosswalk					
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	NB	SB	EB	WB	Sum	
0		0	0						0	0	0	0	0		0	0	0		0	0	0	

All Vehicle Volumes																		
	Northbound				Southbound				Eastbound				Westbound				15 Min	1 HR
	SE Lake								SE Ochoco Way				SE Ochoco Way					
Time	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	Sum
04:00:00 PM	2		5	0						27	3	0	1	30		0		
04:05:00 PM	6		8	0						12	9	0	5	35		0		
04:10:00 PM	1		7	0						26	3	0	9	33		0	222	
04:15:00 PM	6		4	0						22	5	0	7	25		0	223	
04:20:00 PM	4		2	0						22	3	0	5	30		0	214	
04:25:00 PM	7		6	0						27	7	0	4	52		0	238	
04:30:00 PM	6		6	0						26	4	0	4	39		0	254	
04:35:00 PM	7		7	0						29	4	0	4	38		0	277	
04:40:00 PM	4		2	0						30	1	0	4	40		0	255	
04:45:00 PM	5		2	0						24	5	0	5	28		0	239	
04:50:00 PM	1		1	0						20	1	0	8	31		0	212	
04:55:00 PM	4		2	0						30	6	0	2	38		0	213	928
05:00:00 PM	5		4	0						23	2	0	7	46		0	231	947
05:05:00 PM	2		7	0						29	1	0	3	36		0	247	950
05:10:00 PM	5		4	0						23	2	0	5	36		0	240	946
05:15:00 PM	3		3	0						17	1	0	3	26		0	206	930
05:20:00 PM	3		7	0						22	1	0	3	28		0	192	928
05:25:00 PM	3		1	0						29	0	0	1	26		0	177	885
05:30:00 PM	0		3	0						34	2	0	3	23		0	189	865
05:35:00 PM	6		1	0						31	1	0	2	19		0	185	836
05:40:00 PM	0		3	0						16	1	0	1	28		0	174	804
05:45:00 PM	1		2	0						18	2	0	4	24		0	160	786
05:50:00 PM	2		0	0						19	3	0	1	13		0	138	762
05:55:00 PM	2		2	0						19	0	0	1	15		0	128	719

K-D-N
KEY DATA NETWORK

Data Provided by K-D-N.com 503-594-4224	
N/S street	*McCaffrey Rd*
E/W street	*OR 126*
City, State	Powell Butte OR
Site Notes	
Location	44.269067 - -121.158931
Start Date	Tuesday, July 16, 2019
Start Time	04:00:00 PM
Weather	Sunny
Study ID #	
Peak Hour Start	04:30:00 PM
Peak 15 Min Start	04:30:00 PM
PHF (15-Min Int)	0.93



Peak-Hour Volumes (PHV)																							
Northbound				Southbound				Eastbound				Westbound				Entering				Leaving			
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	NB	SB	EB	WB	NB	SB	EB	WB
0	0	0	0	134	0	77	0	68	293	0	0	0	330	137	0	0	211	361	467	0	205	407	427
Percent Heavy Vehicles																							
0.0%	0.0%	0.0%	0.0%	1.5%	0.0%	7.8%	0.0%	0.0%	0.7%	0.0%	0.0%	0.0%	1.5%	4.4%	0.0%	NaN	3.8%	0.6%	2.4%	NaN	2.9%	2.7%	0.9%

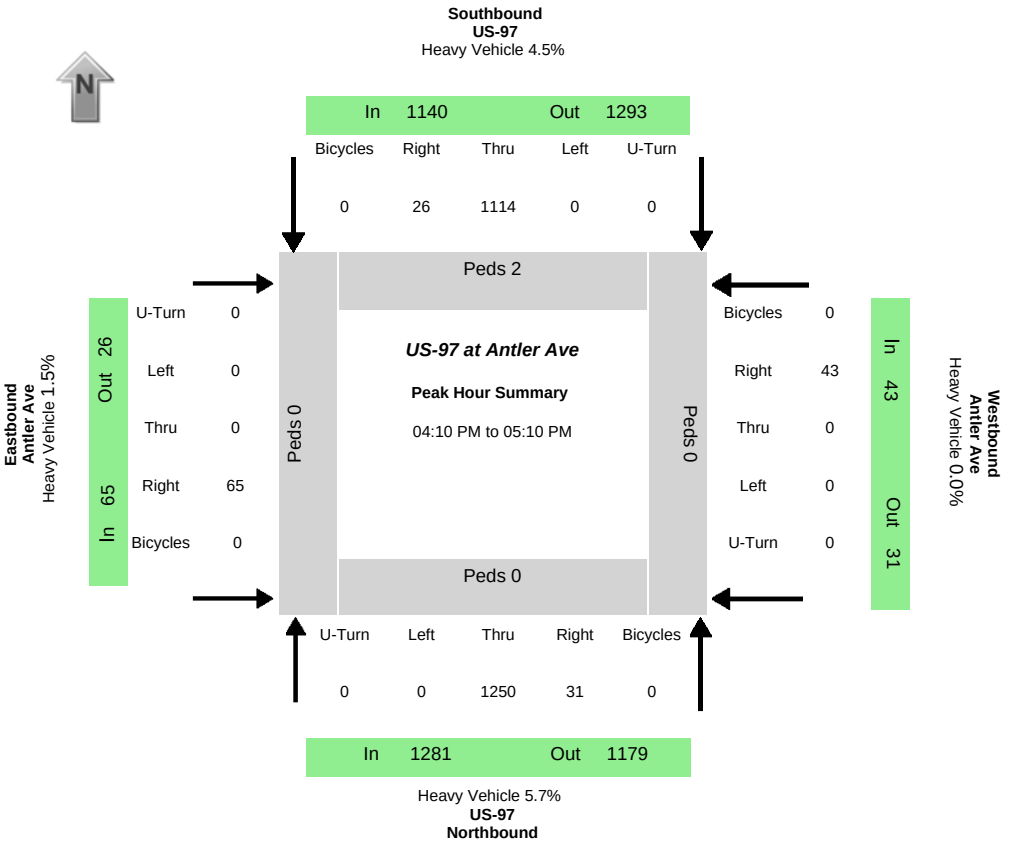
PHV- Bicycles																	PHV - Pedestrians					
Northbound				Southbound				Eastbound				Westbound					in Crosswalk				
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	NB	SB	EB	WB	Sum
0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0

All Vehicle Volumes

	Northbound McCaffrey Rd				Southbound McCaffrey Rd				Eastbound OR 126				Westbound OR 126				15 Min	1 HR
Time	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	Sum
04:00:00 PM	0	0	0	0	12	0	13	0	7	25	0	0	0	29	3	0		
04:05:00 PM	0	0	0	0	11	0	4	0	3	15	0	0	0	19	10	0		
04:10:00 PM	0	0	0	0	13	0	8	0	1	24	0	0	0	29	12	0	238	
04:15:00 PM	0	0	0	0	12	0	10	0	8	23	0	0	0	16	11	0	229	
04:20:00 PM	0	0	0	0	8	0	5	0	1	27	0	0	0	29	16	0	253	
04:25:00 PM	0	0	0	0	9	0	5	0	3	21	0	0	0	32	15	0	251	
04:30:00 PM	0	0	0	0	10	0	6	0	7	22	0	0	0	23	18	0	257	
04:35:00 PM	0	0	0	0	17	0	10	0	9	25	0	0	0	30	8	0	270	
04:40:00 PM	0	0	0	0	14	0	9	0	2	26	0	0	0	27	17	0	280	
04:45:00 PM	0	0	0	0	8	0	4	0	6	20	0	0	0	19	11	0	262	
04:50:00 PM	0	0	0	0	8	0	8	0	5	26	0	0	0	32	11	0	253	
04:55:00 PM	0	0	0	0	7	0	9	0	2	17	0	0	0	18	9	0	220	989
05:00:00 PM	0	0	0	0	13	0	8	0	4	26	0	0	0	25	8	0	236	984
05:05:00 PM	0	0	0	0	12	0	7	0	12	26	0	0	0	25	13	0	241	1017
05:10:00 PM	0	0	0	0	14	0	5	0	9	26	0	0	0	33	9	0	275	1026
05:15:00 PM	0	0	0	0	10	0	2	0	4	29	0	0	0	28	14	0	278	1033
05:20:00 PM	0	0	0	0	14	0	6	0	4	27	0	0	0	29	9	0	272	1036
05:25:00 PM	0	0	0	0	7	0	3	0	4	23	0	0	0	41	10	0	264	1039
05:30:00 PM	0	0	0	0	9	0	6	0	3	19	0	0	0	32	11	0	257	1033
05:35:00 PM	0	0	0	0	5	0	6	0	3	24	0	0	0	31	14	0	251	1017
05:40:00 PM	0	0	0	0	8	0	10	0	2	18	0	0	0	18	10	0	229	988
05:45:00 PM	0	0	0	0	11	0	3	0	9	21	0	0	0	17	10	0	220	991
05:50:00 PM	0	0	0	0	5	0	5	0	2	21	0	0	0	20	11	0	201	965
05:55:00 PM	0	0	0	0	6	0	3	0	2	20	0	0	0	11	8	0	185	953

K-D-N
KEY DATA NETWORK

Data Provided by K-D-N.com 503-594-4224	
N/S street	*US-97*
E/W street	*Antler Ave*
City, State	Redmond OR
Site Notes	
Location	44.276426 - -121.168933
Start Date	Thursday, April 01, 2021
Start Time	04:00:00 PM
Weather	
Study ID #	
Peak Hour Start	04:10:00 PM
Peak 15 Min Start	04:55:00 PM
PHF (15-Min Int)	0.95



Peak-Hour Volumes (PHV)

Northbound				Southbound				Eastbound				Westbound				Entering				Leaving			
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	NB	SB	EB	WB	NB	SB	EB	WB
0	1250	31	0	0	1114	26	0	0	0	65	0	0	0	43	0	1281	1140	65	43	1179	1293	26	31

Percent Heavy Vehicles

0.0%	5.3%	22.6%	0.0%	0.0%	4.6%	0.0%	0.0%	0.0%	0.0%	1.5%	0.0%	0.0%	0.0%	0.0%	0.0%	5.7%	4.5%	1.5%	0.0%	4.4%	5.1%	0.0%	22.6%

PHV- Bicycles

Northbound				Southbound				Eastbound				Westbound				
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	**Sum**
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PHV - Pedestrians

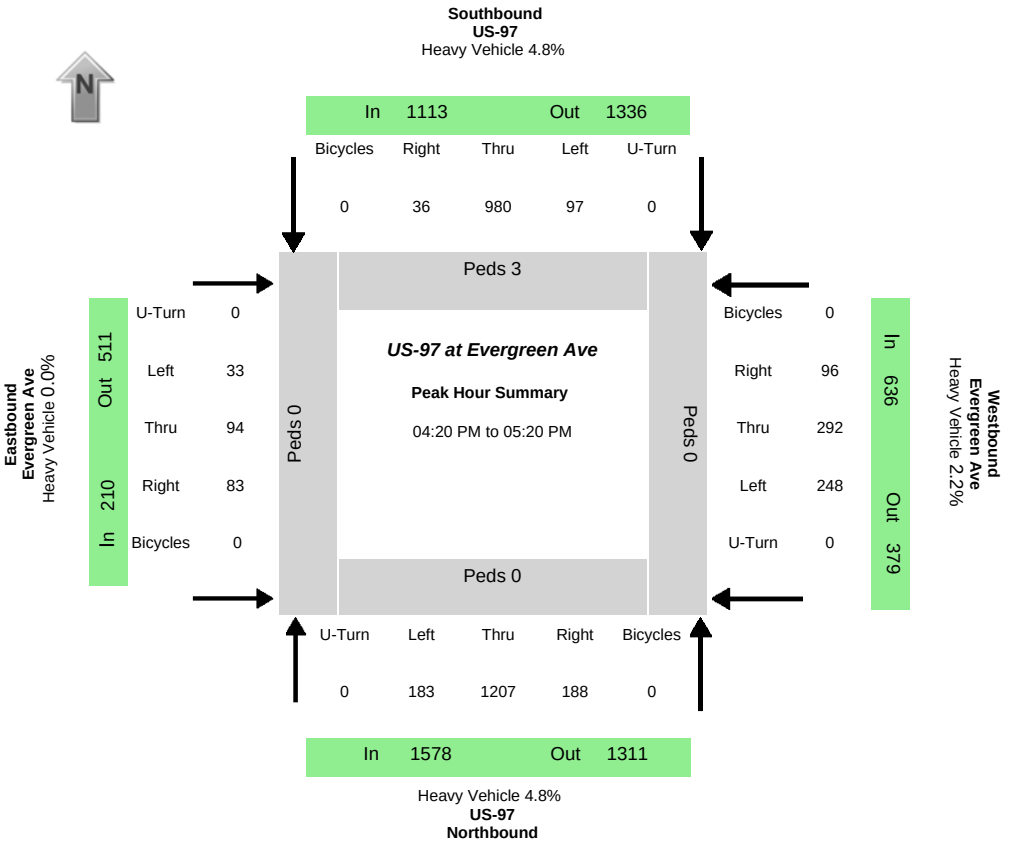
in Crosswalk				
NB	SB	EB	WB	**Sum**
0	2	0	0	2

All Vehicle Volumes

	Northbound US-97				Southbound US-97				Eastbound Antler Ave				Westbound Antler Ave				15 Min	1 HR
Time	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	Sum
04:00:00 PM	0	71	3	0	0	94	1	0	0	0	8	0	0	0	5	0		
04:05:00 PM	0	94	5	0	0	86	2	0	0	0	3	0	0	0	3	0		
04:10:00 PM	0	82	1	0	0	114	5	0	0	0	8	0	0	0	5	0	590	
04:15:00 PM	0	102	0	0	0	87	3	0	0	0	3	0	0	0	4	0	607	
04:20:00 PM	0	94	2	0	0	108	0	0	0	0	3	0	0	0	3	0	624	
04:25:00 PM	0	103	2	0	0	88	2	0	0	0	9	0	0	0	1	0	614	
04:30:00 PM	0	109	8	0	0	94	2	0	0	0	9	0	0	0	5	0	642	
04:35:00 PM	0	91	1	0	0	89	1	0	0	0	3	0	0	0	1	0	618	
04:40:00 PM	0	112	3	0	0	83	5	0	0	0	1	0	0	0	2	0	619	
04:45:00 PM	0	120	3	0	0	85	1	0	0	0	6	0	0	0	3	0	610	
04:50:00 PM	0	93	2	0	0	91	1	0	0	0	5	0	0	0	4	0	620	
04:55:00 PM	0	115	3	0	0	98	4	0	0	0	4	0	0	0	3	0	641	2464
05:00:00 PM	0	121	5	0	0	70	1	0	0	0	6	0	0	0	6	0	632	2491
05:05:00 PM	0	108	1	0	0	107	1	0	0	0	8	0	0	0	6	0	667	2529
05:10:00 PM	0	90	0	0	0	78	3	0	0	0	8	0	0	0	3	0	622	2496
05:15:00 PM	0	135	1	0	0	79	2	0	0	0	4	0	0	0	2	0	636	2520
05:20:00 PM	0	100	1	0	0	87	1	0	0	0	4	0	0	0	3	0	601	2506
05:25:00 PM	0	93	2	0	0	78	1	0	0	0	7	0	0	0	1	0	601	2483
05:30:00 PM	0	115	4	0	0	83	5	0	0	0	4	0	0	0	1	0	590	2468
05:35:00 PM	0	87	2	0	0	63	1	0	0	0	6	0	0	0	4	0	557	2445
05:40:00 PM	0	91	2	0	0	88	2	0	0	0	6	0	0	0	0	0	564	2428
05:45:00 PM	0	101	1	0	0	87	0	0	0	0	2	0	0	0	2	0	545	2403
05:50:00 PM	0	98	3	0	0	57	3	0	0	0	7	0	0	0	3	0	553	2378
05:55:00 PM	0	94	0	0	0	71	4	0	0	0	5	0	0	0	5	0	543	2330

K-D-N
KEY DATA NETWORK

Data Provided by K-D-N.com 503-594-4224	
N/S street	*US-97*
E/W street	*Evergreen Ave*
City, State	Redmond OR
Site Notes	
Location	44.272584 - -121.169952
Start Date	Thursday, April 01, 2021
Start Time	04:00:00 PM
Weather	
Study ID #	
Peak Hour Start	04:20:00 PM
Peak 15 Min Start	05:05:00 PM
PHF (15-Min Int)	0.97



Peak-Hour Volumes (PHV)																								
Northbound				Southbound				Eastbound				Westbound				Entering				Leaving				
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	NB	SB	EB	WB	NB	SB	EB	WB	
183	1207	188	0	97	980	36	0	33	94	83	0	248	292	96	0	1578	1113	210	636	1311	1336	511	379	

Percent Heavy Vehicles																								
0.0%	5.6%	4.8%	0.0%	2.1%	5.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	4.4%	0.0%	3.1%	0.0%	4.8%	4.8%	0.0%	2.2%	4.7%	5.2%	0.0%	2.9%	

PHV- Bicycles																	PHV - Pedestrians					
Northbound				Southbound				Eastbound				Westbound					in Crosswalk					
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	NB	SB	EB	WB	Sum	
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	

All Vehicle Volumes																		
	Northbound US-97				Southbound US-97				Eastbound Evergreen Ave				Westbound Evergreen Ave				15 Min	1 HR
Time	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	Sum
04:00:00 PM	8	62	21	0	6	85	2	0	5	8	4	0	11	22	7	0		
04:05:00 PM	17	96	16	0	9	88	3	0	0	5	11	0	18	33	3	0		
04:10:00 PM	14	82	18	0	10	107	1	0	1	5	7	0	20	21	3	0	829	
04:15:00 PM	14	84	31	0	7	69	5	0	0	6	2	0	20	19	3	0	848	
04:20:00 PM	25	107	23	0	10	78	3	0	1	6	5	0	15	11	5	0	838	
04:25:00 PM	9	102	19	0	7	112	3	0	0	9	6	0	19	17	2	0	854	
04:30:00 PM	21	93	14	0	7	71	1	0	2	8	8	0	29	21	9	0	878	
04:35:00 PM	19	81	16	0	12	75	5	0	2	6	7	0	17	29	14	0	872	
04:40:00 PM	14	112	13	0	8	89	3	0	1	6	6	0	23	29	7	0	878	
04:45:00 PM	11	93	12	0	8	71	4	0	8	8	4	0	29	23	11	0	876	
04:50:00 PM	20	90	15	0	11	66	3	0	2	9	4	0	25	24	6	0	868	
04:55:00 PM	12	110	10	0	8	95	4	0	5	7	11	0	15	23	11	0	868	3429
05:00:00 PM	10	99	20	0	9	75	5	0	6	6	8	0	17	27	5	0	873	3475
05:05:00 PM	17	96	18	0	1	69	1	0	2	8	6	0	21	40	9	0	886	3464
05:10:00 PM	15	102	17	0	10	101	2	0	2	10	10	0	22	25	11	0	902	3502
05:15:00 PM	10	122	11	0	6	78	2	0	2	11	8	0	16	23	6	0	910	3537
05:20:00 PM	23	76	20	0	7	65	4	0	4	6	4	0	17	13	10	0	871	3497
05:25:00 PM	11	106	25	0	12	77	1	0	2	3	11	0	20	23	0	0	835	3483
05:30:00 PM	17	100	13	0	9	68	2	0	4	5	7	0	13	14	5	0	797	3456
05:35:00 PM	13	89	22	0	9	71	3	0	3	2	3	0	15	10	3	0	791	3416
05:40:00 PM	13	78	12	0	9	64	3	0	5	8	2	0	21	32	5	0	752	3357
05:45:00 PM	7	103	17	0	2	88	2	0	4	2	1	0	9	11	2	0	743	3323
05:50:00 PM	15	85	10	0	5	51	1	0	1	7	4	0	17	16	3	0	715	3263
05:55:00 PM	15	97	20	0	6	53	5	0	1	7	10	0	11	12	2	0	702	3191

APPENDIX 2: INTERNAL TRIP WORKSHEETS

MIXED USE TRIP GENERATION MODEL V4 - INPUT

FEHR & PEERS

All shaded cells are inputs
Project / Scenario Specific Inputs
Default National Factors - Can be changed for project based on site specific data, or regional values from census data, travel demand model, etc...

Section 1 - General Site Information

Site Name: Redmond East Gateway

Geographic — **Notes / Instructions**

Developed Area (in acres)	188	Include streets, ROW, parking lots, pocket parks. Do not include open space, vacant lots.
Number of Intersections	17	Count intersections either within or on the perimeter of the MXD. Do not count most unsignalized driveways or alleys, but DO count major entrances to shopping areas or residential developments.
Is Transit (bus or rail) present within the site or across the street?	No	Note: This is only used as a way to zero out the probability of external trips if no transit is present.

Land Use - Surrounding Area

Is the site in a Central Business District or TOD?	No	Answering "Yes" will reduce the HBO and NHB purpose splits for retail use to those found in smaller stores. The nature of the stores (large vs. small) should be the primary factor in the selection here.
Employment within one mile of the MXD	3,795	Do not include employment within the MXD itself
Employment within a 30 minute Transit Trip (Door-to-door)	0	Include employment within the MXD itself This can be a difficult number to get - some suggestions are in the instructions tab in "Instructions."

Site Demographics

Enter Population Directly?	No	If "No", will apply average HH size factors (in section 2) to dwelling units below
Population		You do not need to enter population here. It will be calculated based on dwelling units below and average HH sizes in section 2.
Average Vehicles Owned per Dwelling Unit	2.10	The U.S. Census American Community Survey is likely a good source. Go to the link at right, and search "Community Facts" for your community. The vehicles per household data is within the housing statistics of the ACS. http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml

Section 2 - Variable Modeling Parameters

Conversion Factors

		Source:	What does this input affect?
Average Household Size			
Single Family	3.2		Directly affects trip internalization and mode splits. Also used to compute site population if population isn't entered directly.
Multi-Family	2.5		
High Rise Condo	2.5		
Jobs per ksf			
Retail	2.0	ITE Trip Generation Manual	Used to compute site employment for any land uses which are entered in ksf rather than jobs. For retail, if land uses are entered in jobs, it's used to convert back to ksf for trip generation calculations.
Office	3.0	ITE Trip Generation Manual	
Light Industrial	1.0	ITE Trip Generation Manual	
Manufacturing	0.5	ITE Trip Generation Manual	
Warehousing	2.0	ITE Trip Generation Manual	
Misc. Uses	2.0	ITE Trip Generation Manual	
Jobs from ITE rates per other unit		Source	
Jobs per Hotel Room	0.50	ITE Trip Generation Manual	Used to compute site employment for these land uses which are typically expressed in other units
Jobs per Movie Screen	4.00	ITE Trip Generation Manual	
Grade School Jobs per student	0.10	ITE Trip Generation Manual	
High School / Middle School Jobs per Student	0.10	ITE Trip Generation Manual	
College Jobs per student	0.25	ITE Trip Generation Manual	

Trip Purpose Splits by Land Use Type
This will affect the final results significantly. Keep "Use NCHRP" on "Yes" unless you have reliable splits which have been QA/QCd

For each land use type, choose whether to use NCHRP 365 splits as outlined on the Mode Parameters tab.
If "Yes" is chosen, the percentages will not affect the results. If "No," then enter the splits.

NOTE: For residences, the NHB Attractions are automatically calculated as the remainder to ensure the total is 100%
NOTE: For all other purposes, the NHB attractions are automatically set equal to the NHB productions, and the HBO attractions are automatically calculated as the remainder to ensure the total is 100%
NOTE: There is no NCHRP split defined for schools, so the split has to be entered below.

		Productions			Attractions			Source (if not using NCHRP):
DAILY	**Use NCHRP?**	**HBW**	**HBO**	**NHB**	**HBW**	**HBO**	**NHB**	
Residences	Yes	15%	50%	10%	7%	8%	10%	
Retail	Yes	0%	0%	15%	10%	60%	15%	
Office	Yes	0%	0%	15%	35%	35%	15%	
Other non-residential (excluding schools)	Yes	0%	0%	10%	60%	20%	10%	
Schools	No	0%	0%	2.5%	35%	60%	3%	
AM PEAK HOUR								
Residences	Yes	15%	50%	10%	7%	8%	10%	
Retail	Yes	0%	0%	15%	10%	60%	15%	
Office	Yes	0%	0%	15%	35%	35%	15%	
Other non-residential (excluding schools)	Yes	0%	0%	10%	60%	20%	10%	
Schools	No	0%	0%	2.5%	35%	60%	3%	
PM PEAK HOUR								
Residences	Yes	15%	50%	10%	7%	8%	10%	
Retail	Yes	0%	0%	15%	10%	60%	15%	
Office	Yes	0%	0%	15%	35%	35%	15%	
Other non-residential (excluding schools)	Yes	0%	0%	10%	60%	20%	10%	
Schools	No	0%	0%	2.5%	35%	60%	3%	

NON-HOME BASED TRIPS GENERATED BY PROJECT HOUSEHOLDS

Enter the percent of these that occur...

Completely Within the Project Site	25%	Source for this information: Default	
With one trip end external to the Project Site	15%		This only affects VMT calculations
Completely outside the Project Site	60%	Calculated from other two percentages	

SITE-SPECIFIC INTERNALIZATION

This should only be used in unique situations such as if the project is isolated from surrounding communities or contains a school that primarily serves local residents

This section of input is for when you have specific trips you want to EXCLUDE from the MXD process. These trips will be counted as internal, and subtracted from the "baseline" trips before applying the model. The overall trip reduction percentage will still take these trips into account, and thus be a higher reduction than if you were just letting the model work on all the "baseline" trips. An experienced transportation engineer or planner should be consulted to determine the appropriate assumptions and calculations.

Section 3 - Land Use Inputs

			Trip Equation Method			Trips			ITE Daily Parameters						AM PEAK HOUR TRIP RATES					PM PEAK HOUR TRIP RATES					Valid Trip Gen Calc Choice?			
	Quantity	Units	Daily	AM Peak Hour	PM Peak Hour	Daily	AM Peak Hour	PM Peak Hour	Code	Average Rate	Linear Multiplier	Linear Constant	Log Multiplier	Log Constant	Average Rate	Linear Multiplier	Linear Constant	Log Multiplier	Log Constant	Average Rate	Linear Multiplier	Linear Constant	Log Multiplier	Log Constant	Jobs Per Input Unit (if Applicable)	Daily	AM Peak Hour	PM Peak Hour
Number of Dwelling Units																											
Single Family	0	DU	Log Equation	Linear Equation	Log Equation	0	0	0	210	9.57			0.92	2.71	0.75	0.7	9.74			1.01			0.9	0.51		Yes	Yes	Yes
Multi-Family	769	DU	Linear Equation	Linear Equation	Linear Equation	4,784	381	441	220	6.65	6.06	123.56			0.51	0.49	3.73			0.62	0.55	17.65				Yes	Yes	Yes
High Rise Condo	0	DU	Linear Equation	Linear Equation	Linear Equation	0	0	0	232	4.18	3.77	223.66			0.34	0.29	28.86			0.38	0.34	15.47				Yes	Yes	Yes
Retail (note: if you use job units for retail, the spreadsheet will convert before applying trip rates, using the rate in section 2 which you can change)																											
General Retail other than those listed below	45	ksf	Log Equation	Log Equation	Log Equation	4,056	96	374	Note the	820	42.94			0.65	5.83	1			0.59	2.32	3.73			0.67	3.37	2.0	Yes	Yes	Yes
Supermarket		ksf	Average Rate	Average Rate	Average Rate	0	0	0	formulas	850	102.24	66.95	1391.56		3.59					10.5			0.61	3.95	2.0	Yes	Yes	Yes
Bank	6	ksf	Average Rate	Average Rate	Average Rate	889	74	155	are	912	148.15				12.35					25.82					2.0	Yes	Yes	Yes
Health Club	20	ksf	Average Rate	Average Rate	Average Rate	659	28	71	slightly	492	32.93				1.38					3.53			0.95	1.43	2.0	Yes	Yes	Yes
Restaurant (non-fast food)	6	ksf	Average Rate	Average Rate	Average Rate	763	69	67	different in	932	127.15				11.52					11.15					2.0	Yes	Yes	Yes
Fast-Food Restaurant	6	ksf	Average Rate	Average Rate	Average Rate	2,977	296	203	this	934	496.12				49.35					33.84					2.0	Yes	Yes	Yes
Gas Station	3	ksf	Average Rate	Average Rate	Average Rate	3,543	238	291	section	945	1181.07				79.3					97.08					2.0	Yes	Yes	Yes
Auto Repair	0	ksf	Average Rate	Average Rate	Average Rate	0	0	0	<====	942	31.6				2.94					3.38			0.94	1.33	2.0	Yes	Yes	Yes
Office																											
Non-Medical	86	jobs	Log Equation	Log Equation	Linear Equation	391	58	92		710	3.32			0.84	2.23	0.48			0.86	0.24	0.46	0.37	60.08		1.0	Yes	Yes	Yes
Medical	0	jobs	Average Rate	Average Rate	Average Rate	0	0	0		720	8.91			0.67	3.76	0.53					1.06			1.06	-0.32	1.0	Yes	Yes	Yes
Industrial																											
Light Industrial	677.5033	jobs	Average Rate	Average Rate	Average Rate	2,046	298	285		110	3.02	2.95	30.57			0.44	0.27	70.47			0.42	0.29	58.03		1.0	Yes	Yes	Yes
Manufacturing	677.5033	ksf	Average Rate	Average Rate	Average Rate	2,588	495	495		140	3.82	3.88	-20.7			0.73	0.83	-29.52			0.73	0.78	-15.97		0.5	Yes	Yes	Yes
Warehousing / Self-Storage	677.5033	ksf	Average Rate	Average Rate	Average Rate	1,694	102	176		151	2.5			1.01	0.82	0.15					0.26			1.02	1.49	2.0	Yes	Yes	Yes
Hotel (including restaurant, facilities, etc...)	100	Rooms	Average Rate	Average Rate	Average Rate	817	56	59		310	8.17	8.95	-373.16			0.56			1.24	-2	0.59					0.50	Yes	Yes	Yes
Motel	0	Rooms	Average Rate	Average Rate	Average Rate	0	0	0		320	5.63			0.92	2.11	0.45			0.92	-0.46	0.47			0.94	-0.51	0.50	Yes	Yes	Yes
Movie Theater	0	Screens	Average Rate	Average Rate	Average Rate	0	0	0		445	175.29					0					13.64					4.00	Yes	Yes	Yes
School																											
University	0	Students	Average Rate	Average Rate	Average Rate	0	0	0		550	2.38	2.23	440			0.21	0.21	-69.14			0.21	0.19	118.58		0.25	Yes	Yes	Yes
High School	0	Students	Average Rate	Average Rate	Average Rate	0	0	0		530	1.71			0.81	1.86	0.42					0.13					0.10	Yes	Yes	Yes
Middle School	0	Students	Average Rate	Average Rate	Average Rate	0	0	0		522	1.62					0.54					0.16					0.10	Yes	Yes	Yes
Elementary	0	Students	Average Rate	Average Rate	Average Rate	0	0	0		520	1.29					0.45			1.14	-1.86	0.15					0.10	Yes	Yes	Yes

	Daily	AM Peak Hour	PM Peak Hour
Trips from Land uses not covered above ==>	0	0	0
Jobs in those Land Uses	0		

	Daily	AM Peak Hour	PM Peak Hour
Total "Baseline" ITE Trips	**25,206**	**2,191**	**2,707**

Section 4 - VMT Inputs

	HBW	HBO	NHB
Average Trip Length in the Region	10	6	6
Average Trip Length in the Traffic Analysis Zone	10	6	6

Source: region's Metropolitan Planning Organization

MIXED USE TRIP GENERATION MODEL V4 - RESULTS

FEHR & PEERS

MODEL APPLICATION - ALL TRIPS

	Daily				AM Peak Hour				PM Peak Hour			
	HBW	HBO	NHB	Total	HBW	HBO	NHB	Total	HBW	HBO	NHB	Total
Baseline # of External Trips (ITE Model)	6626	12692	5888	25206	1251	822	117	2191	1002	1057	648	2707
% External Trip Reduction (predicted by MXD Model)												
Internal Capture	2.21%	4.39%	9.26%	4.95%	2.21%	4.39%	9.26%	3.40%	2.21%	4.39%	9.26%	4.75%
Walking External	0.91%	2.17%	0.65%	1.49%	0.91%	2.17%	0.65%	1.37%	0.91%	2.17%	0.65%	1.35%
Transit External	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
# of Trips Reduced (predicted by MXD Model)												
Internal Capture	146	557	545	1248	28	36	11	75	22	46	60	129
Walking External	59	263	35	357	11	17	1	29	9	22	4	35
Transit External	0	0	0	0	0	0	0	0	0	0	0	0
MXD Model # of Vehicle Trips	**6421**	**11871**	**5308**	**23600**	**1213**	**769**	**106**	**2087**	**971**	**988**	**584**	**2544**

Results

External Vehicle Trips	Baseline	Adjusted	Reduction %
Daily	25,206	23,600	6%
AM Peak Hour	2,191	2,087	5%
PM Peak Hour	2,707	2,544	6%

Total Trips Reduced	HBW	HBO	NHB	Total
Daily	205	820	580	1606
AM Peak Hour	39	53	12	103
PM Peak Hour	31	68	64	163

MODEL APPLICATION - TRIP ENDS ASSOCIATED WITH HOUSES IN THE PROJECT ONLY

	Daily				AM Peak Hour				PM Peak Hour			
	HBW	HBO	NHB	Total	HBW	HBO	NHB	Total	HBW	HBO	NHB	Total
Baseline # of External Trips (ITE Model)	983	3110	691	4784	171	196	13	381	124	247	70	441
% External Trip Reduction (predicted by MXD Model)												
Internal Capture	2.21%	4.39%	9.26%	4.64%	2.21%	4.39%	9.26%	3.58%	2.21%	4.39%	9.26%	4.55%
Walking External	0.91%	2.17%	0.65%	1.70%	0.91%	2.17%	0.65%	1.55%	0.91%	2.17%	0.65%	1.58%
Transit External	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
# of Trips Reduced (predicted by MXD Model)												
Internal Capture	22	136	64	222	4	9	1	14	3	11	6	20
Walking External	9	65	4	77	2	4	0	6	1	5	0	7
Transit External	0	0	0	0	0	0	0	0	0	0	0	0
Adjusted # (MXD Model) of Vehicle Trips generated by Project Residences	**953**	**2909**	**623**	**4484**	**166**	**184**	**12**	**361**	**120**	**231**	**63**	**414**

Results	**External Vehicle Trips** Baseline	Adjusted	Reduction %
Daily	4,784	4,484	6%
AM Peak Hour	381	361	5%
PM Peak Hour	441	414	6%

Daily VMT Reduced

	HBW	HBO	NHB	Total
ITE Daily VMT	66,264	76,150	35,327	177,741
MXD Daily Adjusted VMT	64,211	71,228	31,847	167,286
MXD Reduction in Daily VMT (VMT Reduction from Trip Capture)				10,456
as a percentage				6%

	HBW	HBO	NHB	Total
VMT Reduction from Trip Capture	2,053	4,923	3,480	10,456
VMT Reduction from Shorter Trips	-	-	-	-
Total Daily VMT Avoided				10,456

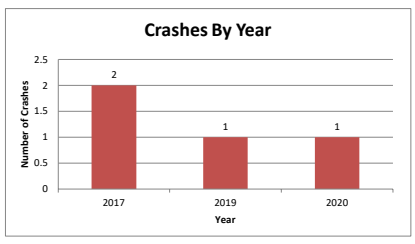
APPENDIX 3: CRASH ANALYSIS WORKSHEETS

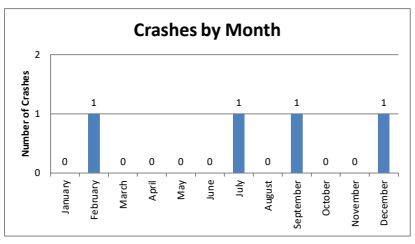
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Project Number	Redmond East Gateway
Query Information:	9th_Maple
Date Queried:	January 1, 2017 - December 31, 2021
Data Provider:	ODOT Crash Analysis Reporting Unit
Analyst:	JWW
Summary Date:	2/26/2024
Text File Name:	
Filters Applied:	: : County: Deschutes

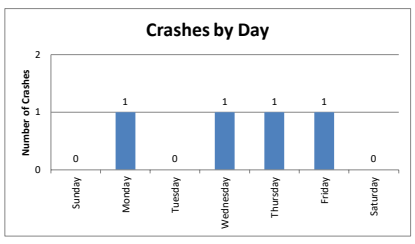
NE 9th Street/ NE Maple Avenue

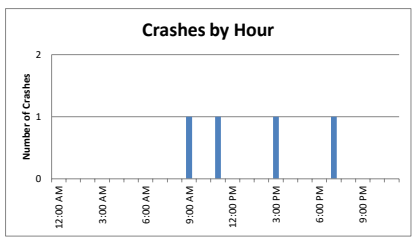
(January 2017 through December 2021)

Crash Summary by Date and Time

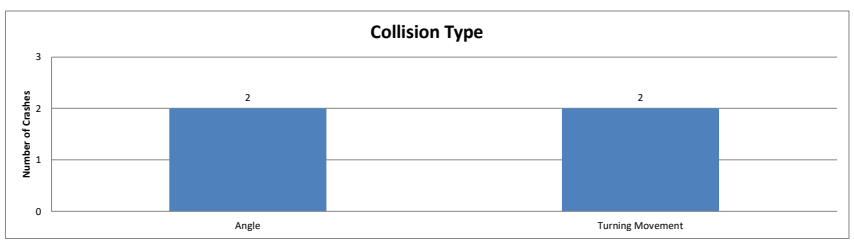


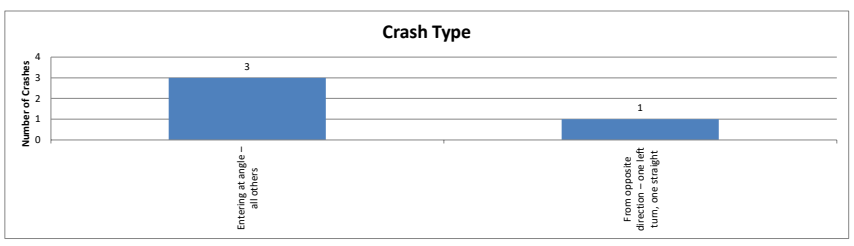




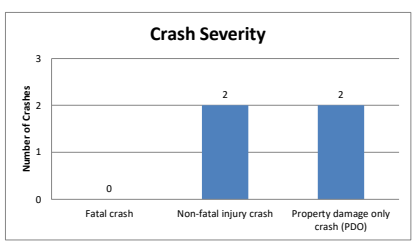


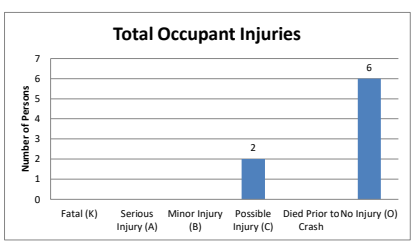
Crash Summary by Type



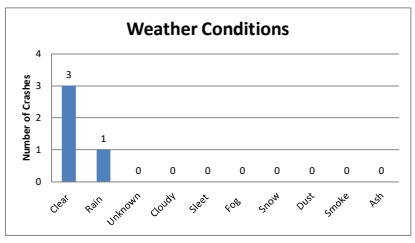


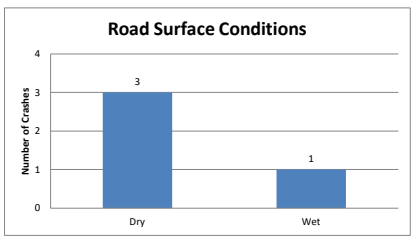
Crash Severity

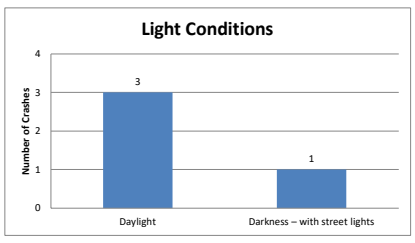




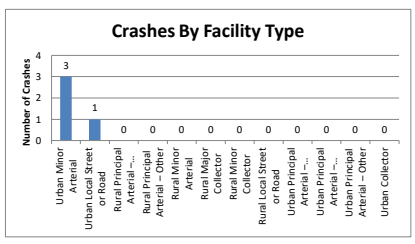
Crash Environment Characteristics

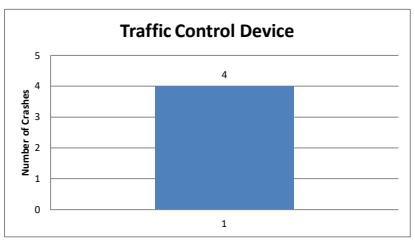


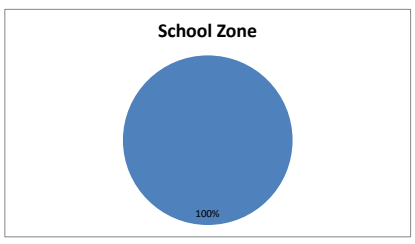


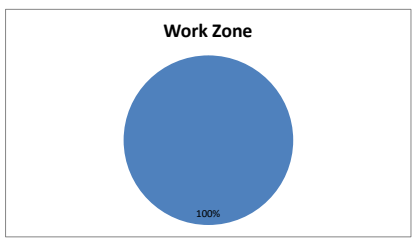


Crash Area Characteristics

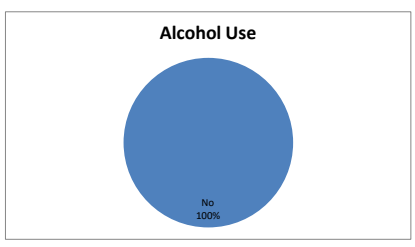


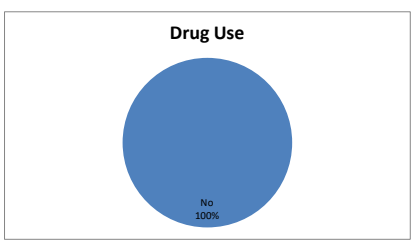




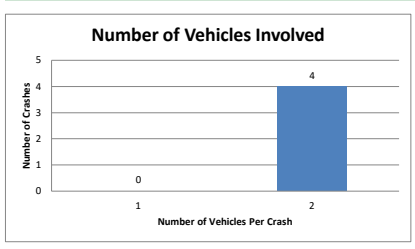


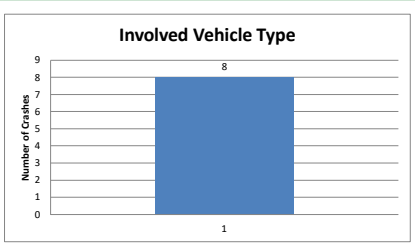
Driving Impairments

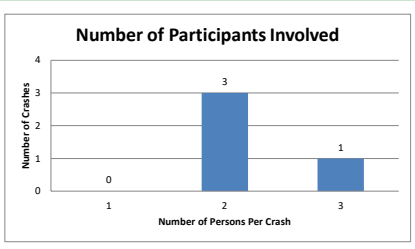




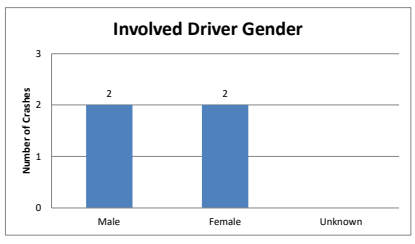
Vehicles and Occupants

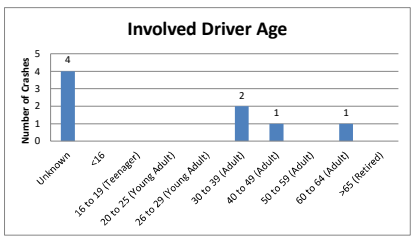


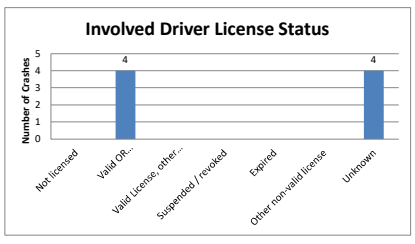


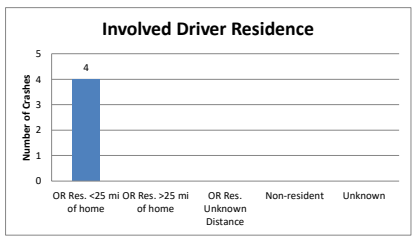


Involved Driver Characteristics

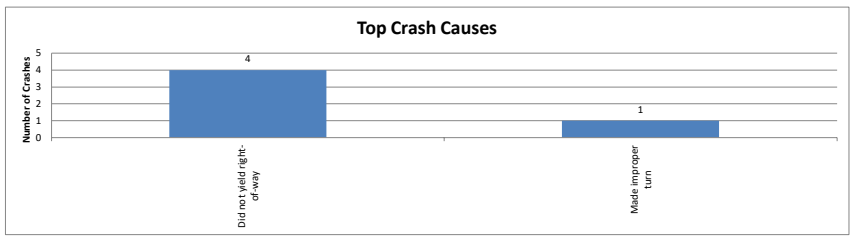


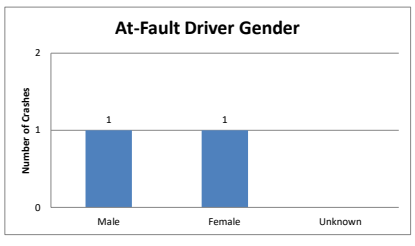


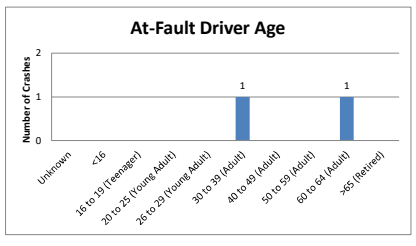




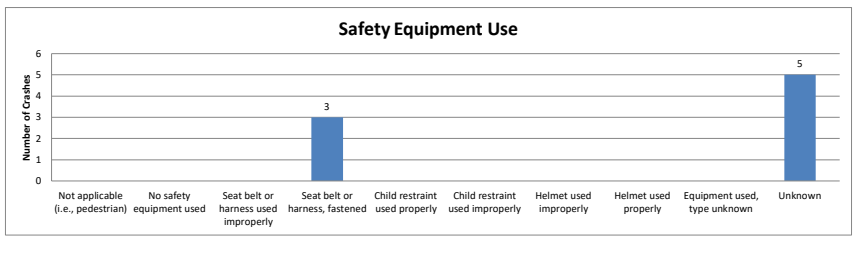
At-Fault Driver Characteristics

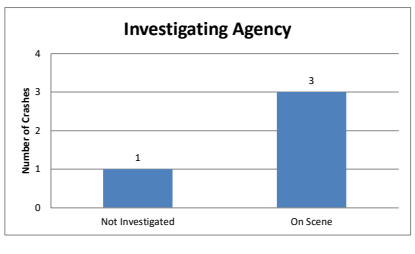






Other Crash Characteristics



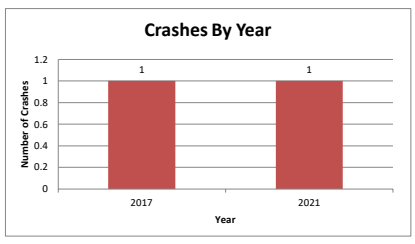


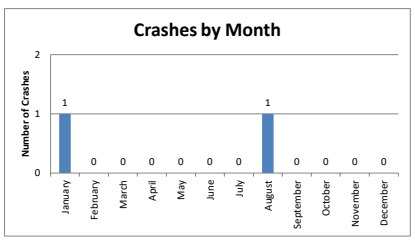
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Date Queried:	January 1, 2017 - December 31, 2021
Data Provider:	ODOT Crash Analysis Reporting Unit
Analyst:	JWW
Summary Date:	2/26/2024
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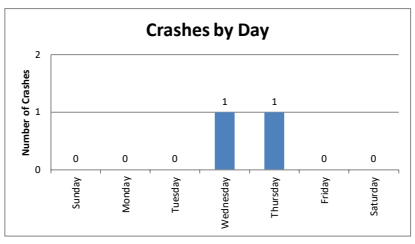
NE 9th Street/ NE Hemlock Avenue

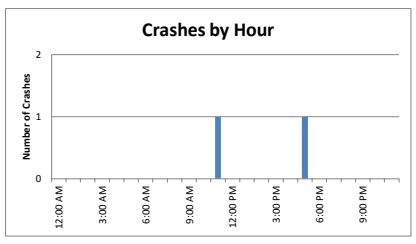
(January 2017 through December 2021)

Crash Summary by Date and Time

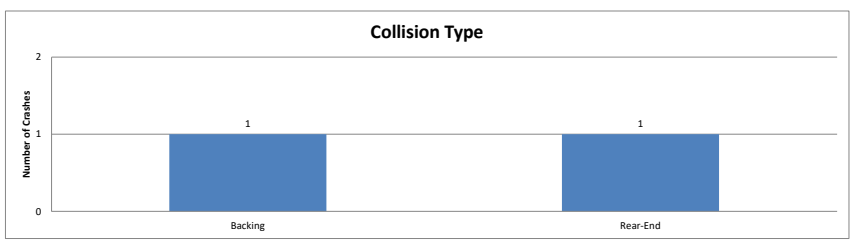


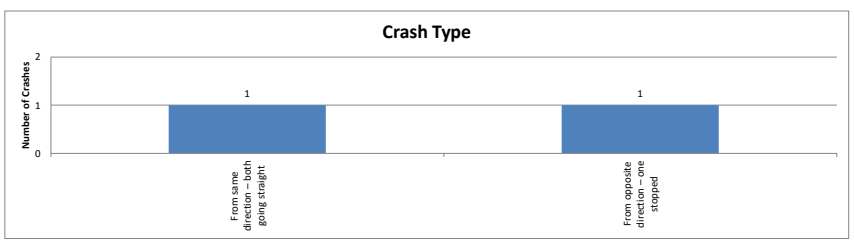




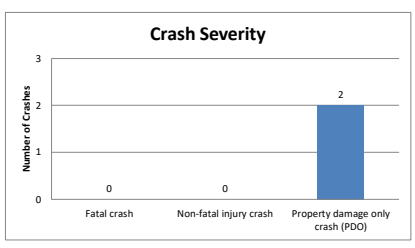


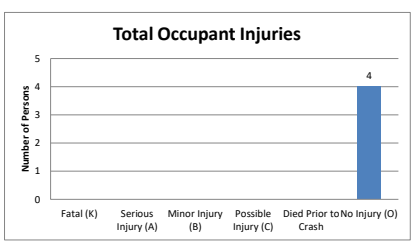
Crash Summary by Type



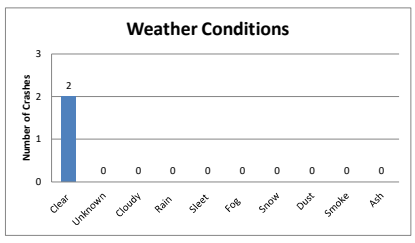


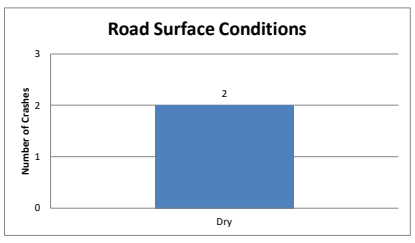
Crash Severity

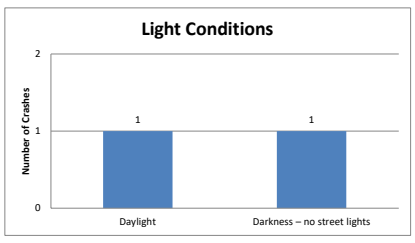




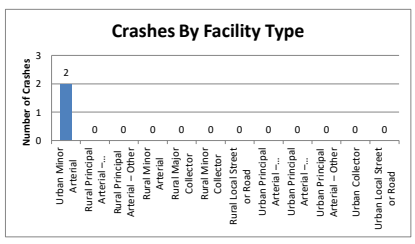
Crash Environment Characteristics

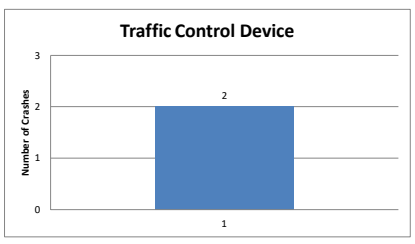


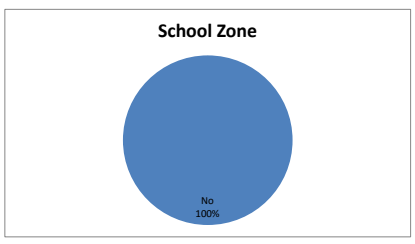


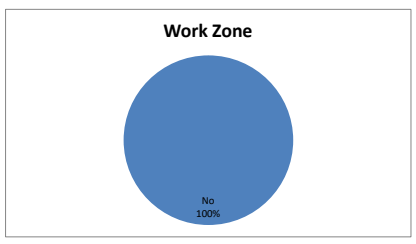


Crash Area Characteristics

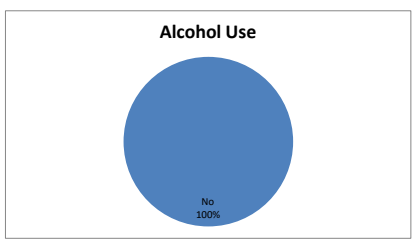


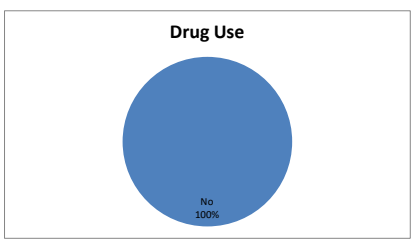




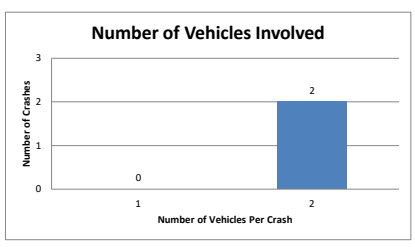


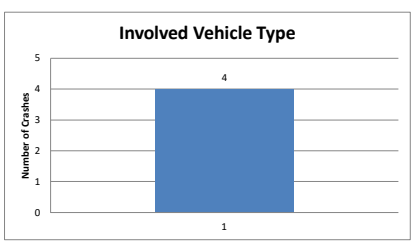
Driving Impairments

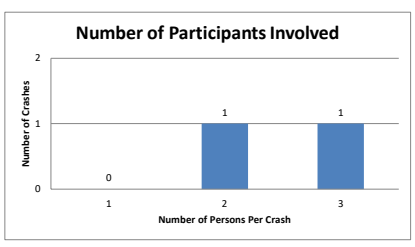




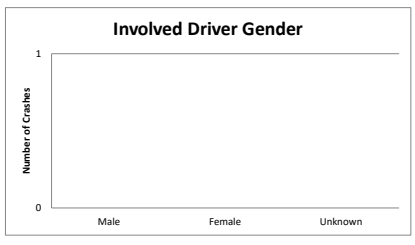
Vehicles and Occupants

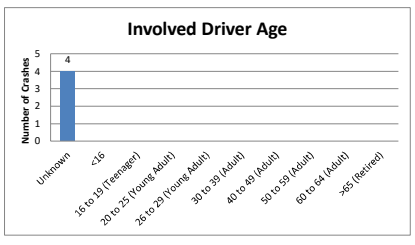


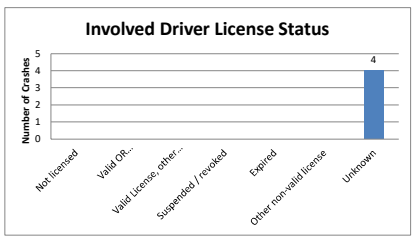


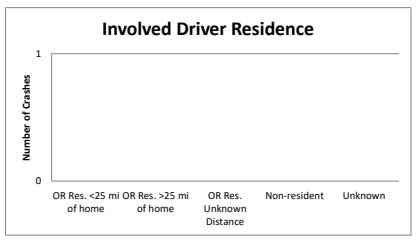


Involved Driver Characteristics

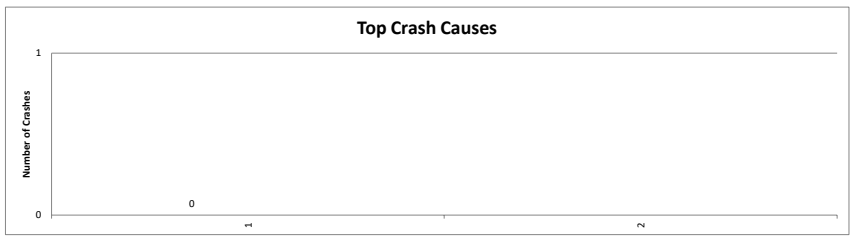


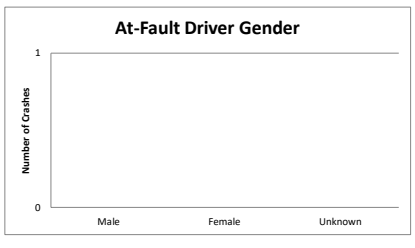


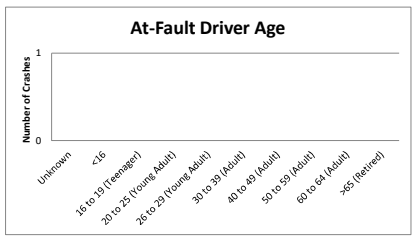




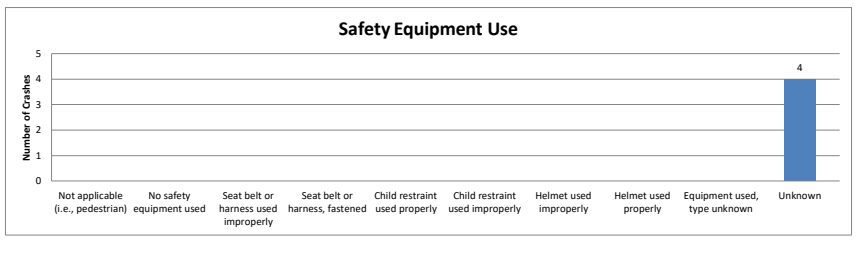
At-Fault Driver Characteristics

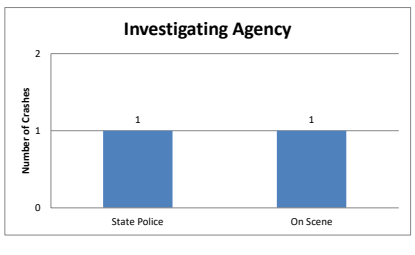






Other Crash Characteristics



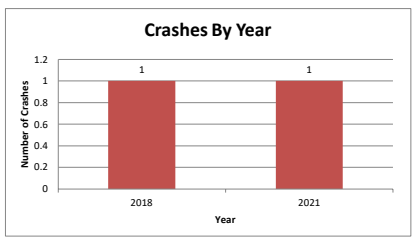


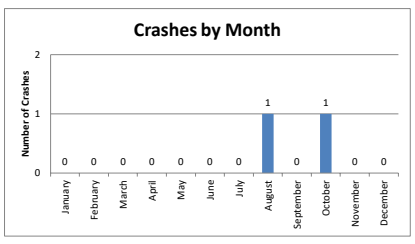
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Project Number	Redmond East Gateway
Query Information:	US97_Antler
Date Queried:	January 1, 2017 - December 31, 2021
Data Provider:	ODOT Crash Analysis Reporting Unit
Analyst:	JWW
Summary Date:	2/26/2024
Text File Name:	
Filters Applied:	: : County: DeschutesWeek Day Code: WednesdayCollision Type: Rear-End

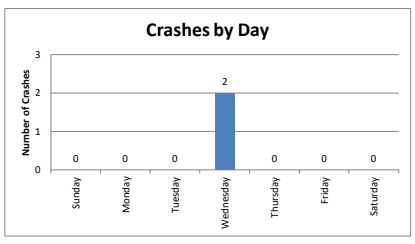
US 97/ Antler Avenue

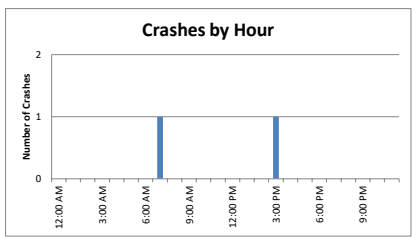
(January 2017 through December 2021)

Crash Summary by Date and Time

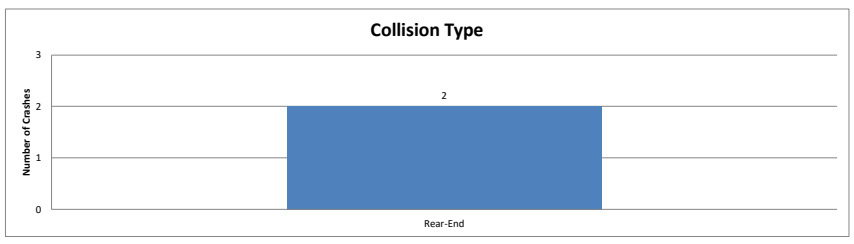


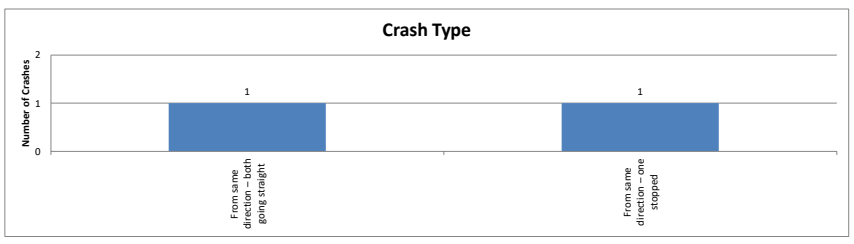




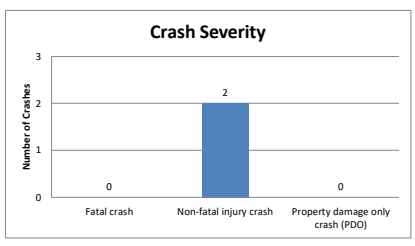


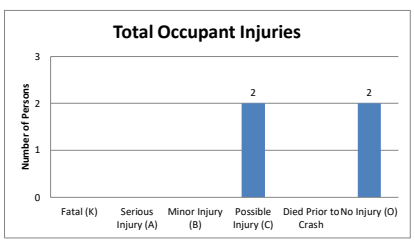
Crash Summary by Type



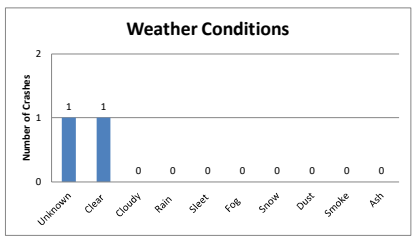


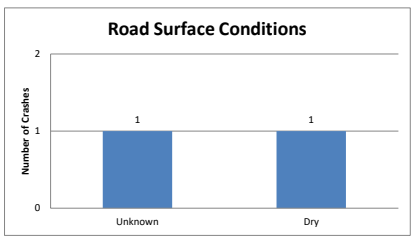
Crash Severity

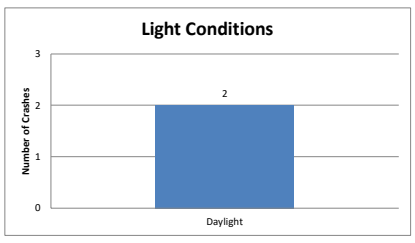




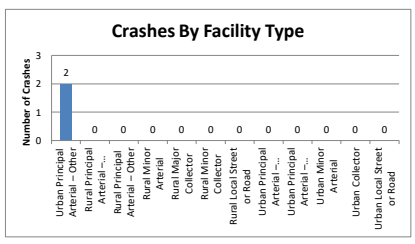
Crash Environment Characteristics

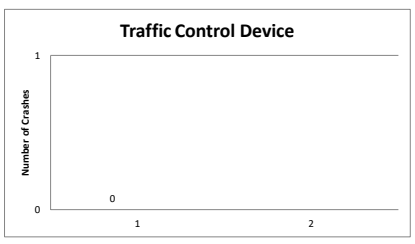


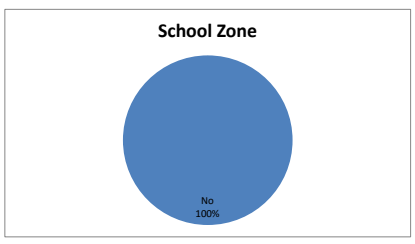


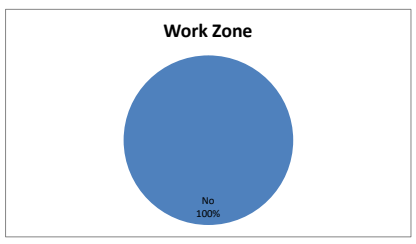


Crash Area Characteristics

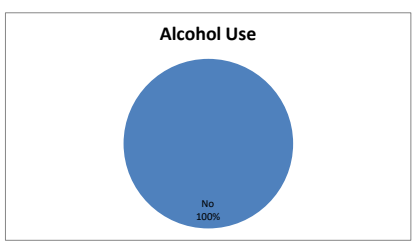


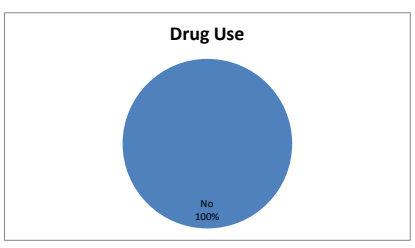




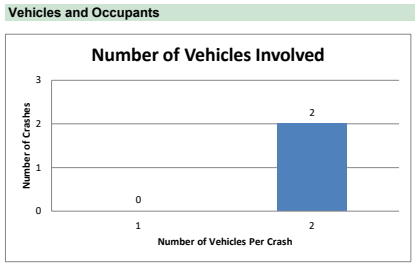


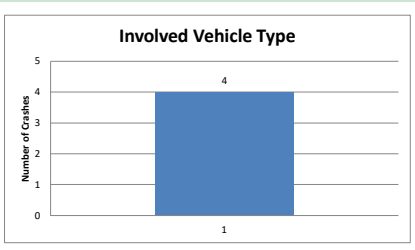
Driving Impairments

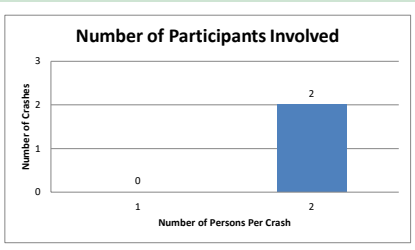




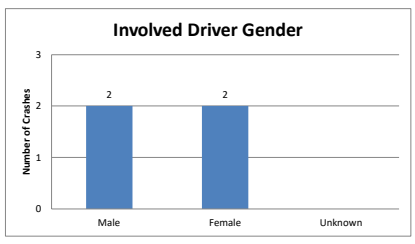
Vehicles and Occupants

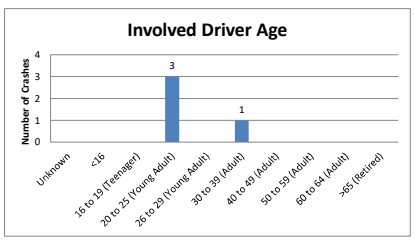


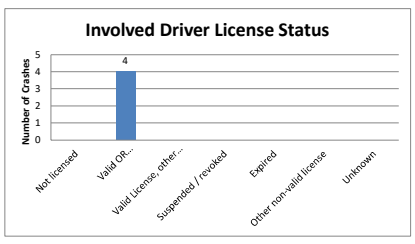


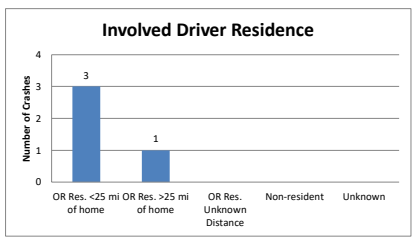


Involved Driver Characteristics

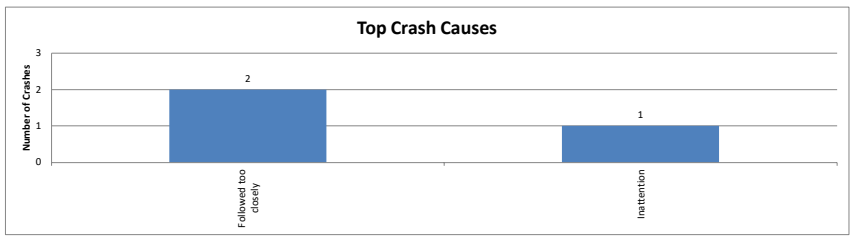


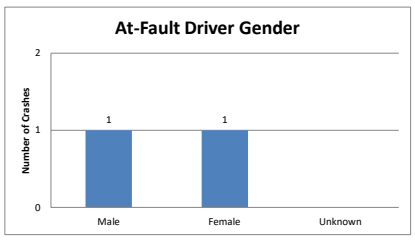


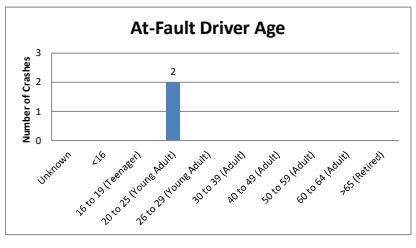




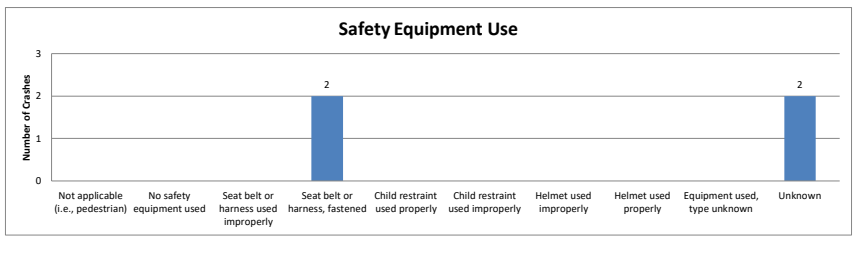
At-Fault Driver Characteristics

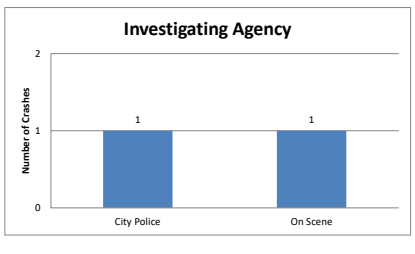






Other Crash Characteristics



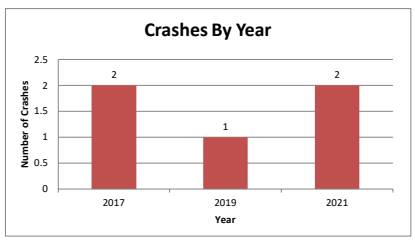


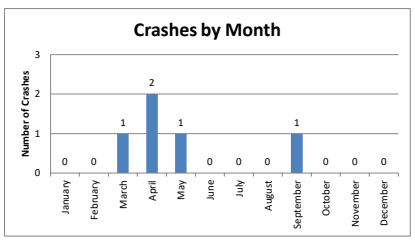
Project Name:	1724
Project Number	Redmond East Gateway
Query Information:	9th_Antler
Date Queried:	January 1, 2017 - December 31, 2021
Data Provider:	ODOT Crash Analysis Reporting Unit
Analyst:	JWW
Summary Date:	2/26/2024
Text File Name:	
Filters Applied:	: : County: Deschutes

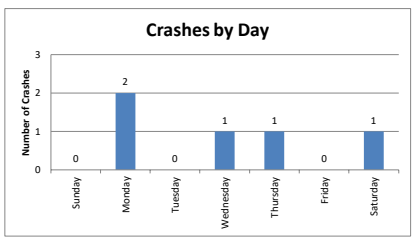
NE 9th Street/ E Antler Avenue

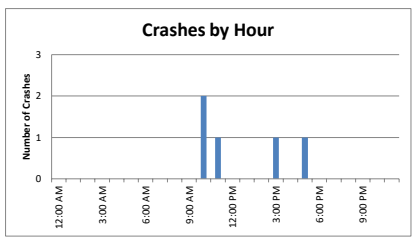
(January 2017 through December 2021)

Crash Summary by Date and Time

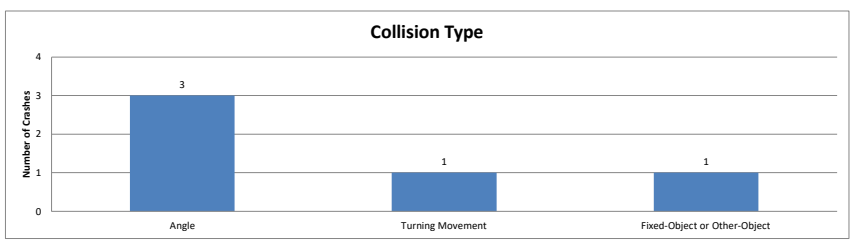


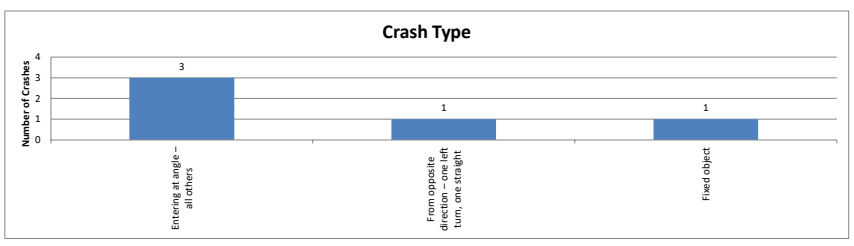




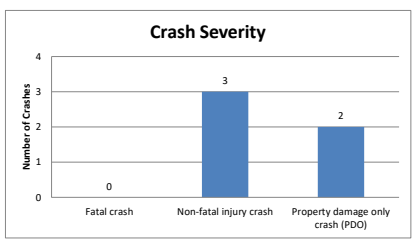


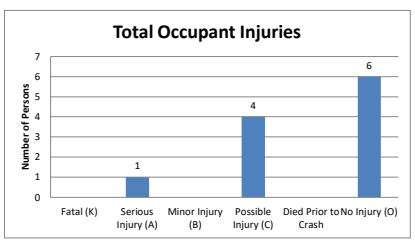
Crash Summary by Type



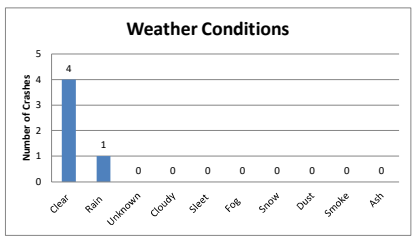


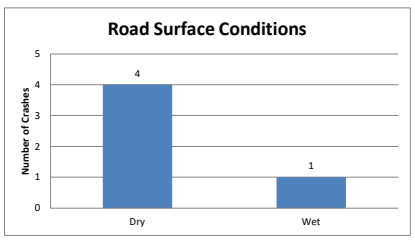
Crash Severity

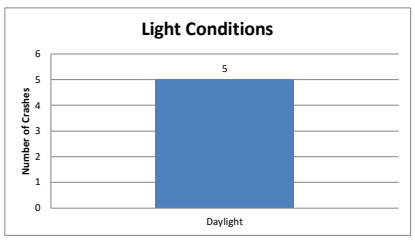




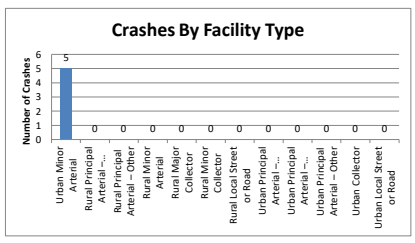
Crash Environment Characteristics

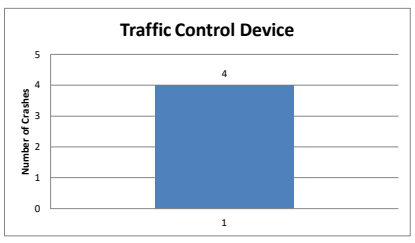


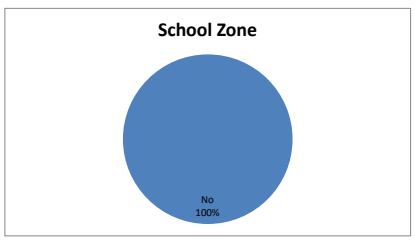


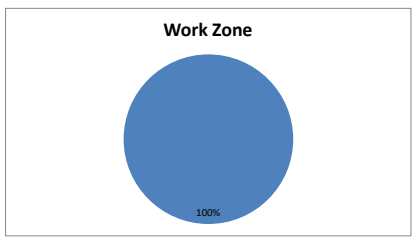


Crash Area Characteristics

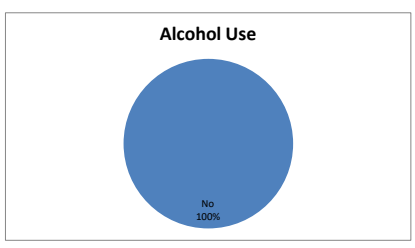


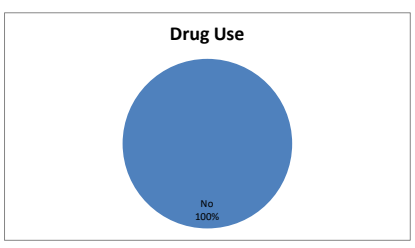




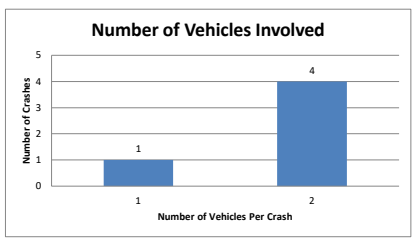


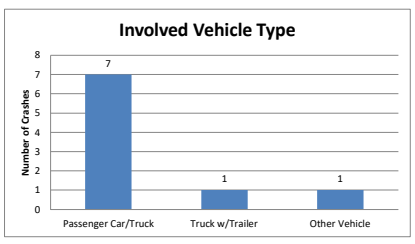
Driving Impairments

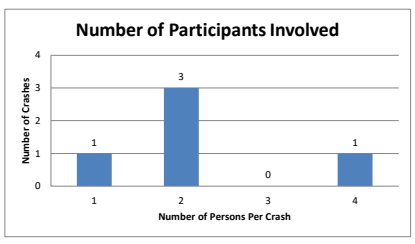




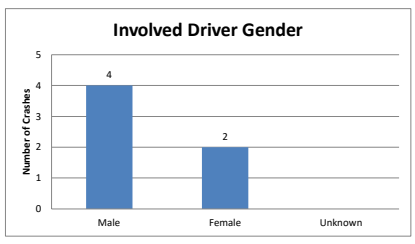
Vehicles and Occupants

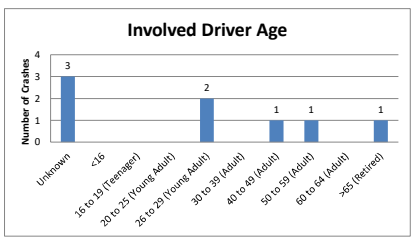


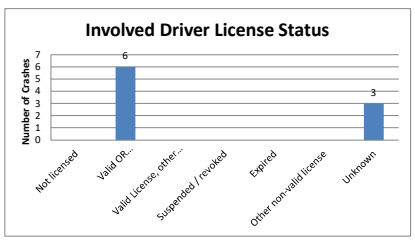


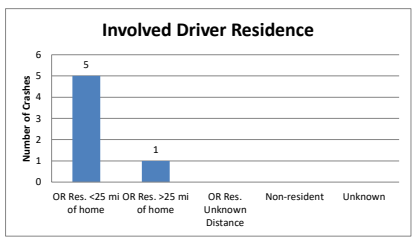


Involved Driver Characteristics

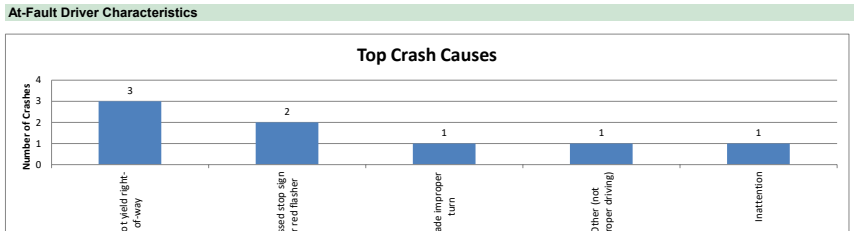


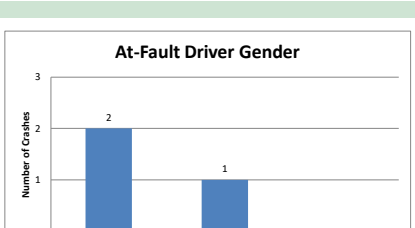


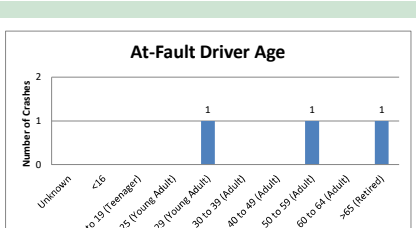




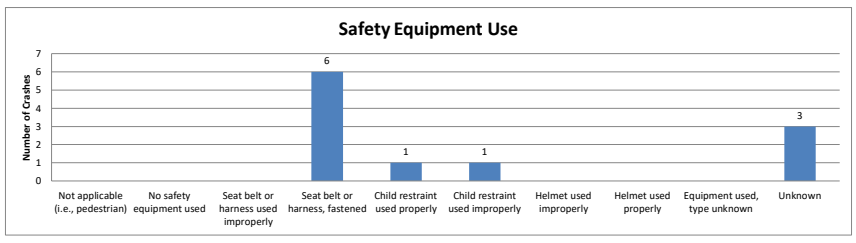
At-Fault Driver Characteristics

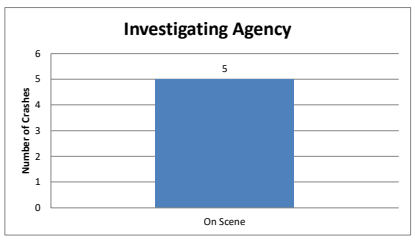






Other Crash Characteristics



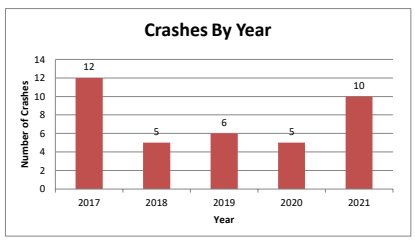


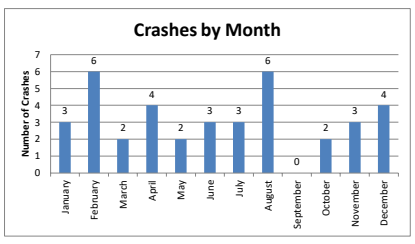
Project Name: 1724
Project Number: Redmond East Gateway
Query Information: US97_Evergreen
Date Queried: January 1, 2017 - December 31, 2021
Data Provider: ODOT Crash Analysis Reporting Unit
Analyst: JWW
Summary Date: 2/26/2024
Text File Name:
Filters Applied: : : County: Deschutes

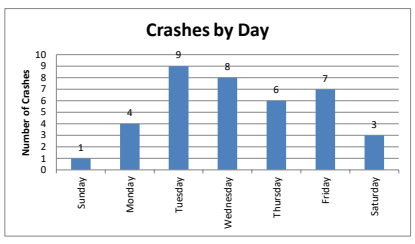
US 97/ Evergreen Avenue

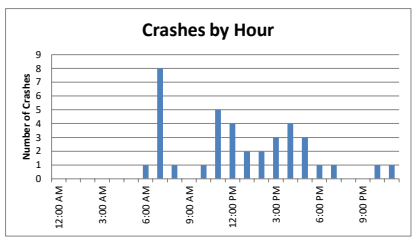
(January 2017 through December 2021)

Crash Summary by Date and Time

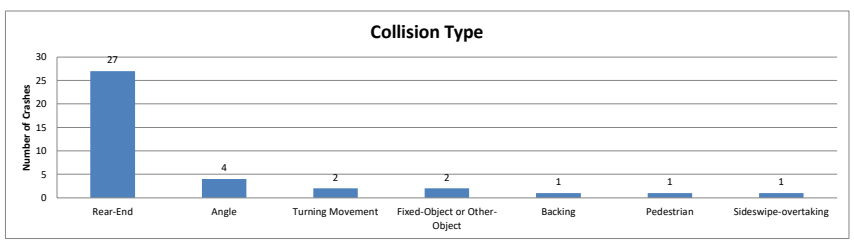


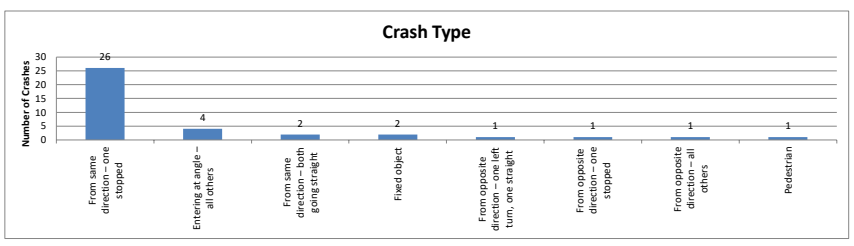




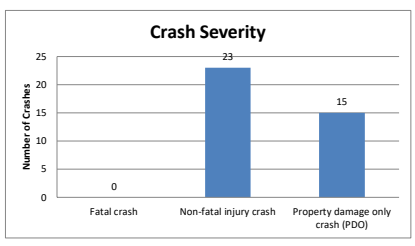


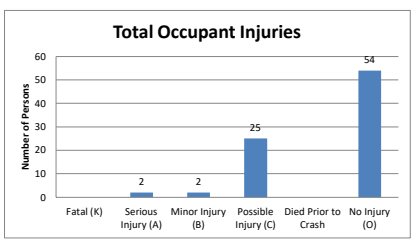
Crash Summary by Type



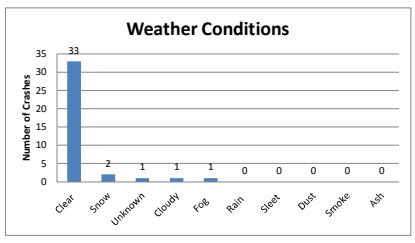


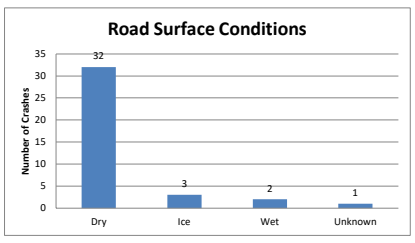
Crash Severity

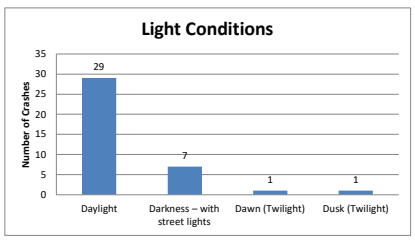




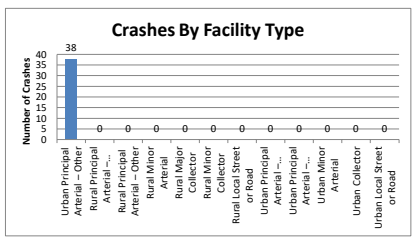
Crash Environment Characteristics

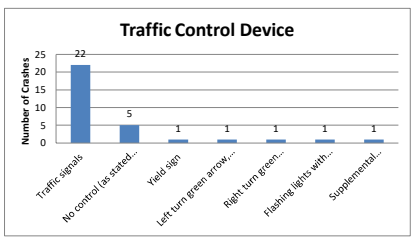


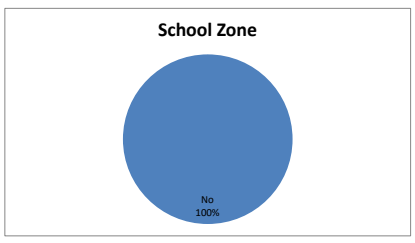


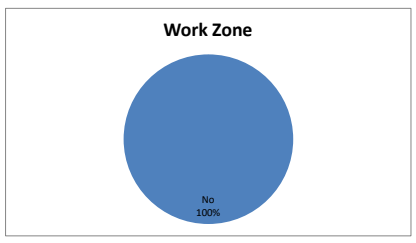


Crash Area Characteristics

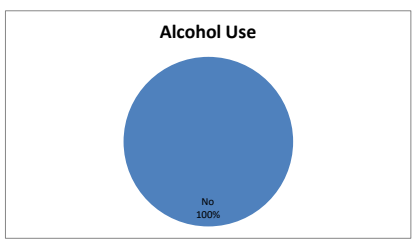


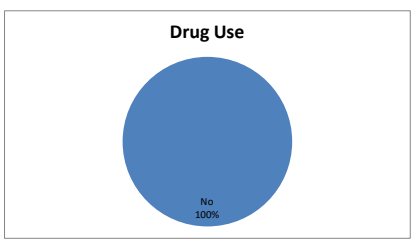




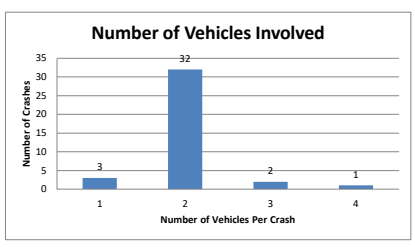


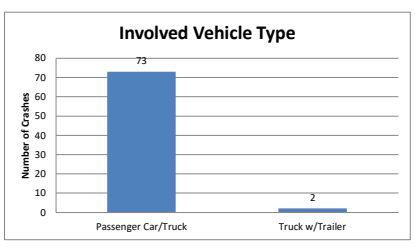
Driving Impairments

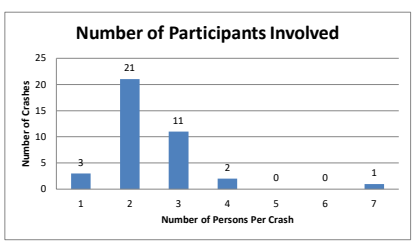




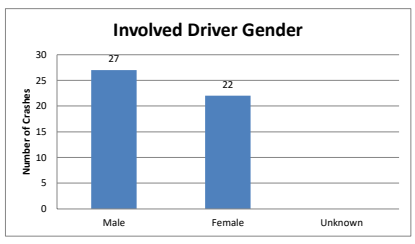
Vehicles and Occupants

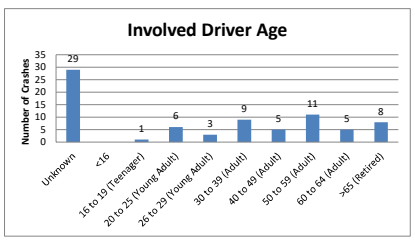


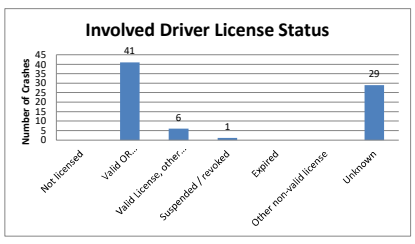


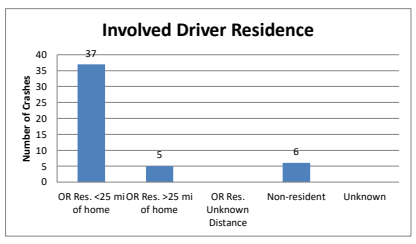


Involved Driver Characteristics

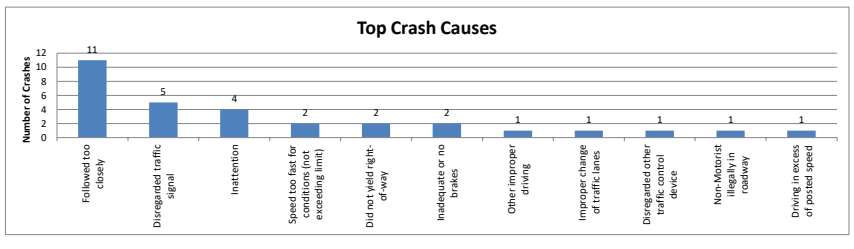


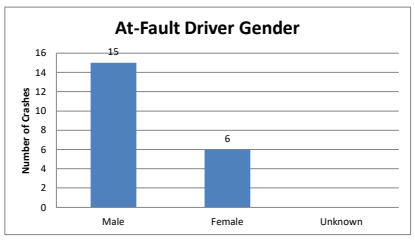


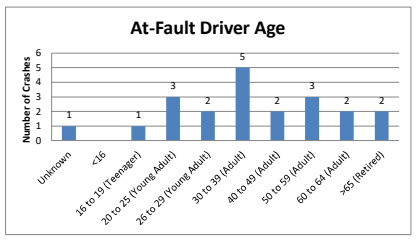




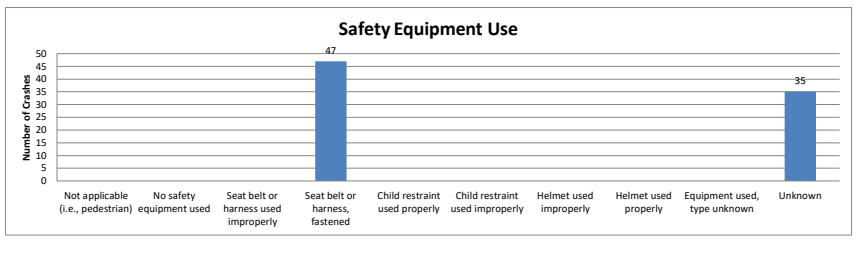
At-Fault Driver Characteristics

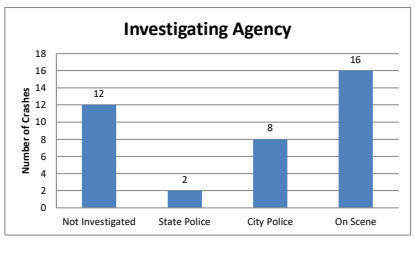






Other Crash Characteristics



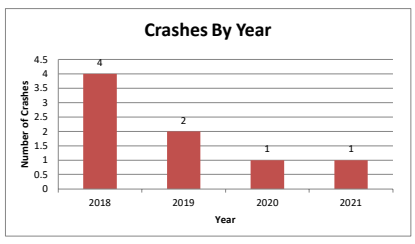


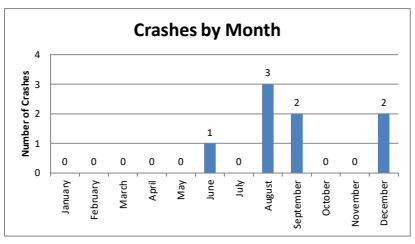
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Project Number	Redmond East Gateway
Query Information:	OR126_Lake Rd
Date Queried:	January 1, 2017 - December 31, 2021
Data Provider:	ODOT Crash Analysis Reporting Unit
Analyst:	JWW
Summary Date:	2/26/2024
Text File Name:	
Filters Applied:	: : County: Deschutes

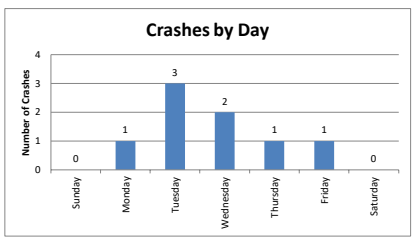
OR 126/ Lake Road

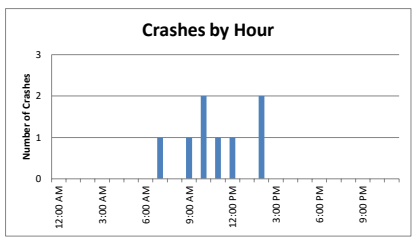
(January 2017 through December 2021)

Crash Summary by Date and Time

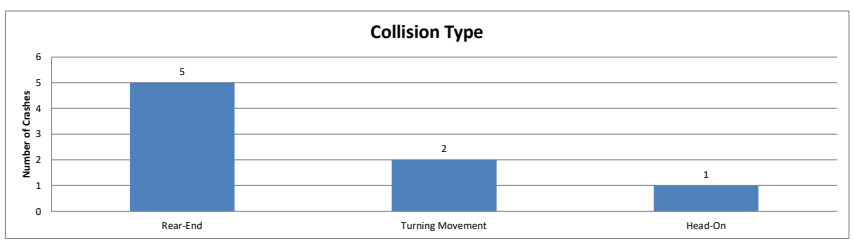


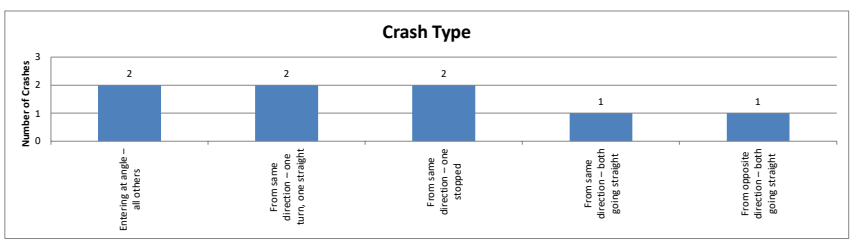




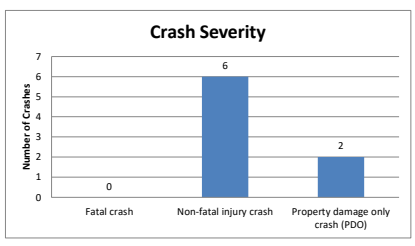


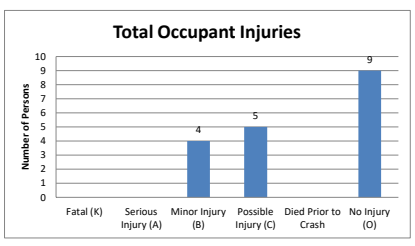
Crash Summary by Type



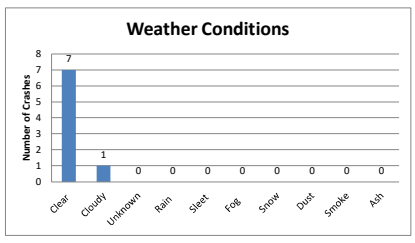


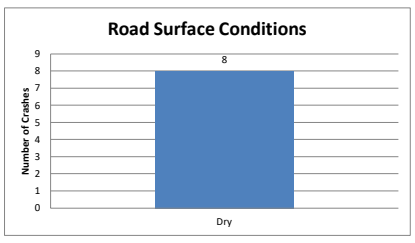
Crash Severity

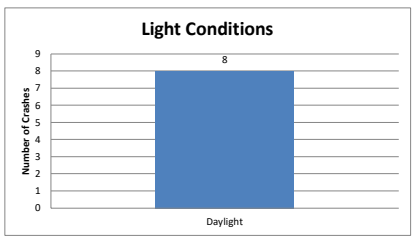




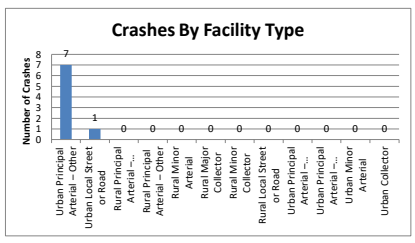
Crash Environment Characteristics

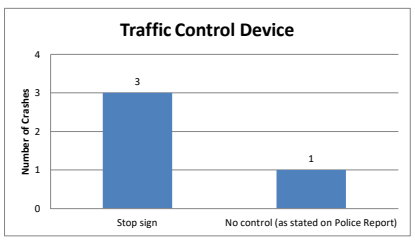


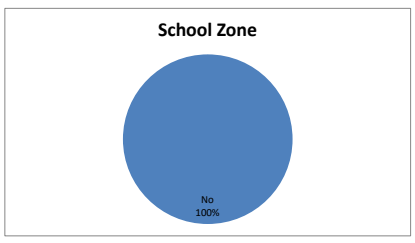


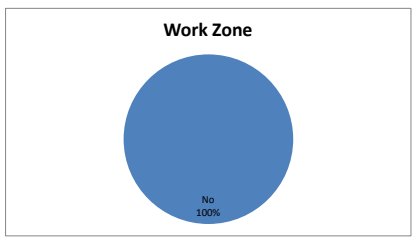


Crash Area Characteristics

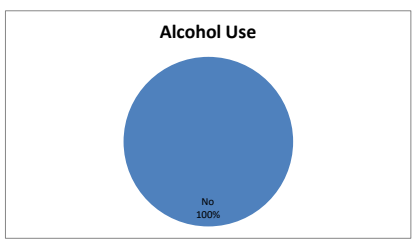


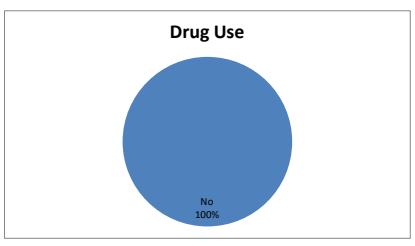




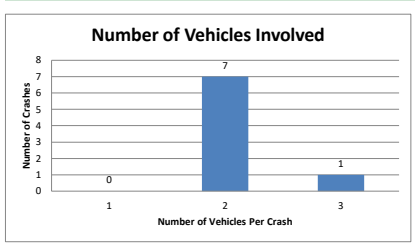


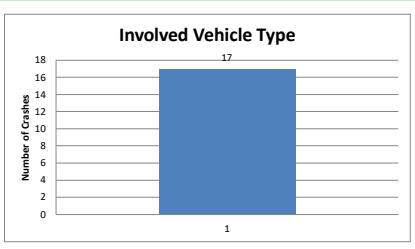
Driving Impairments

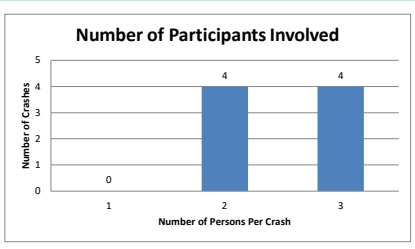




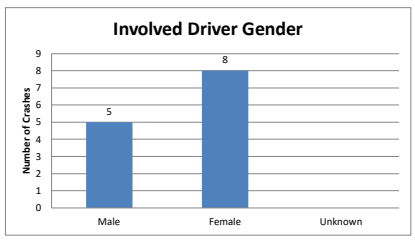
Vehicles and Occupants

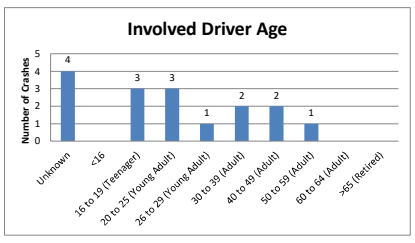


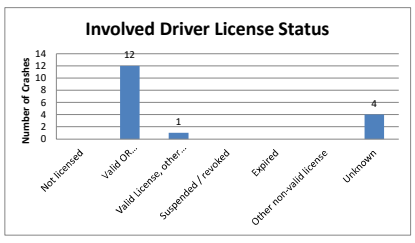


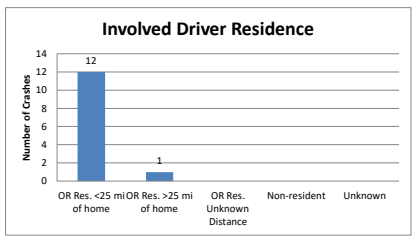


Involved Driver Characteristics

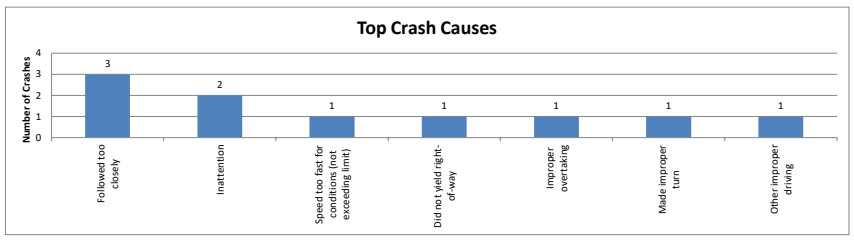


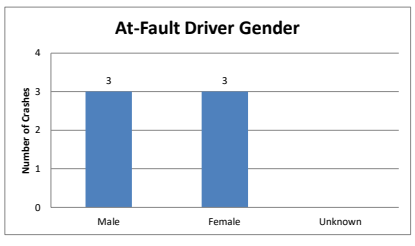


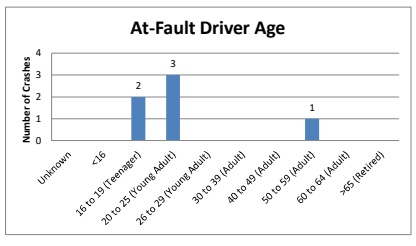




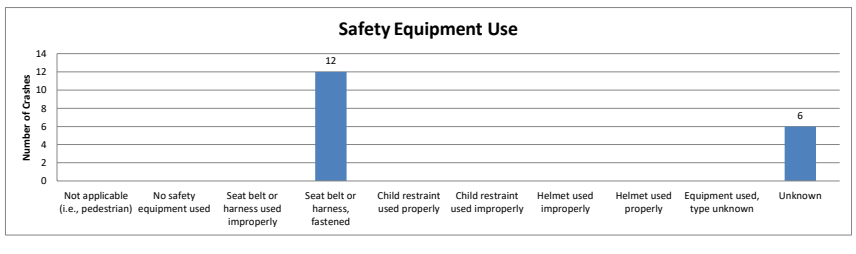
At-Fault Driver Characteristics

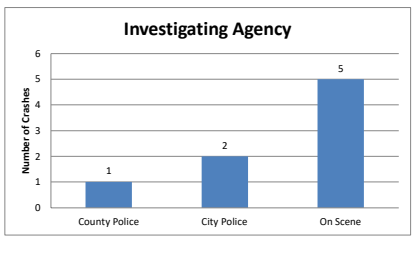






Other Crash Characteristics



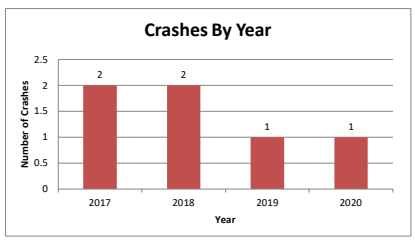


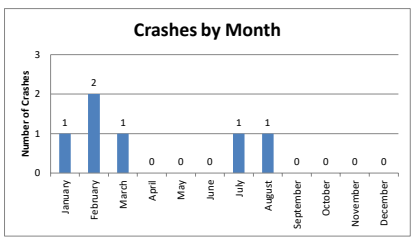
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Project Number	Redmond East Gateway
Query Information:	OR126_9th
Date Queried:	January 1, 2017 - December 31, 2021
Data Provider:	ODOT Crash Analysis Reporting Unit
Analyst:	JWW
Summary Date:	2/26/2024
Text File Name:	
Filters Applied:	: : County: Deschutes

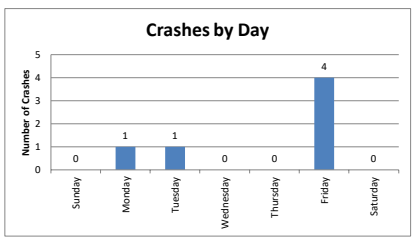
OR 126/ SE 9th Street

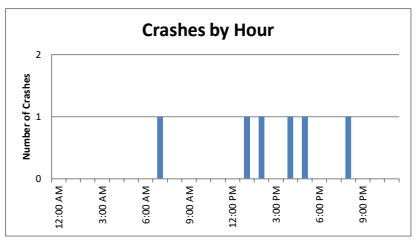
(January 2017 through December 2021)

Crash Summary by Date and Time

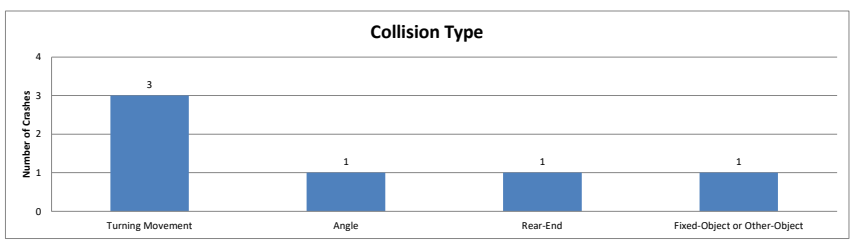


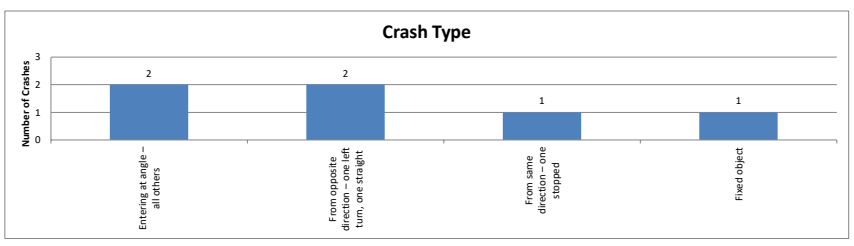




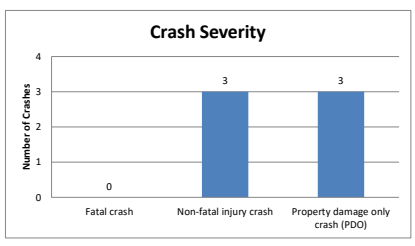


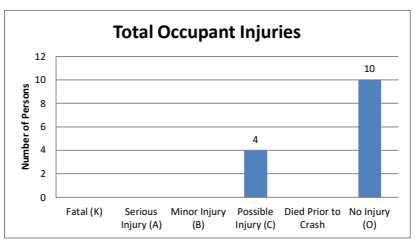
Crash Summary by Type



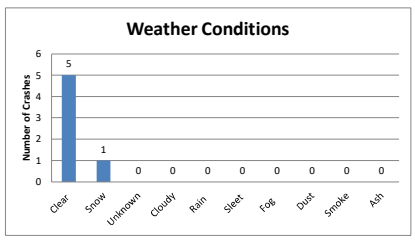


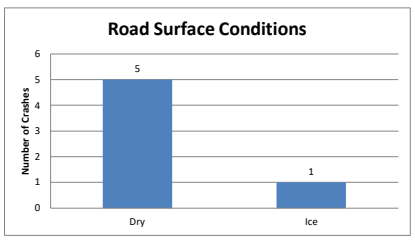
Crash Severity

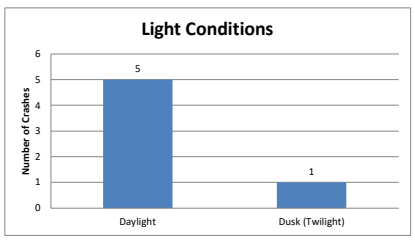




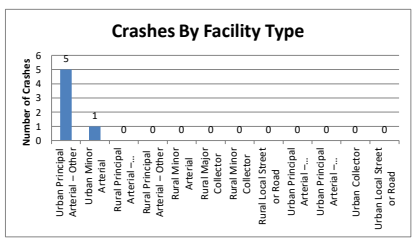
Crash Environment Characteristics

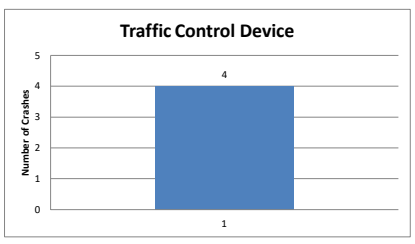


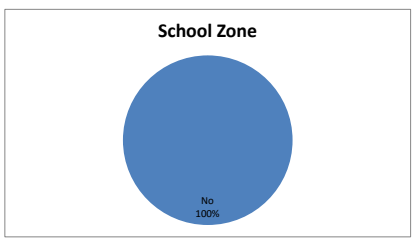


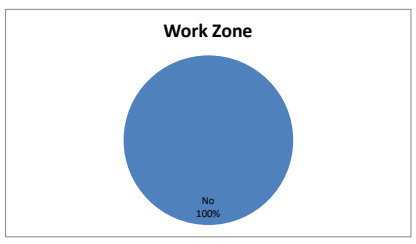


Crash Area Characteristics

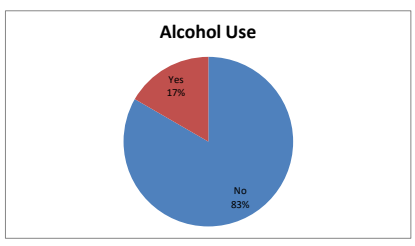


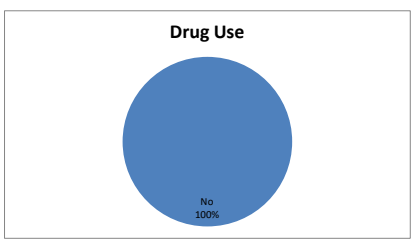




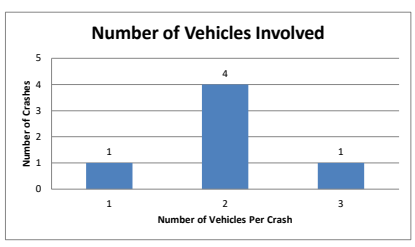


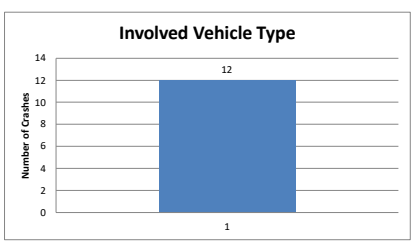
Driving Impairments

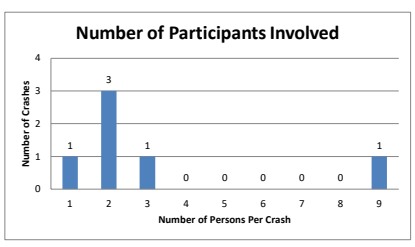




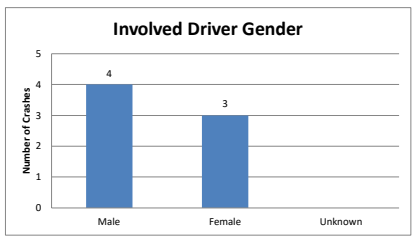
Vehicles and Occupants

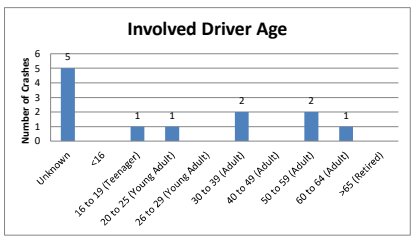


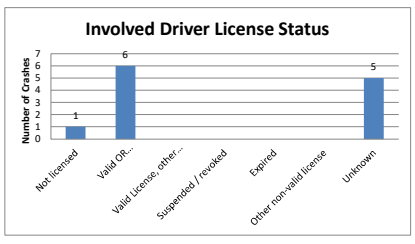


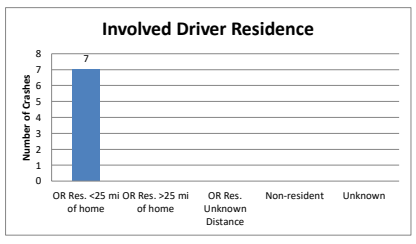


Involved Driver Characteristics

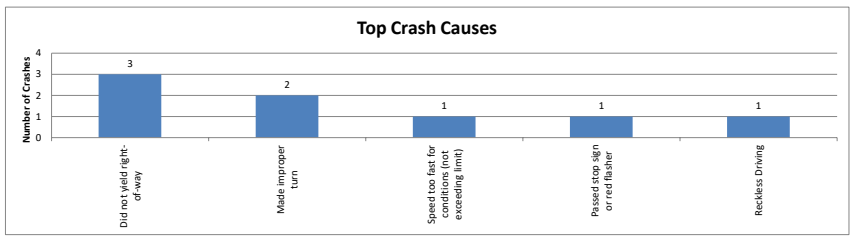


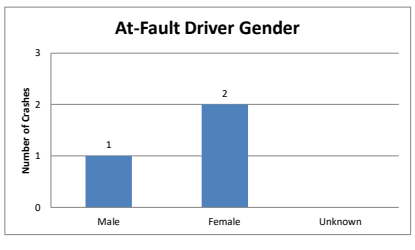


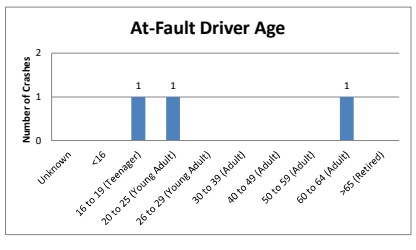




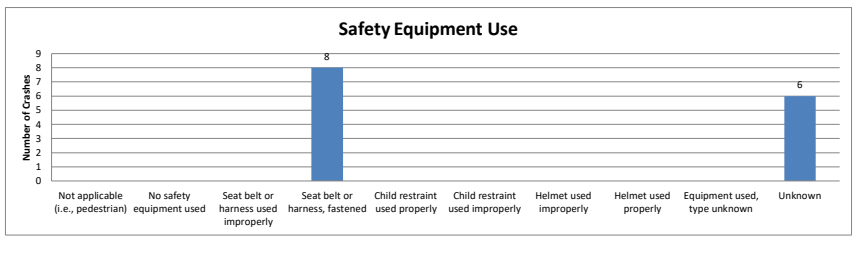
At-Fault Driver Characteristics

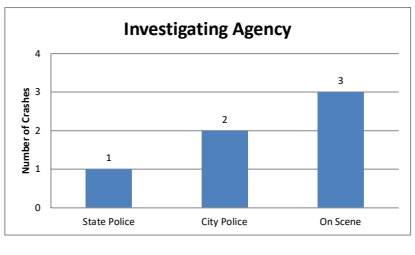






Other Crash Characteristics



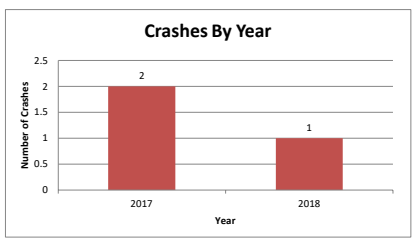


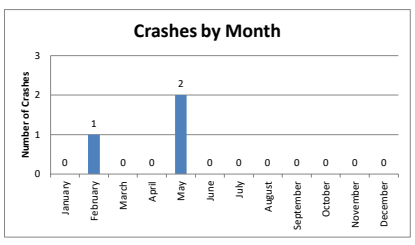
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Project Number	Redmond East Gateway
Query Information:	OR126_Veterans Way
Date Queried:	January 1, 2017 - December 31, 2021
Data Provider:	ODOT Crash Analysis Reporting Unit
Analyst:	JWW
Summary Date:	2/26/2024
Text File Name:	
Filters Applied:	: : County: DeschutesWeather Condition: Clear

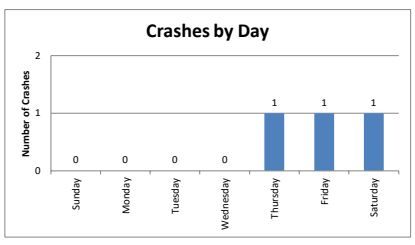
OR 126/ Veterans Way

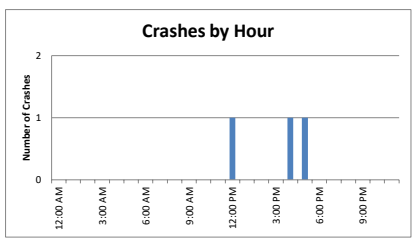
(January 2017 through December 2021)

Crash Summary by Date and Time

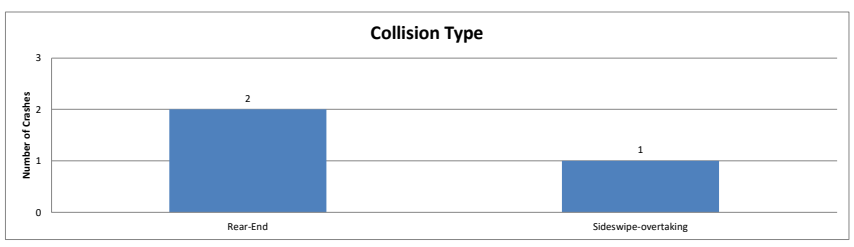


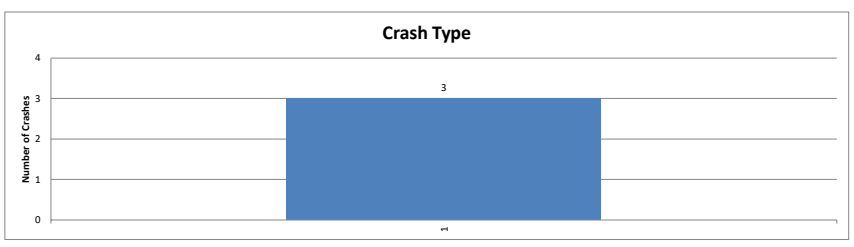




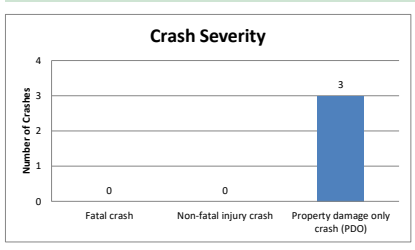


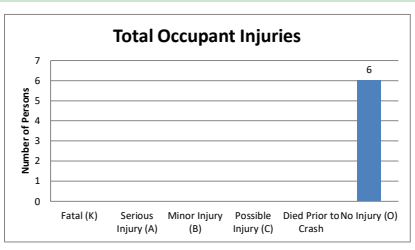
Crash Summary by Type



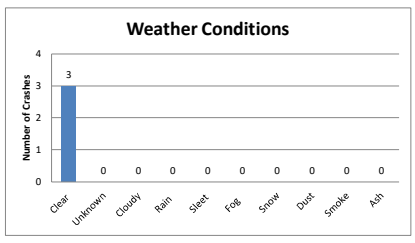


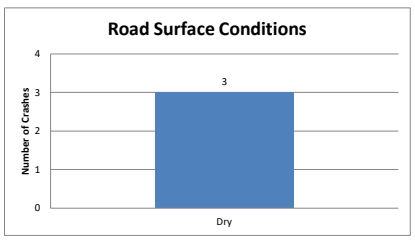
Crash Severity

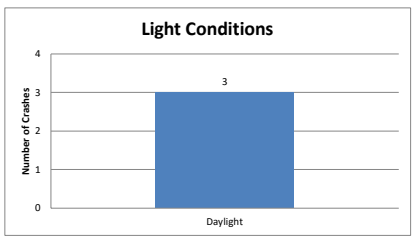




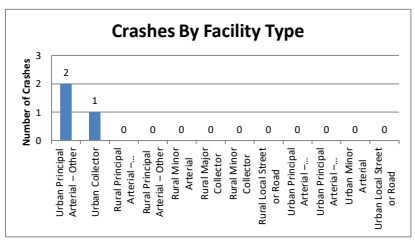
Crash Environment Characteristics

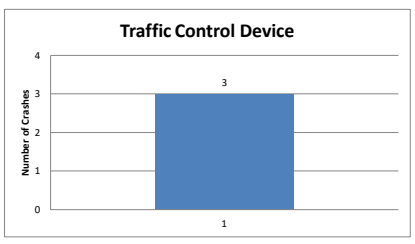


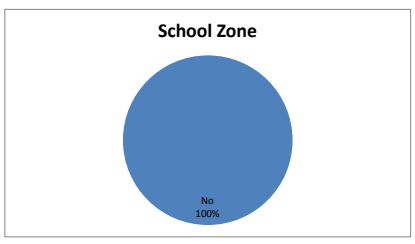


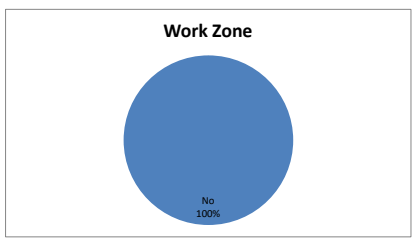


Crash Area Characteristics

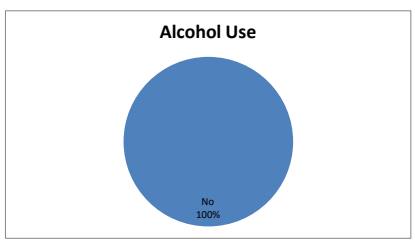


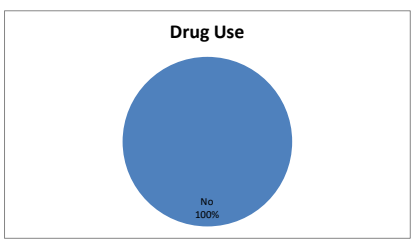




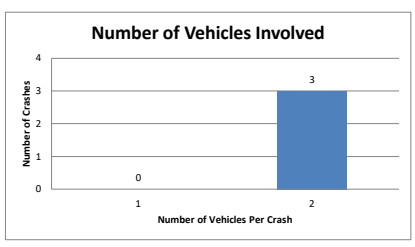


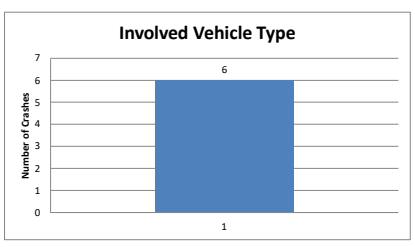
Driving Impairments

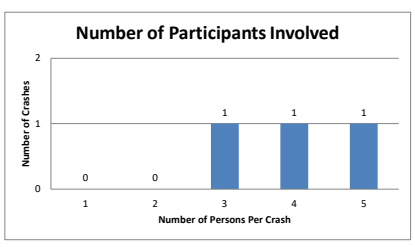




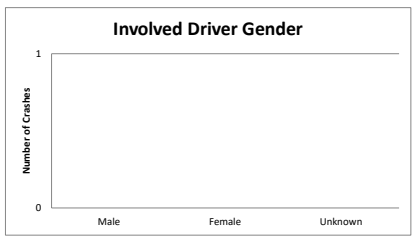
Vehicles and Occupants

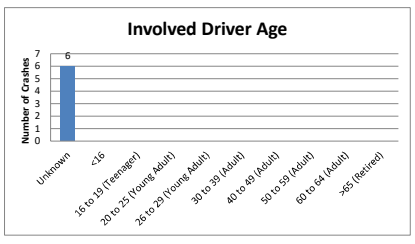


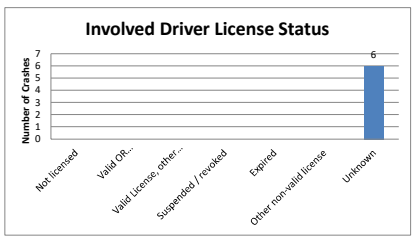


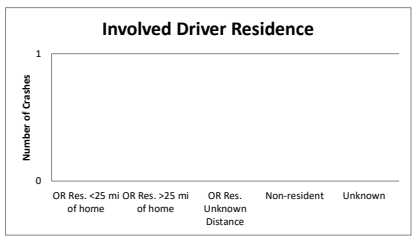


Involved Driver Characteristics

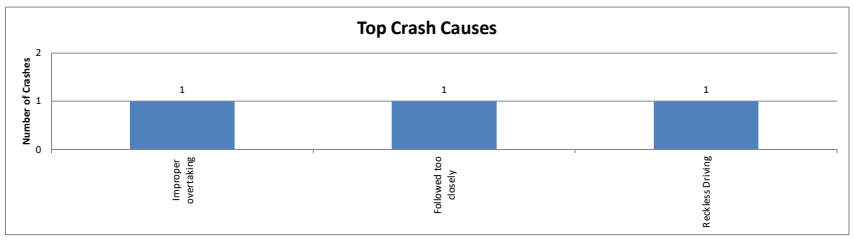


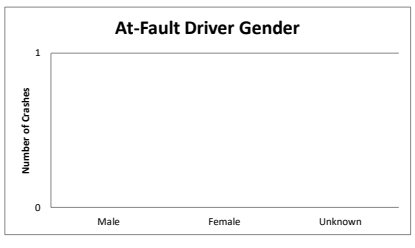


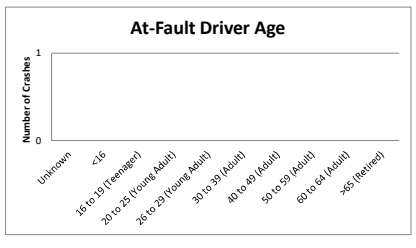




At-Fault Driver Characteristics

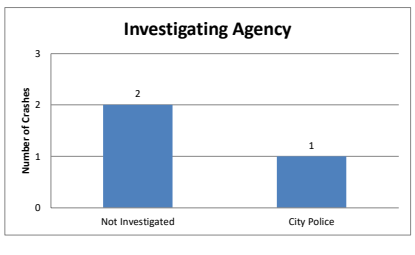






Other Crash Characteristics



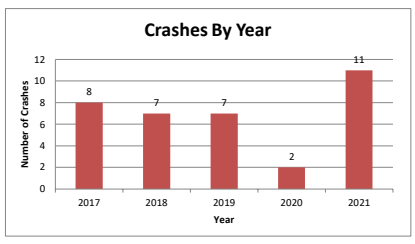


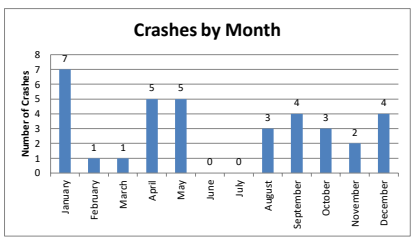
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Project Number: Redmond East Gateway
Query Information: US97_Highland
Date Queried: January 1, 2017 - December 31, 2021
Data Provider: ODOT Crash Analysis Reporting Unit
Analyst: JWW
Summary Date: 2/26/2024
Text File Name:
Filters Applied: : : County: Deschutes

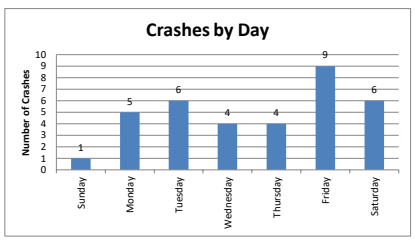
US 97/
SW Highland Avenue

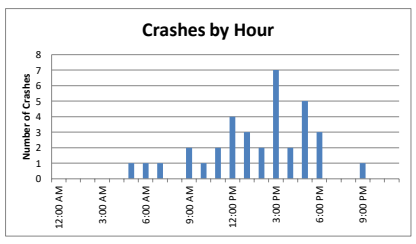
(January 2017 through December 2021)

Crash Summary by Date and Time

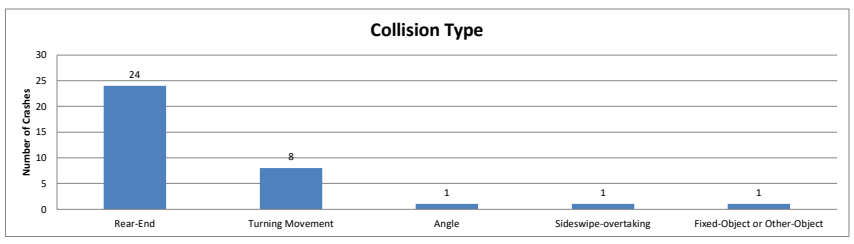


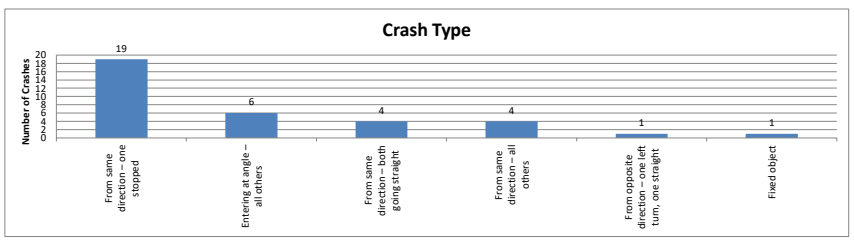




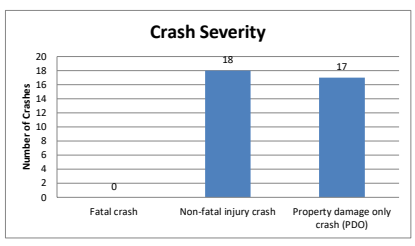


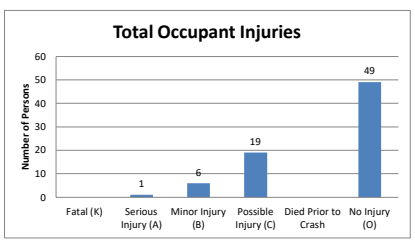
Crash Summary by Type



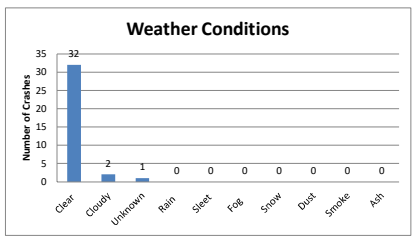


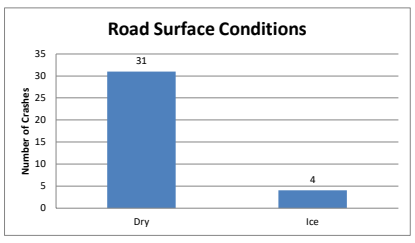
Crash Severity

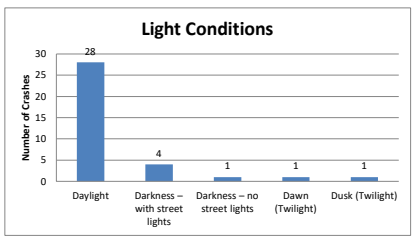




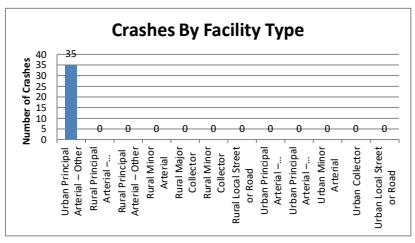
Crash Environment Characteristics

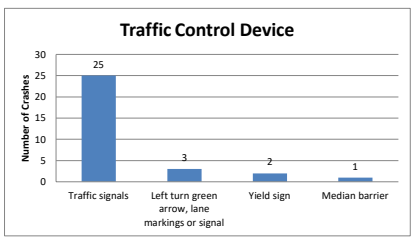


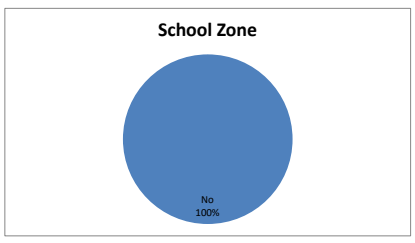


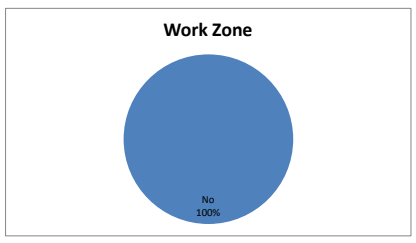


Crash Area Characteristics

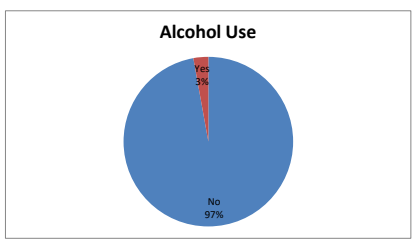


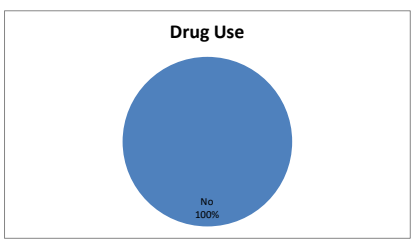




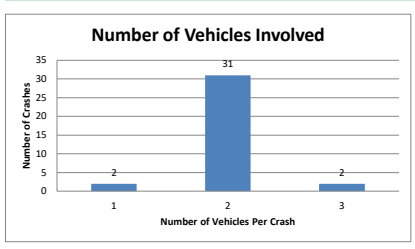


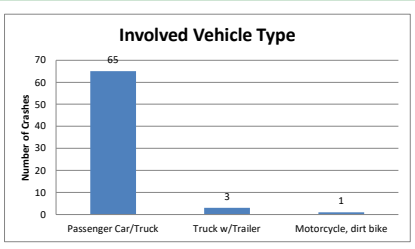
Driving Impairments

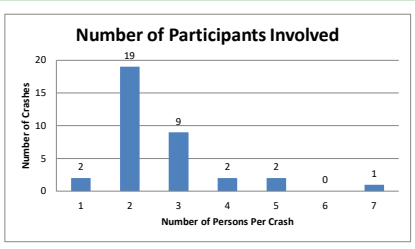




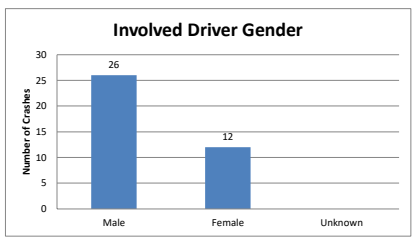
Vehicles and Occupants

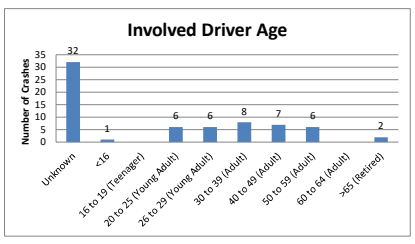


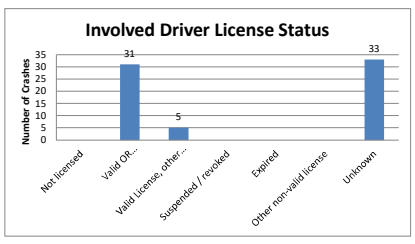


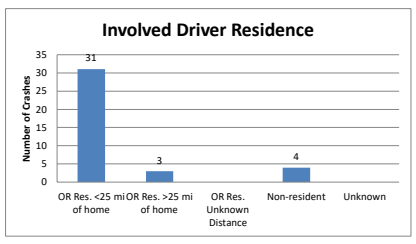


Involved Driver Characteristics

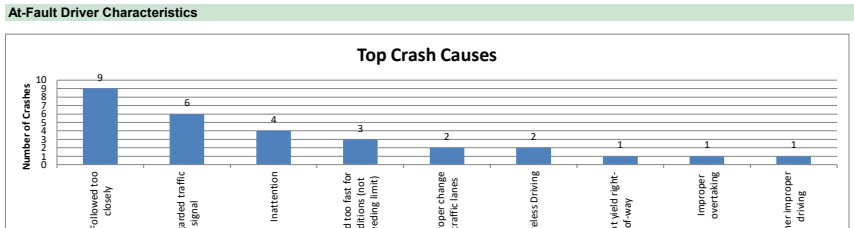


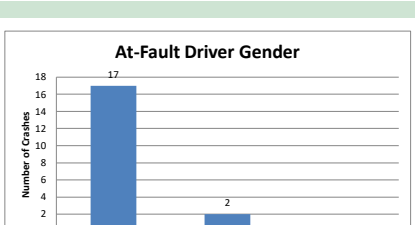


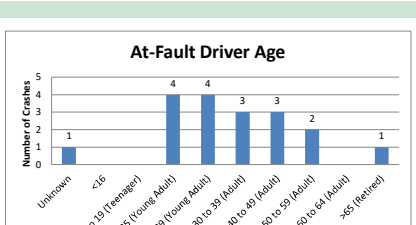




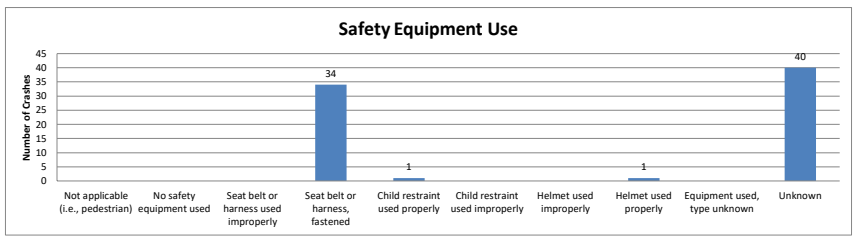
At-Fault Driver Characteristics

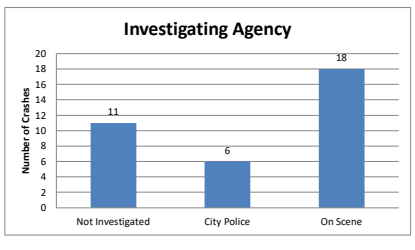






Other Crash Characteristics



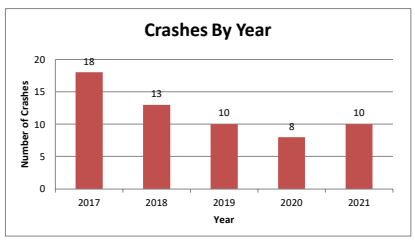


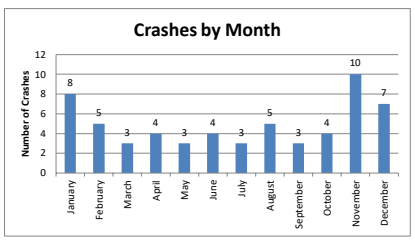
Project Name: 1724
Project Number Redmond East Gateway
Query Information: US97_Veterans Way
Date Queried: January 1, 2017 - December 31, 2021
Data Provider: ODOT Crash Analysis Reporting Unit
Analyst: JWW
Summary Date: 2/26/2024
Text File Name:
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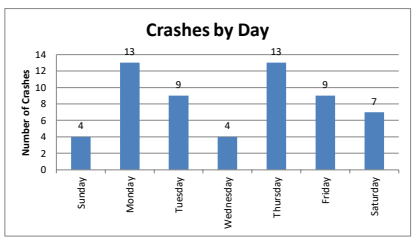
US 97/ SW Veterans Way

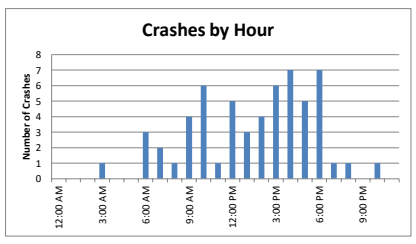
(January 2017 through December 2021)

Crash Summary by Date and Time

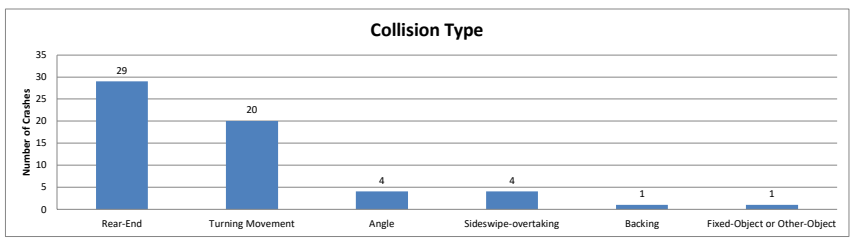


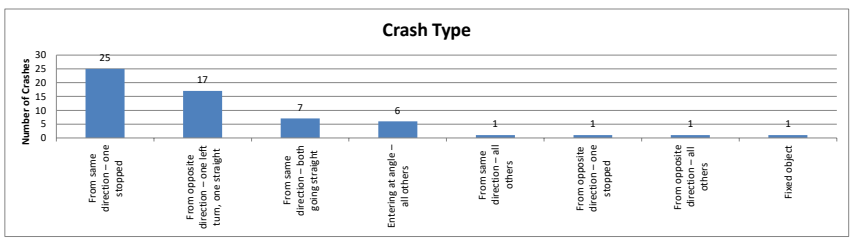




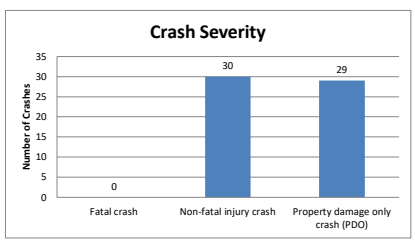


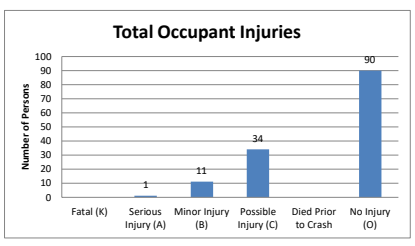
Crash Summary by Type



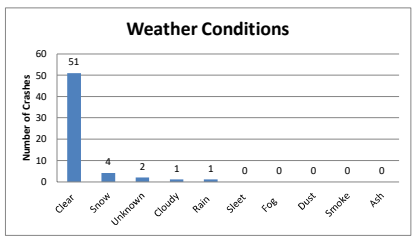


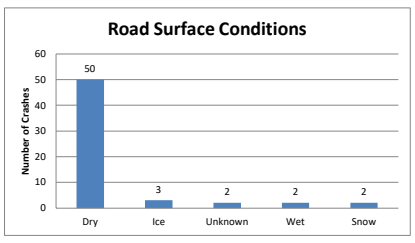
Crash Severity

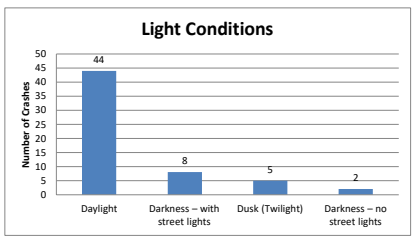




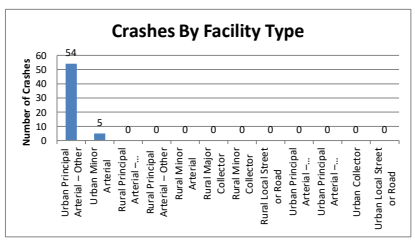
Crash Environment Characteristics

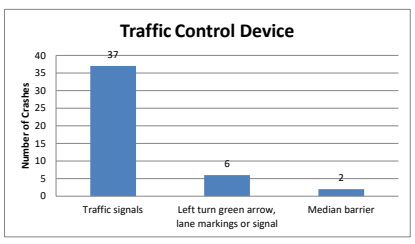


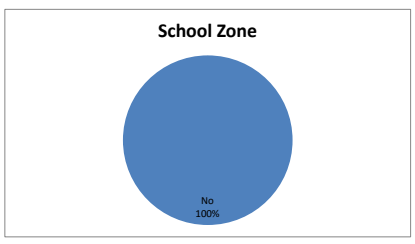


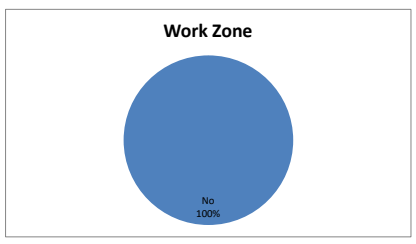


Crash Area Characteristics

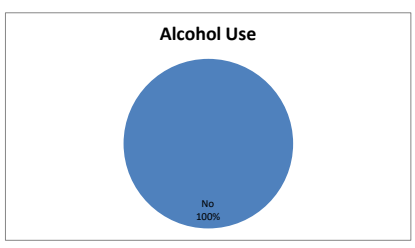


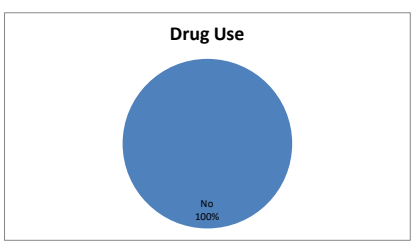




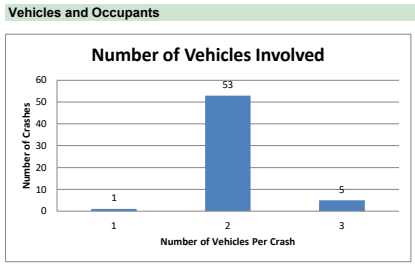


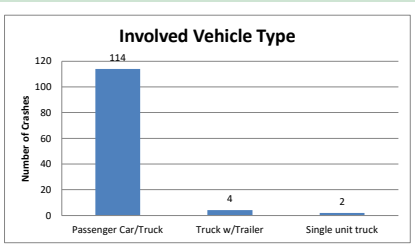
Driving Impairments

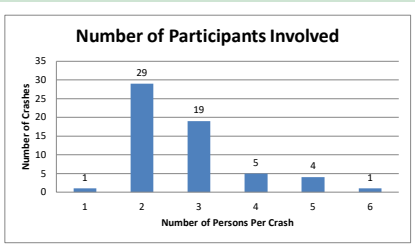




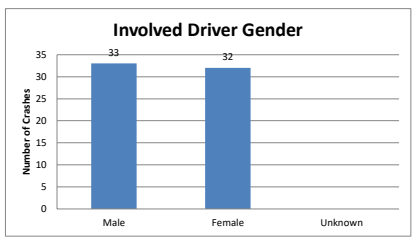
Vehicles and Occupants

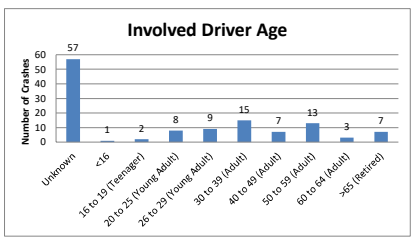


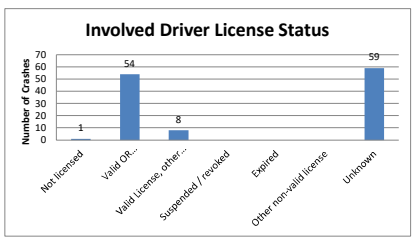


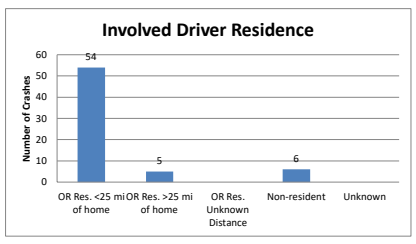


Involved Driver Characteristics

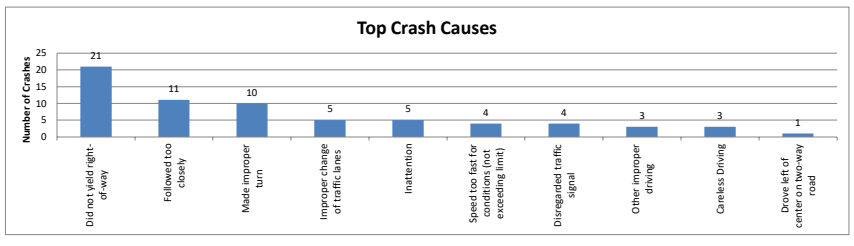


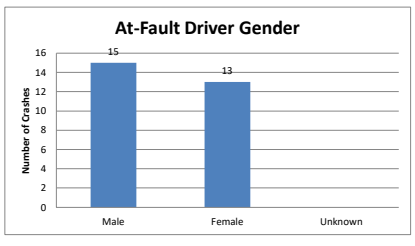


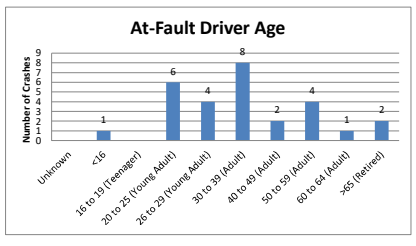




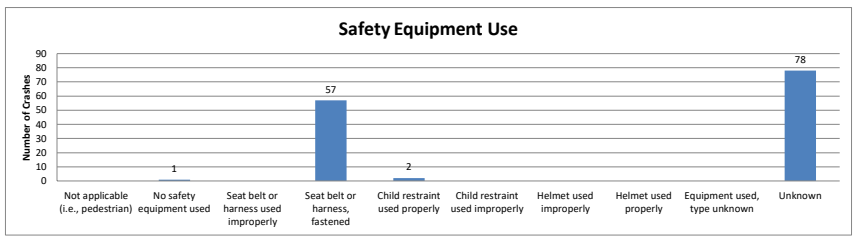
At-Fault Driver Characteristics

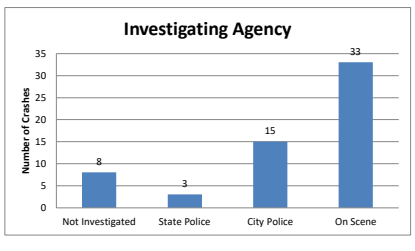






Other Crash Characteristics



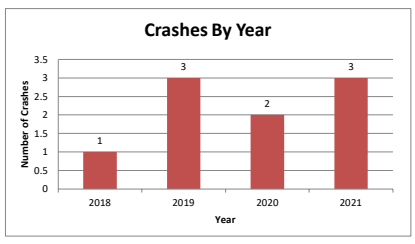


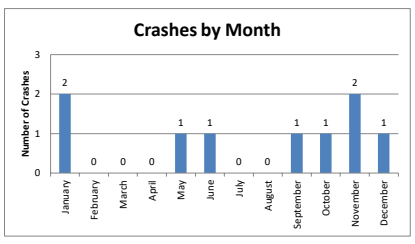
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Project Number	Redmond East Gateway
Query Information:	Airport Way_Veterans Way
Date Queried:	January 1, 2017 - December 31, 2021
Data Provider:	ODOT Crash Analysis Reporting Unit
Analyst:	JWW
Summary Date:	2/26/2024
Text File Name:	
Filters Applied:	: : County: Deschutes

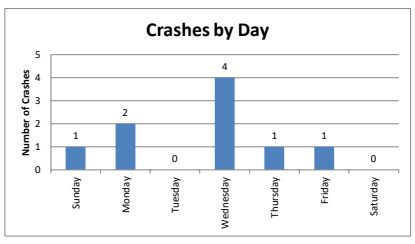
Airport Way/ SW Veterans Way

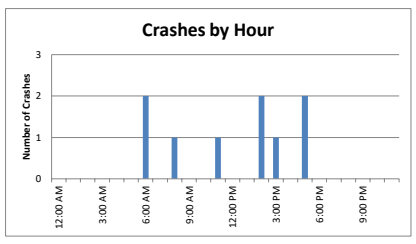
(January 2017 through December 2021)

Crash Summary by Date and Time

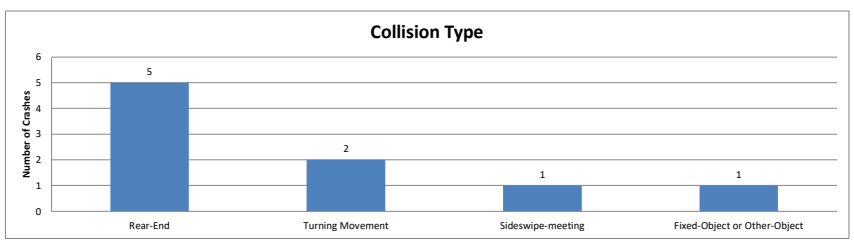


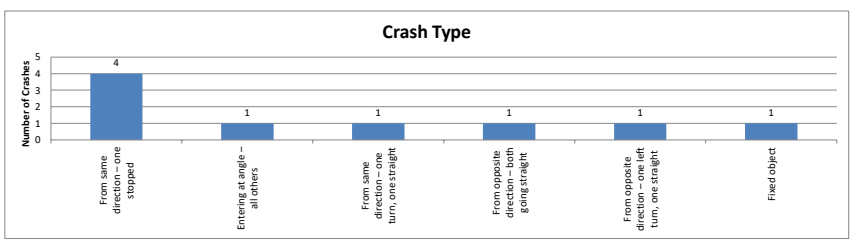




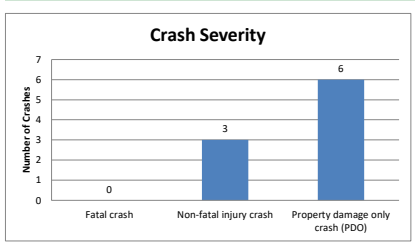


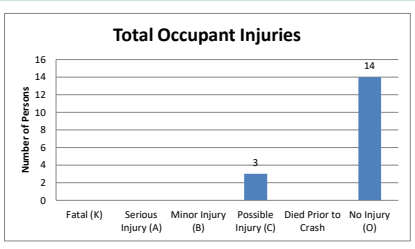
Crash Summary by Type



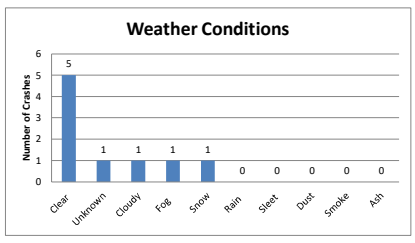


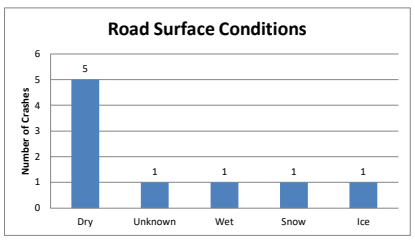
Crash Severity

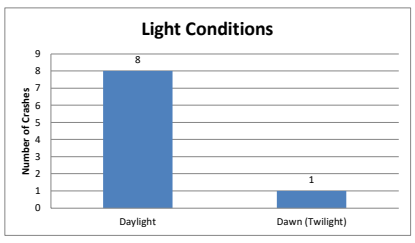




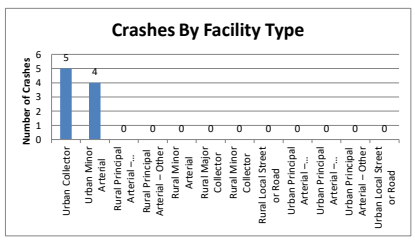
Crash Environment Characteristics

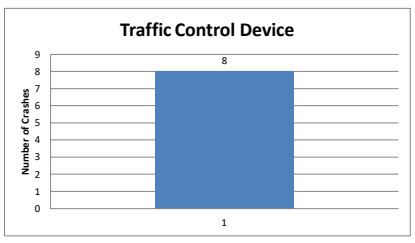


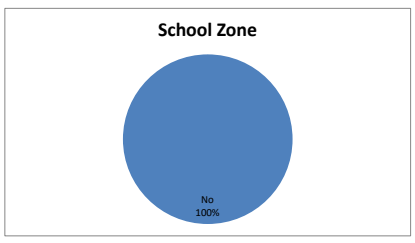


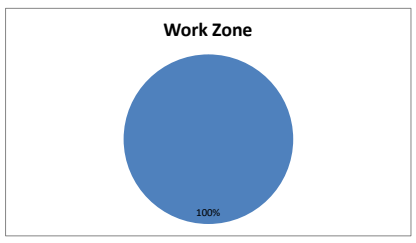


Crash Area Characteristics

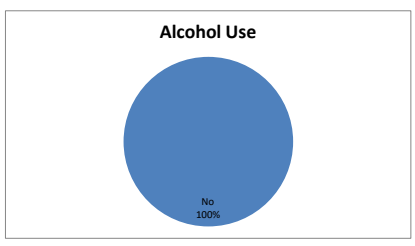


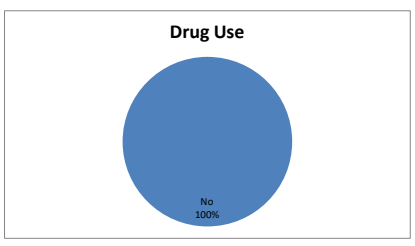




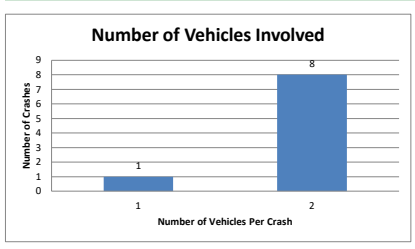


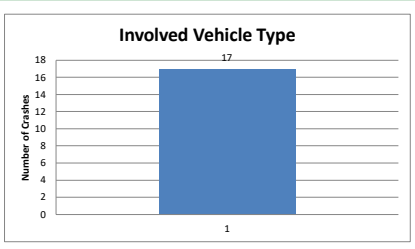
Driving Impairments

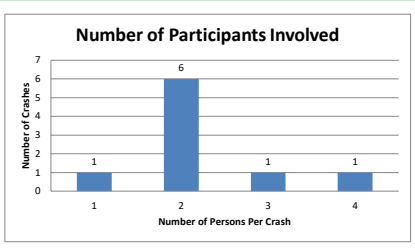




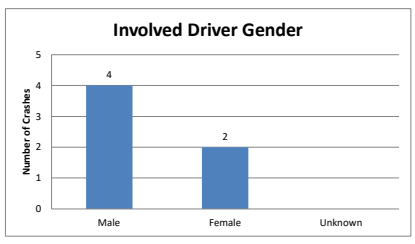
Vehicles and Occupants

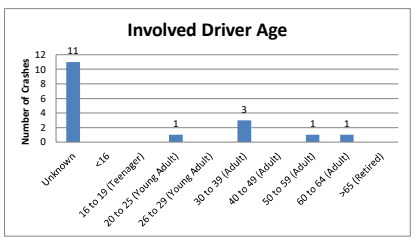


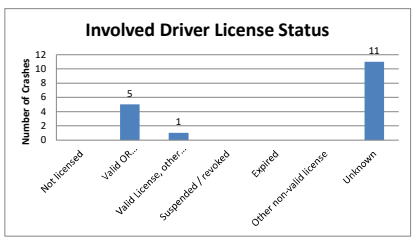


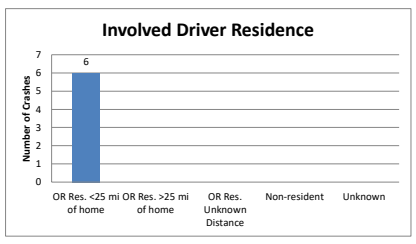


Involved Driver Characteristics

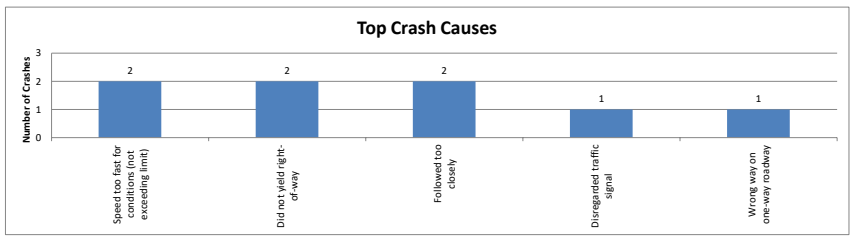


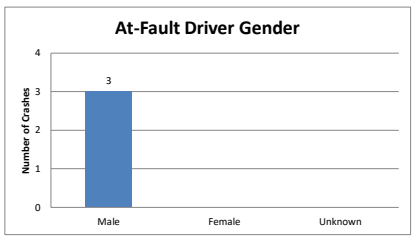


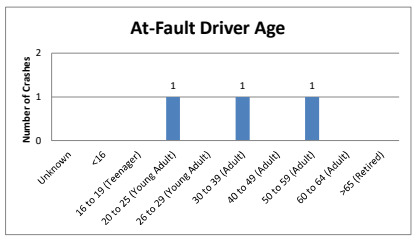




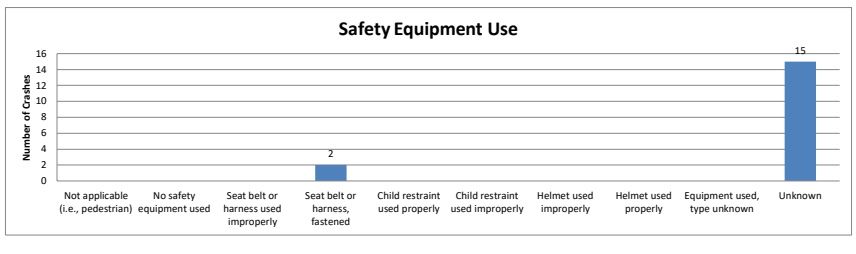
At-Fault Driver Characteristics

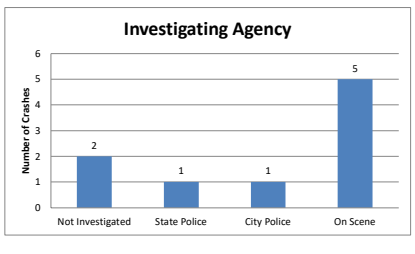






Other Crash Characteristics



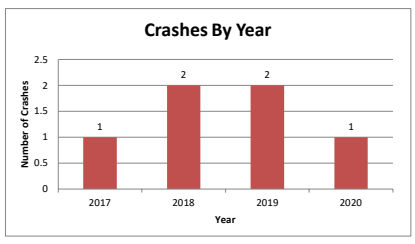


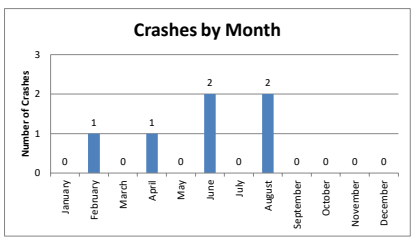
Project Name:	1724
Project Number	Redmond East Gateway
Query Information:	US97 SBramp_Yew Ave
Date Queried:	January 1, 2017 - December 31, 2021
Data Provider:	ODOT Crash Analysis Reporting Unit
Analyst:	JWW
Summary Date:	2/26/2024
Text File Name:	
Filters Applied:	: : County: Deschutes

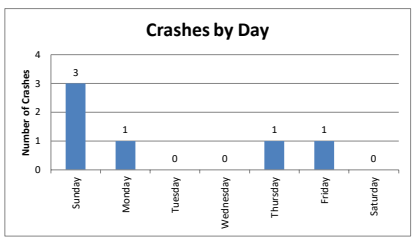
US 97 Southbound Ramp/ Yew Avenue

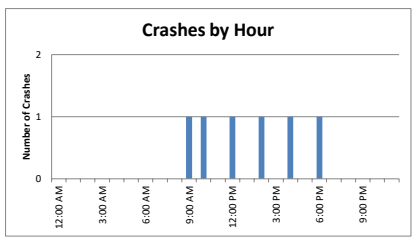
(January 2017 through December 2021)

Crash Summary by Date and Time

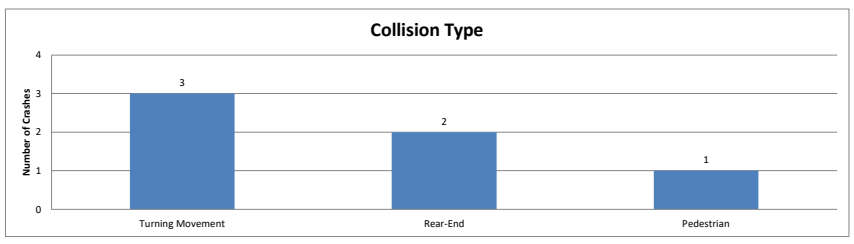


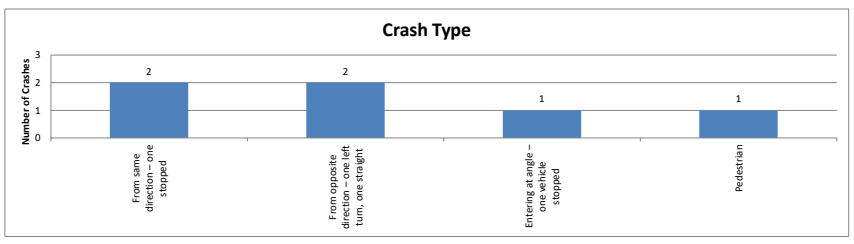




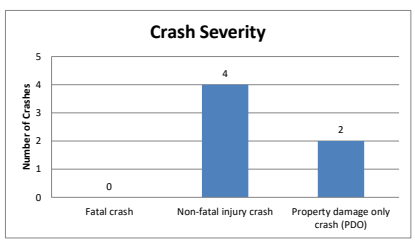


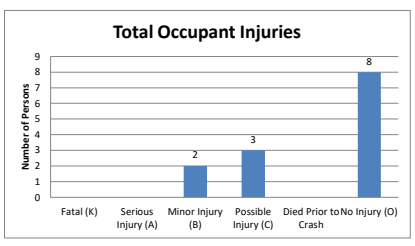
Crash Summary by Type



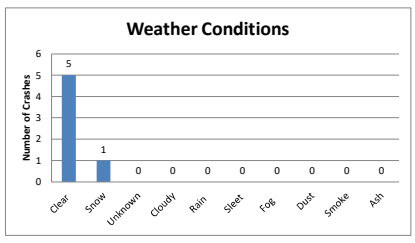


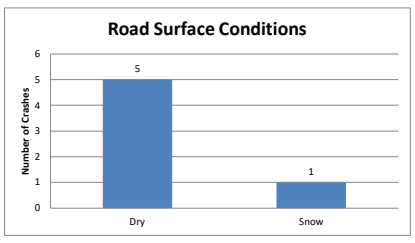
Crash Severity

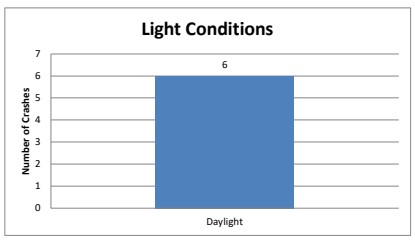




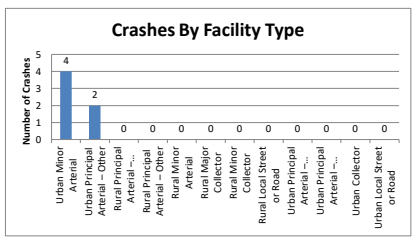
Crash Environment Characteristics

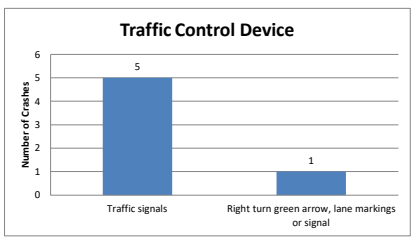


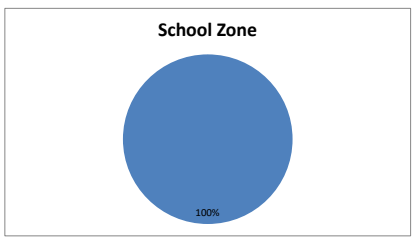


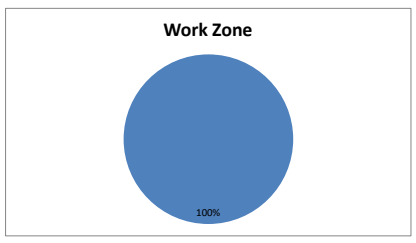


Crash Area Characteristics

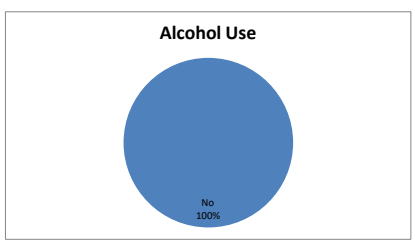


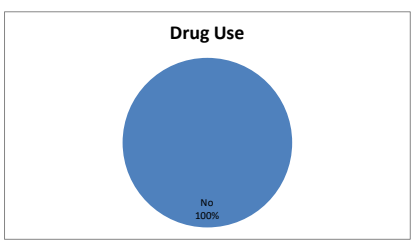




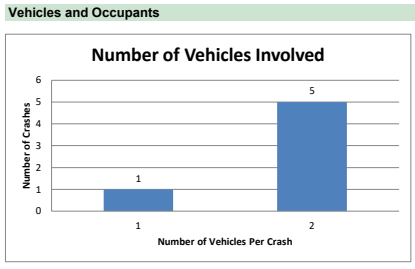


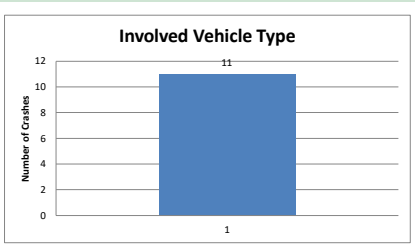
Driving Impairments

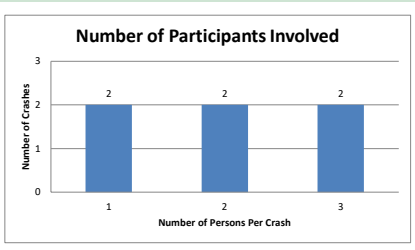




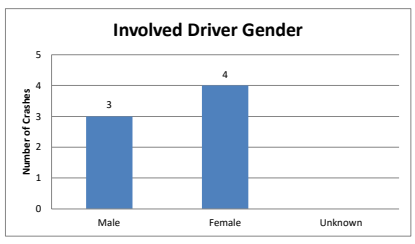
Vehicles and Occupants

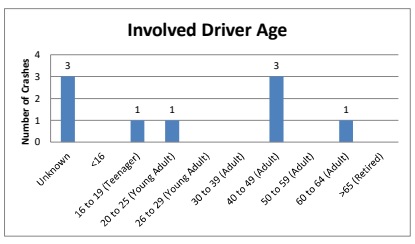


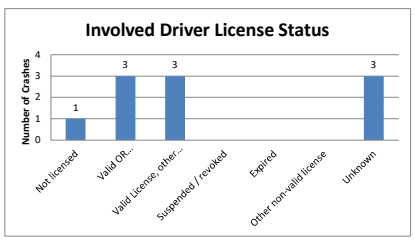


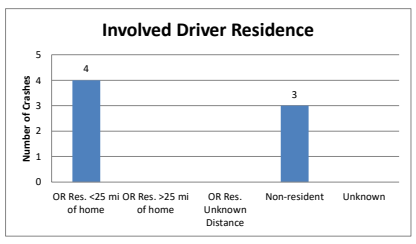


Involved Driver Characteristics

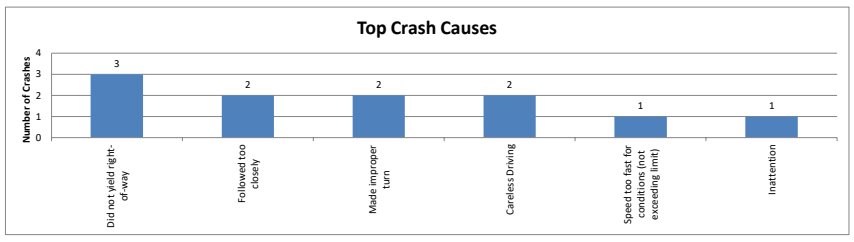


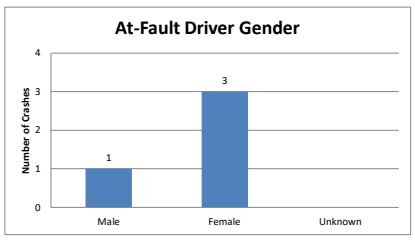


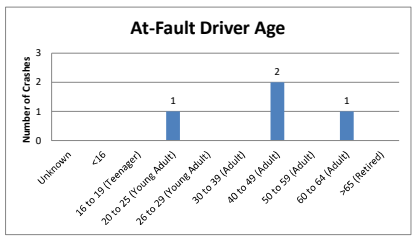




At-Fault Driver Characteristics

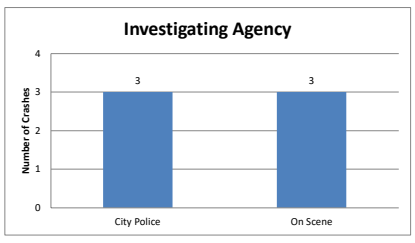






Other Crash Characteristics



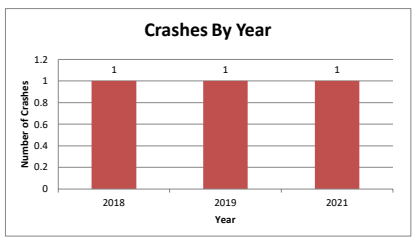


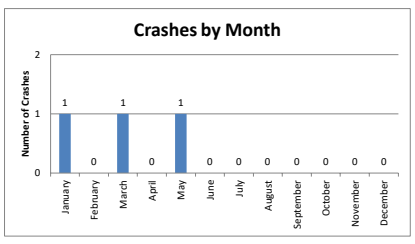
Project Name:	1724
Project Number	Redmond East Gateway
Query Information:	US97 NBramp_Airport Way
Date Queried:	January 1, 2017 - December 31, 2021
Data Provider:	ODOT Crash Analysis Reporting Unit
Analyst:	JWW
Summary Date:	2/26/2024
Text File Name:	
Filters Applied:	: : County: DeschutesWeather Condition: Clear

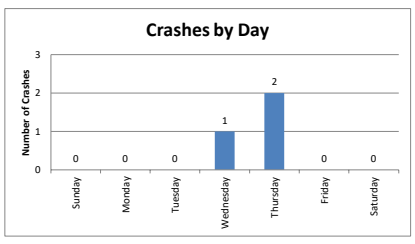
US 97 Southbound Ramp/ Airport Way

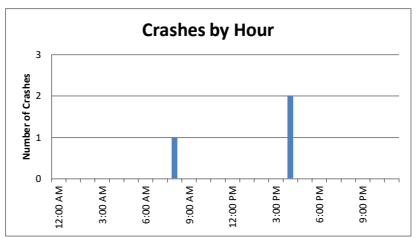
(January 2017 through December 2021)

Crash Summary by Date and Time

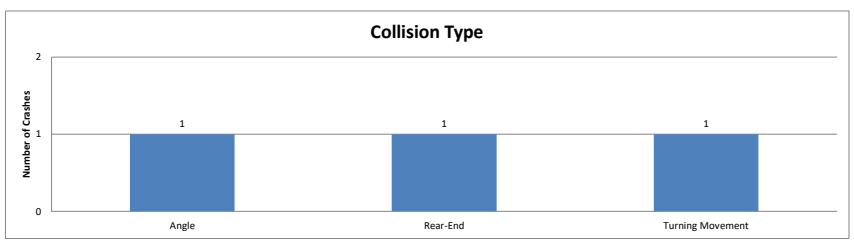


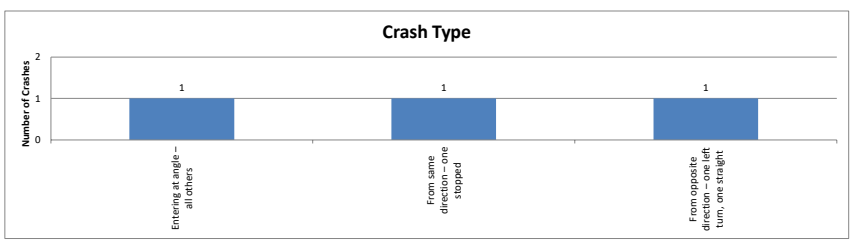




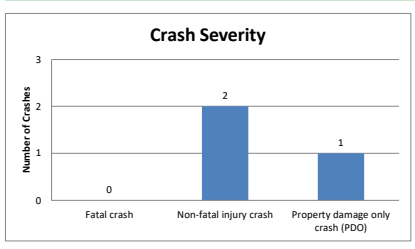


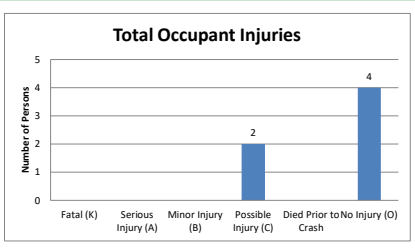
Crash Summary by Type



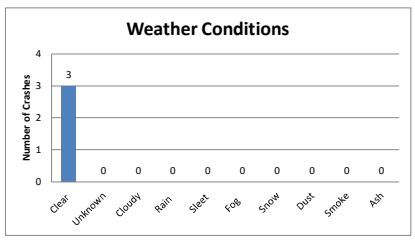


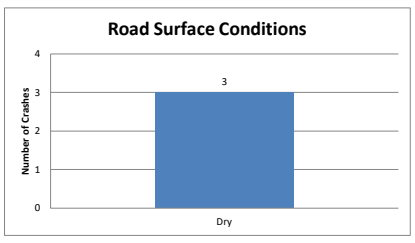
Crash Severity

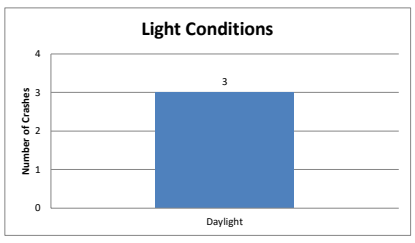




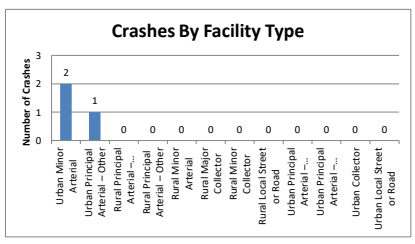
Crash Environment Characteristics

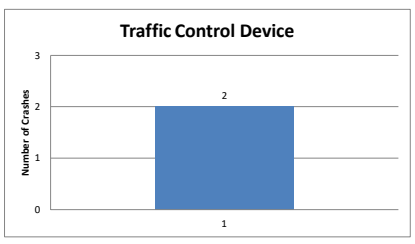


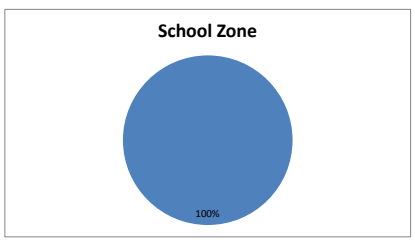


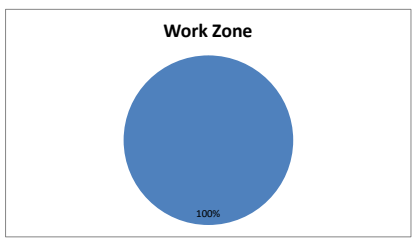


Crash Area Characteristics

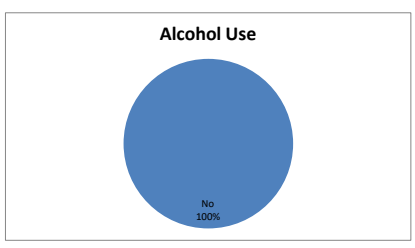


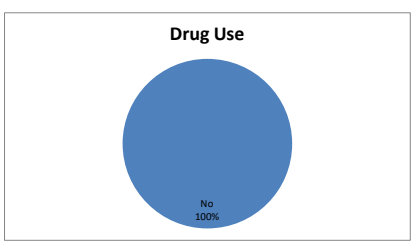




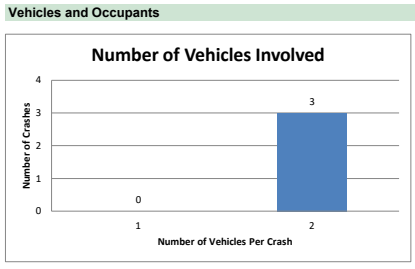


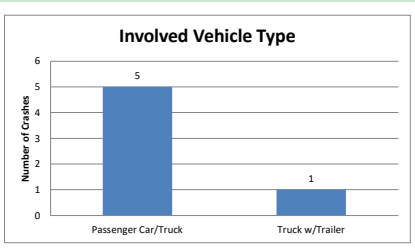
Driving Impairments

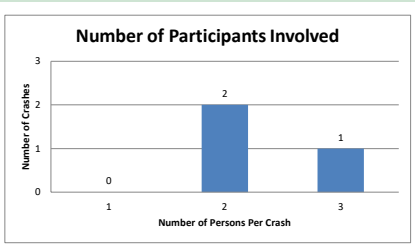




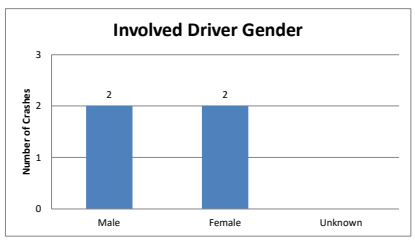
Vehicles and Occupants

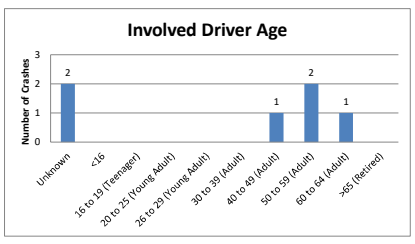


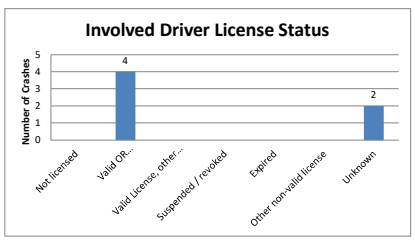


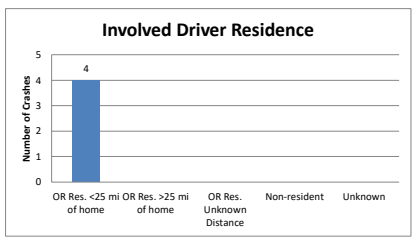


Involved Driver Characteristics

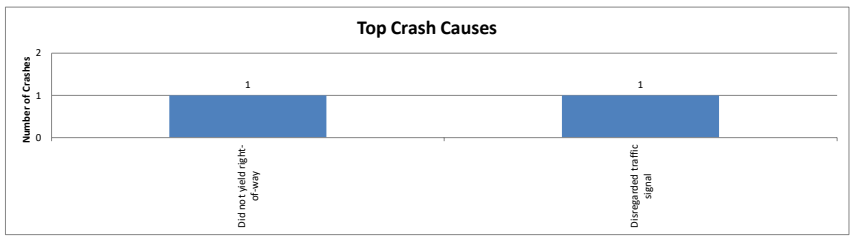


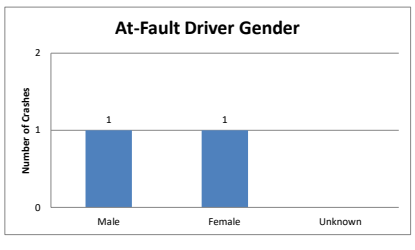


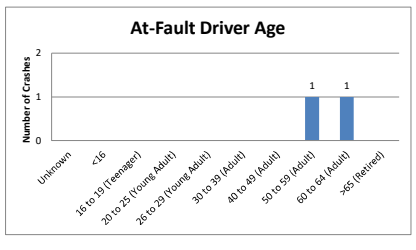




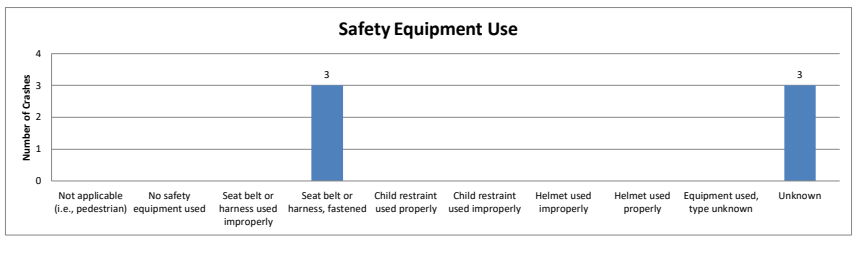
At-Fault Driver Characteristics

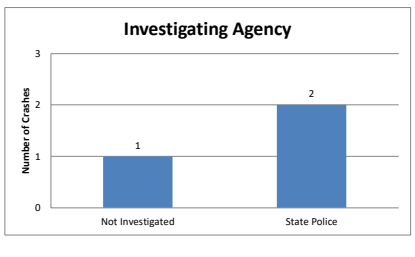






Other Crash Characteristics



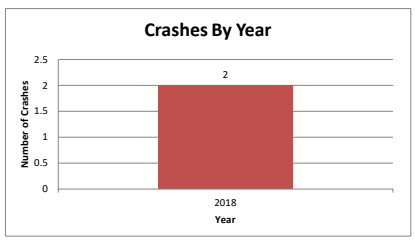


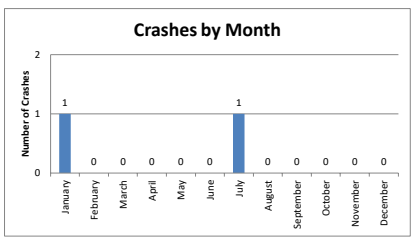
Project Name:	1724
Project Number	Redmond East Gateway
Query Information:	SW 19th_Airport Way
Date Queried:	January 1, 2017 - December 31, 2021
Data Provider:	ODOT Crash Analysis Reporting Unit
Analyst:	JWW
Summary Date:	2/26/2024
Text File Name:	
Filters Applied:	: : County: DeschutesCrash Year: 2018Weather Condition: Clear

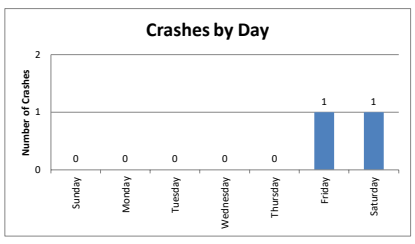
SW 19th Street/ Airport Way

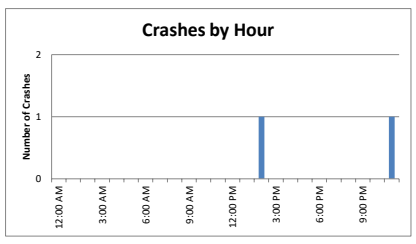
(January 2017 through December 2021)

Crash Summary by Date and Time

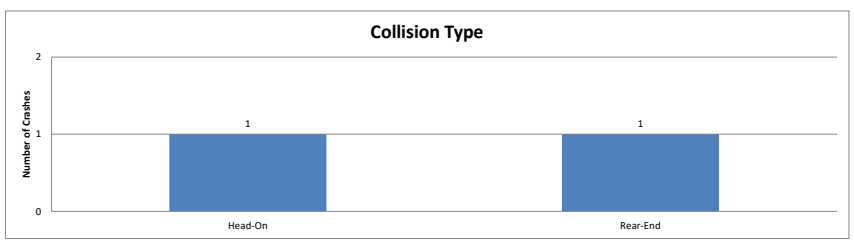


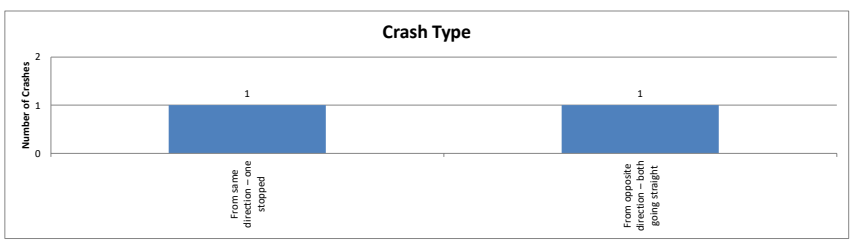




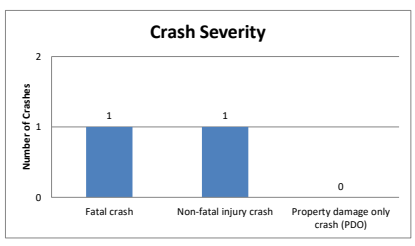


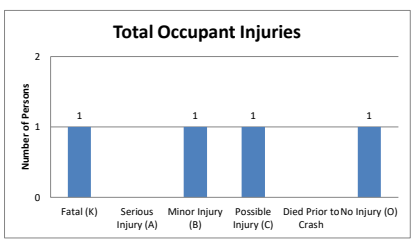
Crash Summary by Type



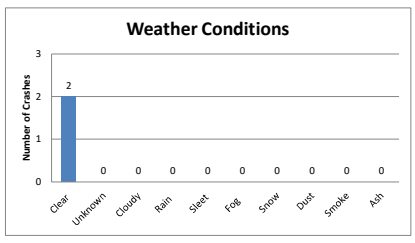


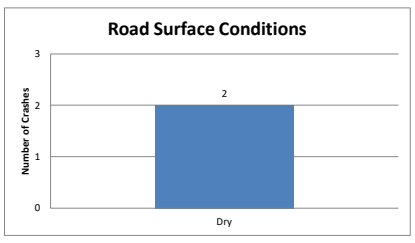
Crash Severity

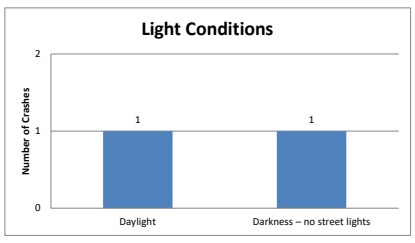




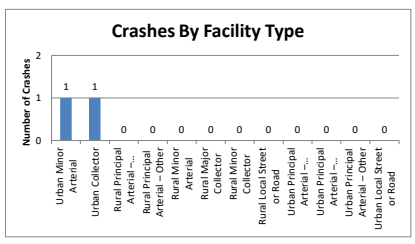
Crash Environment Characteristics

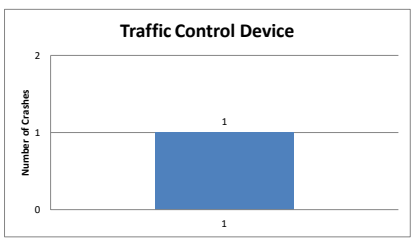


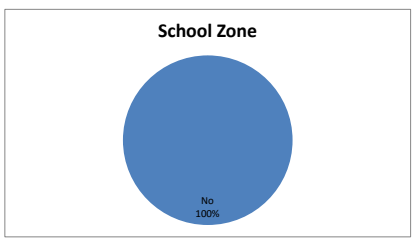


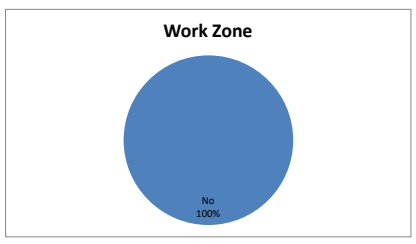


Crash Area Characteristics

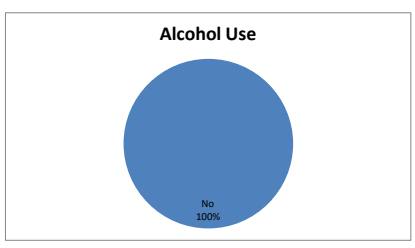


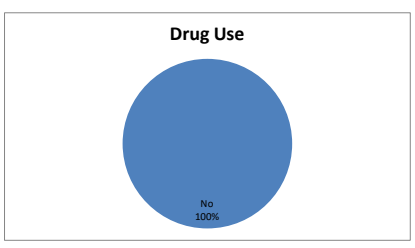




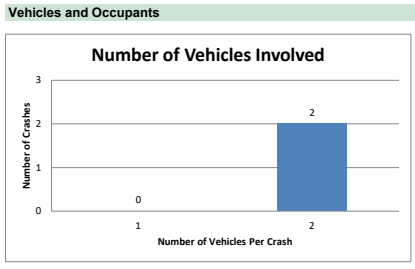


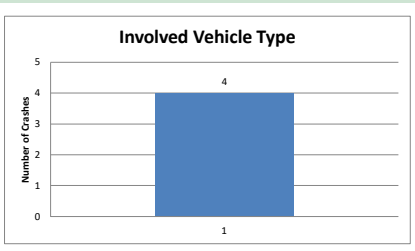
Driving Impairments

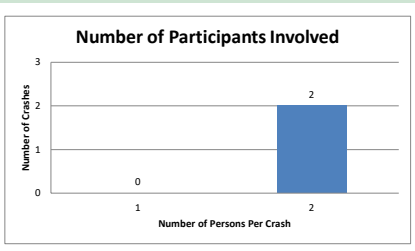




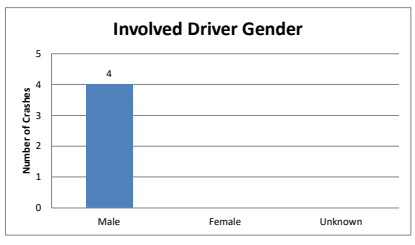
Vehicles and Occupants

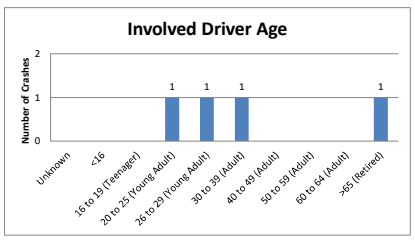


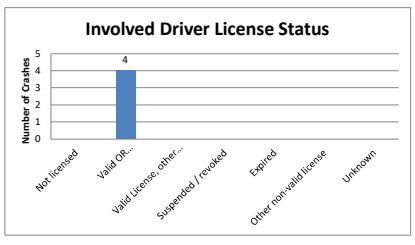


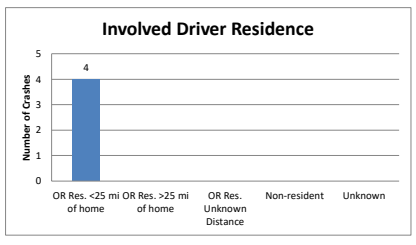


Involved Driver Characteristics

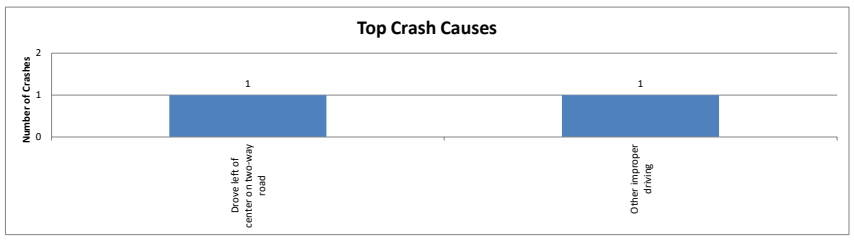


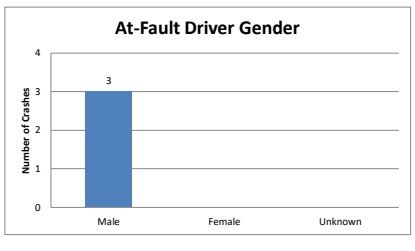


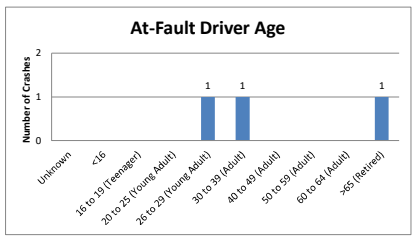




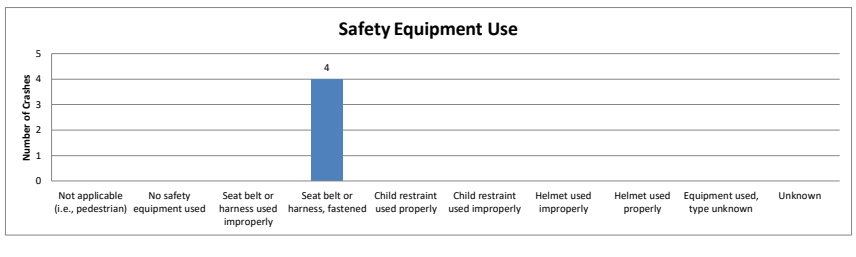
At-Fault Driver Characteristics

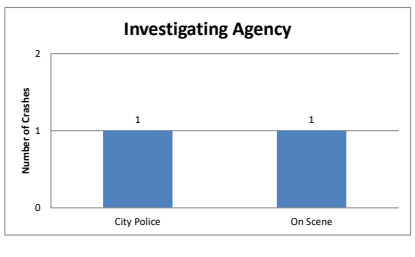






Other Crash Characteristics





APPENDIX 4: YEAR 2024 EXISTING CONDITIONS LOS WORKSHEETS

Intersection	
Int Delay, s/veh	6.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	116	114	34	96	189	81
Future Vol, veh/h	116	114	34	96	189	81
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	85
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	0	4	21	0	1	2
Mvmt Flow	140	137	41	116	228	98

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	277	0	407	209
Stage 1	-	-	-	-	209	-
Stage 2	-	-	-	-	198	-
Critical Hdwy	-	-	4.31	-	6.41	6.22
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	-	-	2.389	-	3.509	3.318
Pot Cap-1 Maneuver	-	-	1184	-	602	831
Stage 1	-	-	-	-	828	-
Stage 2	-	-	-	-	838	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1184	-	580	831
Mov Cap-2 Maneuver	-	-	-	-	580	-
Stage 1	-	-	-	-	828	-
Stage 2	-	-	-	-	807	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.1	13.6
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	580	831	-	-	1184	-
HCM Lane V/C Ratio	0.393	0.117	-	-	0.035	-
HCM Control Delay (s)	15.2	9.9	-	-	8.1	0
HCM Lane LOS	C	A	-	-	A	A
HCM 95th %tile Q(veh)	1.9	0.4	-	-	0.1	-

Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	65	1349	174	0	1117
Future Vol, veh/h	0	65	1349	174	0	1117
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	Free	-	None
Storage Length	-	0	-	250	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	8	4	6	0	6
Mvmt Flow	0	68	1405	181	0	1164

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	703	0	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.06	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.38	-	-	-	-
Pot Cap-1 Maneuver	0	367	-	0	0	-
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	-	367	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	17	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	WBLn1	SBT
Capacity (veh/h)	-	367	-
HCM Lane V/C Ratio	-	0.184	-
HCM Control Delay (s)	-	17	-
HCM Lane LOS	-	C	-
HCM 95th %tile Q(veh)	-	0.7	-

Intersection	
Intersection Delay, s/veh	9.4
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	28	10	77	61	16	38	15	169	13	9	115	8
Future Vol, veh/h	28	10	77	61	16	38	15	169	13	9	115	8
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles, %	0	30	8	0	6	0	0	1	31	0	8	0
Mvmt Flow	31	11	85	67	18	42	16	186	14	10	126	9
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay	8.6	9	10	9.5
HCM LOS	A	A	A	A

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	24%	53%	100%	0%
Vol Thru, %	0%	93%	9%	14%	0%	93%
Vol Right, %	0%	7%	67%	33%	0%	7%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	15	182	115	115	9	123
LT Vol	15	0	28	61	9	0
Through Vol	0	169	10	16	0	115
RT Vol	0	13	77	38	0	8
Lane Flow Rate	16	200	126	126	10	135
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.026	0.29	0.163	0.172	0.016	0.203
Departure Headway (Hd)	5.756	5.219	4.642	4.895	5.828	5.415
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	619	684	767	729	611	658
Service Time	3.521	2.984	2.701	2.954	3.598	3.184
HCM Lane V/C Ratio	0.026	0.292	0.164	0.173	0.016	0.205
HCM Control Delay	8.7	10.1	8.6	9	8.7	9.6
HCM Lane LOS	A	B	A	A	A	A
HCM 95th-tile Q	0.1	1.2	0.6	0.6	0	0.8

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	59	0	0	28	0	1495	30	0	1087	30
Future Vol, veh/h	0	0	59	0	0	28	0	1495	30	0	1087	30
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	-	-	215	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	0	0	2	0	0	4	0	5	17	0	7	0
Mvmt Flow	0	0	61	0	0	29	0	1557	31	0	1132	31

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	582	-	-	779	-	0	0	-	-	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.94	-	-	6.98	-	-	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.32	-	-	3.34	-	-	-	-	-	-
Pot Cap-1 Maneuver	0	0	456	0	0	334	0	-	-	0	-	-
Stage 1	0	0	-	0	0	-	0	-	-	0	-	-
Stage 2	0	0	-	0	0	-	0	-	-	0	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	456	-	-	334	-	-	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	14.1	16.8	0	0
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	WBLn1	SBT	SBR
Capacity (veh/h)	-	-	456	334	-	-
HCM Lane V/C Ratio	-	-	0.135	0.087	-	-
HCM Control Delay (s)	-	-	14.1	16.8	-	-
HCM Lane LOS	-	-	B	C	-	-
HCM 95th %tile Q(veh)	-	-	0.5	0.3	-	-

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	15	1	11	6	2	5	6	151	3	1	299	15
Future Vol, veh/h	15	1	11	6	2	5	6	151	3	1	299	15
Conflicting Peds, #/hr	0	0	0	0	0	0	1	0	0	0	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	7	0	0	0	0	0	0	4	0	0	5	7
Mvmt Flow	17	1	13	7	2	6	7	172	3	1	340	17

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	544	541	350	546	548	174	358	0	0	175	0	0
Stage 1	352	352	-	188	188	-	-	-	-	-	-	-
Stage 2	192	189	-	358	360	-	-	-	-	-	-	-
Critical Hdwy	7.17	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.17	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.17	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.563	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	442	451	698	452	447	875	1212	-	-	1414	-	-
Stage 1	655	635	-	818	748	-	-	-	-	-	-	-
Stage 2	798	748	-	664	630	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	434	447	697	441	443	875	1211	-	-	1414	-	-
Mov Cap-2 Maneuver	434	447	-	441	443	-	-	-	-	-	-	-
Stage 1	650	634	-	813	744	-	-	-	-	-	-	-
Stage 2	786	744	-	650	629	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.5	11.8	0.3	0
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1211	-	-	513	545	1414	-	-
HCM Lane V/C Ratio	0.006	-	-	0.06	0.027	0.001	-	-
HCM Control Delay (s)	8	0	-	12.5	11.8	7.5	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.1	0	-	-

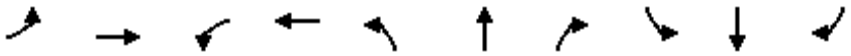
Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	15	6	2	145	253	63
Future Vol, veh/h	15	6	2	145	253	63
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	20	17	0	5	3	2
Mvmt Flow	17	7	2	169	294	73

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	504	331	367	0	-	0
Stage 1	331	-	-	-	-	-
Stage 2	173	-	-	-	-	-
Critical Hdwy	6.6	6.37	4.1	-	-	-
Critical Hdwy Stg 1	5.6	-	-	-	-	-
Critical Hdwy Stg 2	5.6	-	-	-	-	-
Follow-up Hdwy	3.68	3.453	2.2	-	-	-
Pot Cap-1 Maneuver	497	677	1203	-	-	-
Stage 1	689	-	-	-	-	-
Stage 2	815	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	496	677	1203	-	-	-
Mov Cap-2 Maneuver	496	-	-	-	-	-
Stage 1	688	-	-	-	-	-
Stage 2	815	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12	0.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1203	-	537	-	-
HCM Lane V/C Ratio	0.002	-	0.045	-	-
HCM Control Delay (s)	8	0	12	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	93	178	282	416	173	1369	235	108	1003	57
v/c Ratio	0.74	0.50	1.18	0.88	0.79	1.13	0.34	0.70	0.93	0.09
Control Delay	87.2	38.1	158.5	59.8	70.7	103.3	6.7	78.5	53.5	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	87.2	38.1	158.5	59.8	70.7	103.3	6.7	78.5	53.5	0.3
Queue Length 50th (ft)	72	99	~261	295	120	~671	27	83	402	0
Queue Length 95th (ft)	#156	164	#435	407	#295	#783	65	#224	#547	0
Internal Link Dist (ft)		907		1496		1010			1325	
Turn Bay Length (ft)	150		450		275		570	400		100
Base Capacity (vph)	130	429	240	545	218	1211	685	154	1079	636
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.72	0.41	1.18	0.76	0.79	1.13	0.34	0.70	0.93	0.09

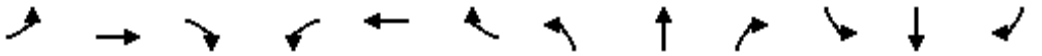
Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	91	99	75	276	317	91	170	1342	230	106	983	56
Future Volume (vph)	91	99	75	276	317	91	170	1342	230	106	983	56
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	4.5		4.5	4.5		4.5	6.0	6.0	4.5	6.0	6.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.94		1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1646	1599		1646	1675		1646	3137	1403	1583	3079	1488
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1646	1599		1646	1675		1646	3137	1403	1583	3079	1488
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	93	101	77	282	323	93	173	1369	235	108	1003	57
RTOR Reduction (vph)	0	25	0	0	9	0	0	0	144	0	0	37
Lane Group Flow (vph)	93	153	0	282	407	0	173	1369	91	108	1003	20
Confl. Peds. (#/hr)			1	1								
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	1%	0%	4%	1%	1%	1%	1%	6%	6%	5%	8%	0%
Turn Type	Prot	NA		Prot	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	9.2	25.0		17.5	33.3		16.0	46.3	46.3	11.7	42.0	42.0
Effective Green, g (s)	9.2	25.0		17.5	33.3		16.0	46.3	46.3	11.7	42.0	42.0
Actuated g/C Ratio	0.08	0.21		0.15	0.28		0.13	0.39	0.39	0.10	0.35	0.35
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	6.0	6.0	4.5	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	126	333		240	464		219	1210	541	154	1077	520
v/s Ratio Prot	0.06	0.10		c0.17	c0.24		c0.11	c0.44		0.07	0.33	
v/s Ratio Perm									0.06			0.01
v/c Ratio	0.74	0.46		1.18	0.88		0.79	1.13	0.17	0.70	0.93	0.04
Uniform Delay, d1	54.2	41.6		51.2	41.4		50.4	36.9	24.2	52.5	37.6	25.7
Progression Factor	1.00	1.00		1.00	1.00		0.96	1.02	1.75	1.00	1.00	1.00
Incremental Delay, d2	20.0	1.0		113.6	16.7		14.1	68.1	0.5	13.5	15.2	0.1
Delay (s)	74.2	42.6		164.9	58.1		62.2	105.6	42.9	65.9	52.8	25.8
Level of Service	E	D		F	E		E	F	D	E	D	C
Approach Delay (s)		53.5			101.3			93.1			52.7	
Approach LOS		D			F			F			D	

Intersection Summary			
HCM 2000 Control Delay	79.7	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.07		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	19.5
Intersection Capacity Utilization	92.5%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	91	99	75	276	317	91	170	1342	230	106	983	56
Future Volume (veh/h)	91	99	75	276	317	91	170	1342	230	106	983	56
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1736	1750	1695	1736	1736	1736	1736	1668	1668	1682	1641	1750
Adj Flow Rate, veh/h	93	101	0	282	323	0	173	1369	235	108	1003	57
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	1	0	4	1	1	1	1	6	6	5	8	0
Cap, veh/h	114	236		241	368		172	1593	710	87	1411	671
Arrive On Green	0.07	0.14	0.00	0.15	0.21	0.00	0.03	0.17	0.17	0.05	0.45	0.45
Sat Flow, veh/h	1654	1750	0	1654	1736	0	1654	3169	1414	1602	3118	1483
Grp Volume(v), veh/h	93	101	0	282	323	0	173	1369	235	108	1003	57
Grp Sat Flow(s),veh/h/ln	1654	1750	0	1654	1736	0	1654	1585	1414	1602	1559	1483
Q Serve(g_s), s	6.7	6.4	0.0	17.5	21.6	0.0	12.5	50.4	17.6	6.5	31.2	2.6
Cycle Q Clear(g_c), s	6.7	6.4	0.0	17.5	21.6	0.0	12.5	50.4	17.6	6.5	31.2	2.6
Prop In Lane	1.00		0.00	1.00		0.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	114	236		241	368		172	1593	710	87	1411	671
V/C Ratio(X)	0.81	0.43		1.17	0.88		1.00	0.86	0.33	1.24	0.71	0.08
Avail Cap(c_a), veh/h	131	445		241	557		172	1593	710	87	1411	671
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	0.74	0.74	0.74	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.1	47.6	0.0	51.3	45.8	0.0	57.9	45.9	32.2	56.8	26.5	18.7
Incr Delay (d2), s/veh	28.3	1.2	0.0	111.4	10.2	0.0	60.1	4.8	0.9	176.2	3.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	2.9	0.0	14.7	10.3	0.0	8.4	22.5	6.9	6.9	12.0	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	83.4	48.9	0.0	162.7	55.9	0.0	118.0	50.7	33.2	232.9	29.6	19.0
LnGrp LOS	F	D		F	E		F	D	C	F	C	B
Approach Vol, veh/h		194	A		605	A		1777			1168	
Approach Delay, s/veh		65.4			105.7			54.9			47.9	
Approach LOS		E			F			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.0	66.3	22.0	20.7	17.0	60.3	12.8	29.9
Change Period (Y+Rc), s	4.5	6.0	4.5	4.5	4.5	6.0	4.5	4.5
Max Green Setting (Gmax), s	6.5	46.0	17.5	30.5	12.5	40.0	9.5	38.5
Max Q Clear Time (g_c+I1), s	8.5	52.4	19.5	8.4	14.5	33.2	8.7	23.6
Green Ext Time (p_c), s	0.0	0.0	0.0	0.5	0.0	3.8	0.0	1.6

Intersection Summary	
HCM 6th Ctrl Delay	61.5
HCM 6th LOS	E

Notes

Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	2.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	326	40	56	417	46	49
Future Vol, veh/h	326	40	56	417	46	49
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	4	2	0	2
Mvmt Flow	375	46	64	479	53	56

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	421	0	1005	398
Stage 1	-	-	-	-	398	-
Stage 2	-	-	-	-	607	-
Critical Hdwy	-	-	4.14	-	6.4	6.22
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.236	-	3.5	3.318
Pot Cap-1 Maneuver	-	-	1127	-	270	652
Stage 1	-	-	-	-	683	-
Stage 2	-	-	-	-	548	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1127	-	249	652
Mov Cap-2 Maneuver	-	-	-	-	249	-
Stage 1	-	-	-	-	683	-
Stage 2	-	-	-	-	506	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1	19
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	366	-	-	1127	-
HCM Lane V/C Ratio	0.298	-	-	0.057	-
HCM Control Delay (s)	19	-	-	8.4	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	1.2	-	-	0.2	-

Intersection	
Int Delay, s/veh	9.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	51	313	339	99	153	105
Future Vol, veh/h	51	313	339	99	153	105
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Yield	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	8	1	2	3	3	3
Mvmt Flow	55	340	368	108	166	114

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	368	0	-	0	872	422
Stage 1	-	-	-	-	422	-
Stage 2	-	-	-	-	450	-
Critical Hdwy	4.18	-	-	-	6.43	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	2.272	-	-	-	3.527	3.327
Pot Cap-1 Maneuver	1158	-	-	-	320	630
Stage 1	-	-	-	-	659	-
Stage 2	-	-	-	-	640	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1158	-	-	-	301	630
Mov Cap-2 Maneuver	-	-	-	-	301	-
Stage 1	-	-	-	-	620	-
Stage 2	-	-	-	-	640	-

Approach	EB	WB	SB
HCM Control Delay, s	1.2	0	36.4
HCM LOS			E

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1158	-	-	-	382
HCM Lane V/C Ratio	0.048	-	-	-	0.734
HCM Control Delay (s)	8.3	0	-	-	36.4
HCM Lane LOS	A	A	-	-	E
HCM 95th %tile Q(veh)	0.2	-	-	-	5.7

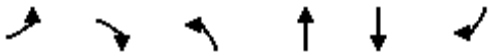
Intersection	
Int Delay, s/veh	6.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	381	4	198	405	11	314
Future Vol, veh/h	381	4	198	405	11	314
Conflicting Peds, #/hr	0	0	0	0	2	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	150	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	0	6	2	0	2
Mvmt Flow	401	4	208	426	12	331

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	405	0	1247	403
Stage 1	-	-	-	-	403	-
Stage 2	-	-	-	-	844	-
Critical Hdwy	-	-	4.16	-	6.4	6.22
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.254	-	3.5	3.318
Pot Cap-1 Maneuver	-	-	1132	-	193	647
Stage 1	-	-	-	-	679	-
Stage 2	-	-	-	-	425	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1132	-	157	647
Mov Cap-2 Maneuver	-	-	-	-	157	-
Stage 1	-	-	-	-	679	-
Stage 2	-	-	-	-	346	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.9	19.5
HCM LOS			C

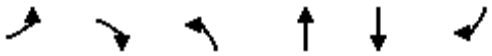
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	585	-	-	1132	-
HCM Lane V/C Ratio	0.585	-	-	0.184	-
HCM Control Delay (s)	19.5	-	-	8.9	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	3.8	-	-	0.7	-



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	386	223	361	1410	1118	259
v/c Ratio	0.76	0.52	0.75	0.59	0.64	0.28
Control Delay	57.6	10.1	59.7	5.6	9.3	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.6	10.1	59.7	5.6	9.3	0.5
Queue Length 50th (ft)	148	0	143	129	112	8
Queue Length 95th (ft)	196	68	m197	180	m39	m0
Internal Link Dist (ft)	1276			1895	1010	
Turn Bay Length (ft)		200	325			250
Base Capacity (vph)	607	467	566	2404	1734	914
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.64	0.48	0.64	0.59	0.64	0.28

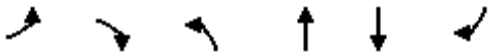
Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	374	216	350	1368	1084	251
Future Volume (vph)	374	216	350	1368	1084	251
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	4.5	5.5	5.5	5.5	5.5
Lane Util. Factor	0.97	1.00	0.97	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3101	1473	3162	3197	3137	1444
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3101	1473	3162	3197	3137	1444
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	386	223	361	1410	1118	259
RTOR Reduction (vph)	0	186	0	0	0	116
Lane Group Flow (vph)	386	37	361	1410	1118	143
Heavy Vehicles (%)	4%	1%	2%	4%	6%	3%
Turn Type	Prot	Perm	Prot	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	19.7	19.7	18.4	90.3	66.4	66.4
Effective Green, g (s)	19.7	19.7	18.4	90.3	66.4	66.4
Actuated g/C Ratio	0.16	0.16	0.15	0.75	0.55	0.55
Clearance Time (s)	4.5	4.5	5.5	5.5	5.5	5.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	509	241	484	2405	1735	799
v/s Ratio Prot	c0.12		c0.11	0.44	c0.36	
v/s Ratio Perm		0.02				0.10
v/c Ratio	0.76	0.15	0.75	0.59	0.64	0.18
Uniform Delay, d1	47.9	43.0	48.6	6.6	18.6	13.3
Progression Factor	1.00	1.00	1.08	0.68	0.43	0.13
Incremental Delay, d2	6.4	0.3	4.7	0.8	0.6	0.2
Delay (s)	54.3	43.3	57.0	5.2	8.7	1.9
Level of Service	D	D	E	A	A	A
Approach Delay (s)	50.2			15.8	7.4	
Approach LOS	D			B	A	

Intersection Summary			
HCM 2000 Control Delay	18.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	15.5
Intersection Capacity Utilization	67.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



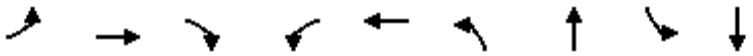
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	374	216	350	1368	1084	251
Future Volume (veh/h)	374	216	350	1368	1084	251
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1695	1736	1723	1695	1668	1709
Adj Flow Rate, veh/h	386	223	361	1410	1118	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	4	1	2	4	6	3
Cap, veh/h	539	253	417	2399	1800	
Arrive On Green	0.17	0.17	0.26	1.00	0.57	0.00
Sat Flow, veh/h	3132	1471	3183	3306	3253	1448
Grp Volume(v), veh/h	386	223	361	1410	1118	0
Grp Sat Flow(s),veh/h/ln	1566	1471	1591	1611	1585	1448
Q Serve(g_s), s	14.0	17.7	13.0	0.0	28.3	0.0
Cycle Q Clear(g_c), s	14.0	17.7	13.0	0.0	28.3	0.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	539	253	417	2399	1800	
V/C Ratio(X)	0.72	0.88	0.87	0.59	0.62	
Avail Cap(c_a), veh/h	613	288	570	2399	1800	
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.56	0.56	0.13	0.00
Uniform Delay (d), s/veh	46.9	48.5	43.3	0.0	17.3	0.0
Incr Delay (d2), s/veh	3.4	23.6	6.0	0.6	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.7	15.2	4.8	0.2	10.0	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	50.4	72.1	49.3	0.6	17.5	0.0
LnGrp LOS	D	E	D	A	B	
Approach Vol, veh/h	609			1771	1118	A
Approach Delay, s/veh	58.3			10.5	17.5	
Approach LOS	E			B	B	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		94.9		25.1	21.2	73.6
Change Period (Y+Rc), s		5.5		4.5	5.5	5.5
Max Green Setting (Gmax), s		86.5		23.5	21.5	59.5
Max Q Clear Time (g_c+I1), s		2.0		19.7	15.0	30.3
Green Ext Time (p_c), s		17.7		0.9	0.7	9.8

Intersection Summary	
HCM 6th Ctrl Delay	21.1
HCM 6th LOS	C

Notes

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	78	146	149	188	452	235	1408	72	996
v/c Ratio	0.43	0.69	0.45	0.68	0.70	0.67	0.78	0.37	0.63
Control Delay	40.6	66.2	8.2	48.6	43.9	20.0	25.0	16.6	36.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.6	66.2	8.2	48.6	43.9	20.0	25.0	16.6	36.0
Queue Length 50th (ft)	46	109	0	119	147	69	446	33	418
Queue Length 95th (ft)	84	176	39	183	201	131	589	m36	498
Internal Link Dist (ft)		398			1911		874		1895
Turn Bay Length (ft)	150			150		150		175	
Base Capacity (vph)	183	267	373	280	697	423	1807	201	1574
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.43	0.55	0.40	0.67	0.65	0.56	0.78	0.36	0.63

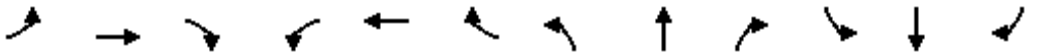
Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	78	146	149	188	295	157	235	1302	106	72	964	32
Future Volume (vph)	78	146	149	188	295	157	235	1302	106	72	964	32
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.95		1.00	0.99		1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1661	1733	1449	1629	3062		1646	3132		1646	3123	
Flt Permitted	0.40	1.00	1.00	0.36	1.00		0.18	1.00		0.11	1.00	
Satd. Flow (perm)	704	1733	1449	623	3062		305	3132		193	3123	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	78	146	149	188	295	157	235	1302	106	72	964	32
RTOR Reduction (vph)	0	0	129	0	59	0	0	4	0	0	2	0
Lane Group Flow (vph)	78	146	20	188	393	0	235	1404	0	72	994	0
Confl. Peds. (#/hr)	2		2	2		2	2		1	1		2
Heavy Vehicles (%)	0%	1%	1%	2%	2%	3%	1%	5%	2%	1%	6%	3%
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)	21.4	15.8	15.8	33.3	23.2		77.7	67.2		65.5	59.5	
Effective Green, g (s)	21.4	15.8	15.8	33.3	23.2		77.7	67.2		65.5	59.5	
Actuated g/C Ratio	0.18	0.13	0.13	0.28	0.19		0.65	0.56		0.55	0.50	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	170	228	190	281	591		350	1753		177	1548	
v/s Ratio Prot	0.02	0.08		c0.07	0.13		c0.08	c0.45		0.02	0.32	
v/s Ratio Perm	0.06		0.01	c0.11			0.36			0.20		
v/c Ratio	0.46	0.64	0.10	0.67	0.67		0.67	0.80		0.41	0.64	
Uniform Delay, d1	42.5	49.4	45.9	35.8	44.8		13.6	21.1		16.2	22.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.18	1.46	
Incremental Delay, d2	2.0	6.0	0.2	5.9	2.8		5.0	4.0		1.2	1.6	
Delay (s)	44.5	55.4	46.1	41.8	47.6		18.6	25.0		20.4	34.3	
Level of Service	D	E	D	D	D		B	C		C	C	
Approach Delay (s)		49.4			45.9			24.1			33.3	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	33.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	82.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	78	146	149	188	295	157	235	1302	106	72	964	32
Future Volume (veh/h)	78	146	149	188	295	157	235	1302	106	72	964	32
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1750	1736	1736	1723	1723	1709	1736	1682	1723	1736	1668	1709
Adj Flow Rate, veh/h	78	146	149	188	295	157	235	1302	106	72	964	32
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	1	1	2	2	3	1	5	2	1	6	3
Cap, veh/h	186	213	179	286	379	196	396	1727	140	211	1670	55
Arrive On Green	0.05	0.12	0.12	0.11	0.18	0.18	0.08	0.58	0.58	0.05	0.71	0.71
Sat Flow, veh/h	1667	1736	1464	1641	2082	1079	1654	2992	243	1654	3130	104
Grp Volume(v), veh/h	78	146	149	188	230	222	235	693	715	72	488	508
Grp Sat Flow(s),veh/h/ln	1667	1736	1464	1641	1637	1524	1654	1598	1638	1654	1585	1649
Q Serve(g_s), s	4.9	9.7	11.9	11.6	16.1	16.7	7.3	38.9	39.3	2.3	18.2	18.2
Cycle Q Clear(g_c), s	4.9	9.7	11.9	11.6	16.1	16.7	7.3	38.9	39.3	2.3	18.2	18.2
Prop In Lane	1.00		1.00	1.00		0.71	1.00		0.15	1.00		0.06
Lane Grp Cap(c), veh/h	186	213	179	286	298	277	396	922	945	211	845	880
V/C Ratio(X)	0.42	0.69	0.83	0.66	0.77	0.80	0.59	0.75	0.76	0.34	0.58	0.58
Avail Cap(c_a), veh/h	195	268	226	286	341	318	536	922	945	252	845	880
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.33	1.33	1.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.74	0.74	0.74
Uniform Delay (d), s/veh	43.2	50.5	51.4	38.7	46.7	47.0	12.6	19.0	19.0	17.3	10.8	10.8
Incr Delay (d2), s/veh	1.5	5.1	18.6	5.4	9.3	12.0	1.4	5.6	5.6	0.7	2.1	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	4.5	5.3	5.1	7.3	7.3	2.7	15.2	15.7	0.9	5.3	5.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.7	55.6	70.0	44.0	56.0	59.0	14.0	24.6	24.6	18.0	12.9	12.8
LnGrp LOS	D	E	E	D	E	E	B	C	C	B	B	B
Approach Vol, veh/h		373			640			1643			1068	
Approach Delay, s/veh		59.1			53.5			23.1			13.2	
Approach LOS		E			D			C			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.0	73.8	18.0	19.2	14.3	68.5	10.9	26.3
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	7.5	62.5	13.5	18.5	20.0	50.0	7.0	25.0
Max Q Clear Time (g_c+I1), s	4.3	41.3	13.6	13.9	9.3	20.2	6.9	18.7
Green Ext Time (p_c), s	0.0	10.7	0.0	0.5	0.5	7.6	0.0	1.4

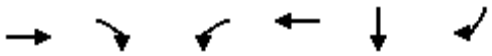
Intersection Summary	
HCM 6th Ctrl Delay	29.1
HCM 6th LOS	C

Intersection	
Intersection Delay, s/veh	15.2
Intersection LOS	C

Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Traffic Vol, veh/h	109	79	169	218	181	126
Future Vol, veh/h	109	79	169	218	181	126
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles, %	0	3	6	0	2	2
Mvmt Flow	127	92	197	253	210	147
Number of Lanes	1	1	1	0	1	0

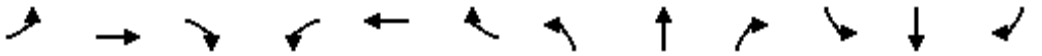
Approach	EB	WB	SW
Opposing Approach	WB	EB	
Opposing Lanes	1	2	0
Conflicting Approach Left	SW		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right		SW	EB
Conflicting Lanes Right	0	1	2
HCM Control Delay	10.9	17.4	15.2
HCM LOS	B	C	C

Lane	EBLn1	EBLn2	WBLn1	SWLn1
Vol Left, %	100%	0%	0%	59%
Vol Thru, %	0%	100%	44%	0%
Vol Right, %	0%	0%	56%	41%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	109	79	387	307
LT Vol	109	0	0	181
Through Vol	0	79	169	0
RT Vol	0	0	218	126
Lane Flow Rate	127	92	450	357
Geometry Grp	7	7	5	2
Degree of Util (X)	0.234	0.158	0.649	0.551
Departure Headway (Hd)	6.659	6.202	5.194	5.554
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	539	577	693	650
Service Time	4.412	3.955	3.234	3.595
HCM Lane V/C Ratio	0.236	0.159	0.649	0.549
HCM Control Delay	11.5	10.1	17.4	15.2
HCM Lane LOS	B	B	C	C
HCM 95th-tile Q	0.9	0.6	4.8	3.4



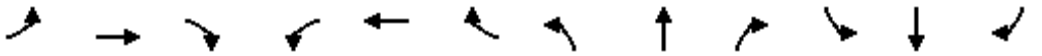
Lane Group	EBT	EBR	WBL	WBT	SBT	SBR
Lane Group Flow (vph)	213	152	358	613	101	142
v/c Ratio	0.25	0.20	0.45	0.49	0.45	0.44
Control Delay	13.5	3.6	5.9	6.4	33.2	9.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.5	3.6	5.9	6.4	33.2	9.9
Queue Length 50th (ft)	50	0	43	90	41	0
Queue Length 95th (ft)	117	34	92	185	79	43
Internal Link Dist (ft)	565			624	775	
Turn Bay Length (ft)		85	100			200
Base Capacity (vph)	842	773	868	1248	427	480
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.20	0.41	0.49	0.24	0.30

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	213	152	358	613	0	0	0	0	101	0	142
Future Volume (vph)	0	213	152	358	613	0	0	0	0	101	0	142
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		5.0	5.0	5.0	5.0						5.0	5.0
Lane Util. Factor		1.00	1.00	1.00	1.00						1.00	1.00
Frpb, ped/bikes		1.00	0.97	1.00	1.00						1.00	1.00
Flpb, ped/bikes		1.00	1.00	1.00	1.00						1.00	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						0.95	1.00
Satd. Flow (prot)		1733	1431	1642	1733						1662	1458
Flt Permitted		1.00	1.00	0.54	1.00						0.95	1.00
Satd. Flow (perm)		1733	1431	941	1733						1662	1458
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	213	152	358	613	0	0	0	0	101	0	142
RTOR Reduction (vph)	0	0	78	0	0	0	0	0	0	0	0	123
Lane Group Flow (vph)	0	213	74	358	613	0	0	0	0	0	101	19
Confl. Peds. (#/hr)			4	4								
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	0%	1%	1%	1%	1%	0%	0%	0%	0%	0%	0%	2%
Turn Type		NA	Perm	pm+pt	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases			2	6						4		4
Actuated Green, G (s)		34.0	34.0	50.4	50.4						9.6	9.6
Effective Green, g (s)		34.0	34.0	50.4	50.4						9.6	9.6
Actuated g/C Ratio		0.49	0.49	0.72	0.72						0.14	0.14
Clearance Time (s)		5.0	5.0	5.0	5.0						5.0	5.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0						3.0	3.0
Lane Grp Cap (vph)		841	695	791	1247						227	199
v/s Ratio Prot		0.12		0.07	c0.35							
v/s Ratio Perm			0.05	0.25							0.06	0.01
v/c Ratio		0.25	0.11	0.45	0.49						0.44	0.10
Uniform Delay, d1		10.6	9.8	3.8	4.2						27.8	26.4
Progression Factor		1.00	1.00	1.00	1.00						1.00	1.00
Incremental Delay, d2		0.7	0.3	0.4	1.4						1.4	0.2
Delay (s)		11.3	10.1	4.2	5.6						29.1	26.6
Level of Service		B	B	A	A						C	C
Approach Delay (s)		10.8			5.1			0.0			27.7	
Approach LOS		B			A			A			C	

Intersection Summary			
HCM 2000 Control Delay	9.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	74.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	213	152	358	613	0	0	0	0	101	0	142
Future Volume (veh/h)	0	213	152	358	613	0	0	0	0	101	0	142
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1736	1736	1736	1736	0				1750	1750	1723
Adj Flow Rate, veh/h	0	213	152	358	613	0				101	0	142
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Percent Heavy Veh, %	0	1	1	1	1	0				0	0	2
Cap, veh/h	0	913	755	748	1260	0				219	0	192
Arrive On Green	0.00	0.53	0.53	0.13	0.73	0.00				0.13	0.00	0.13
Sat Flow, veh/h	0	1736	1436	1654	1736	0				1667	0	1460
Grp Volume(v), veh/h	0	213	152	358	613	0				101	0	142
Grp Sat Flow(s),veh/h/ln	0	1736	1436	1654	1736	0				1667	0	1460
Q Serve(g_s), s	0.0	4.6	3.9	6.1	10.5	0.0				3.9	0.0	6.5
Cycle Q Clear(g_c), s	0.0	4.6	3.9	6.1	10.5	0.0				3.9	0.0	6.5
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	913	755	748	1260	0				219	0	192
V/C Ratio(X)	0.00	0.23	0.20	0.48	0.49	0.00				0.46	0.00	0.74
Avail Cap(c_a), veh/h	0	913	755	985	1260	0				429	0	375
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.53	0.53	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	9.0	8.8	5.0	4.1	0.0				28.1	0.0	29.2
Incr Delay (d2), s/veh	0.0	0.6	0.6	0.3	0.7	0.0				1.5	0.0	5.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.7	1.2	1.5	2.6	0.0				1.6	0.0	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	9.6	9.4	5.3	4.8	0.0				29.6	0.0	34.7
LnGrp LOS	A	A	A	A	A	A				C	A	C
Approach Vol, veh/h		365			971						243	
Approach Delay, s/veh		9.5			5.0						32.6	
Approach LOS		A			A						C	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	14.0	41.8		14.2		55.8
Change Period (Y+Rc), s	5.0	5.0		5.0		5.0
Max Green Setting (Gmax), s	19.0	18.0		18.0		42.0
Max Q Clear Time (g_c+I1), s	8.1	6.6		8.5		12.5
Green Ext Time (p_c), s	0.8	1.3		0.7		4.6

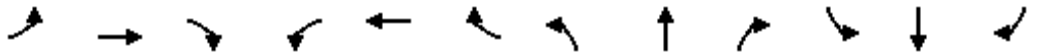
Intersection Summary		
HCM 6th Ctrl Delay		10.3
HCM 6th LOS		B



Lane Group	EBL	EBT	WBT	WBR	NBL	NBT
Lane Group Flow (vph)	93	221	580	192	391	323
v/c Ratio	0.29	0.22	0.73	0.25	0.86	0.37
Control Delay	9.6	8.3	24.1	3.2	44.1	1.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.6	8.3	24.1	3.2	44.1	1.2
Queue Length 50th (ft)	17	44	212	0	156	0
Queue Length 95th (ft)	36	78	#383	34	#295	0
Internal Link Dist (ft)		624	360			760
Turn Bay Length (ft)	100			150	160	
Base Capacity (vph)	319	1001	802	767	484	883
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.29	0.22	0.72	0.25	0.81	0.37

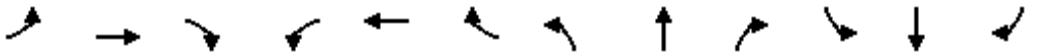
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	93	221	0	0	580	192	391	0	323	0	0	0
Future Volume (vph)	93	221	0	0	580	192	391	0	323	0	0	0
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	5.0	5.0			5.0	5.0	5.0	5.0				
Lane Util. Factor	1.00	1.00			1.00	1.00	1.00	1.00				
Frpb, ped/bikes	1.00	1.00			1.00	0.98	1.00	1.00				
Flpb, ped/bikes	1.00	1.00			1.00	1.00	1.00	1.00				
Frt	1.00	1.00			1.00	0.85	1.00	0.85				
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00				
Satd. Flow (prot)	1662	1733			1733	1436	1627	1430				
Flt Permitted	0.22	1.00			1.00	1.00	0.95	1.00				
Satd. Flow (perm)	384	1733			1733	1436	1627	1430				
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	93	221	0	0	580	192	391	0	323	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	106	0	233	0	0	0	0
Lane Group Flow (vph)	93	221	0	0	580	86	391	90	0	0	0	0
Confl. Peds. (#/hr)	2		2	2		2	1					1
Confl. Bikes (#/hr)						1						
Heavy Vehicles (%)	0%	1%	0%	0%	1%	1%	2%	0%	4%	0%	0%	0%
Turn Type	pm+pt	NA			NA	Perm	Perm	NA				
Protected Phases	5	2			6			8				
Permitted Phases	2					6	8					
Actuated Green, G (s)	40.8	40.8			31.5	31.5	19.7	19.7				
Effective Green, g (s)	40.8	40.8			31.5	31.5	19.7	19.7				
Actuated g/C Ratio	0.58	0.58			0.45	0.45	0.28	0.28				
Clearance Time (s)	5.0	5.0			5.0	5.0	5.0	5.0				
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0				
Lane Grp Cap (vph)	300	1002			774	641	454	399				
v/s Ratio Prot	c0.02	0.13			c0.33			0.06				
v/s Ratio Perm	0.16					0.06	c0.24					
v/c Ratio	0.31	0.22			0.75	0.13	0.86	0.23				
Uniform Delay, d1	9.4	7.2			16.2	11.5	24.1	19.5				
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00				
Incremental Delay, d2	0.6	0.5			6.6	0.4	15.3	0.3				
Delay (s)	10.0	7.7			22.8	11.9	39.4	19.8				
Level of Service	A	A			C	B	D	B				
Approach Delay (s)		8.4			20.1			30.6			0.0	
Approach LOS		A			C			C			A	

Intersection Summary			
HCM 2000 Control Delay	22.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	70.5	Sum of lost time (s)	15.0
Intersection Capacity Utilization	74.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	93	221	0	0	580	192	391	0	323	0	0	0
Future Volume (veh/h)	93	221	0	0	580	192	391	0	323	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1750	1736	0	0	1736	1736	1723	1750	1695			
Adj Flow Rate, veh/h	93	221	0	0	580	192	391	0	323			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Percent Heavy Veh, %	0	1	0	0	1	1	2	0	4			
Cap, veh/h	320	1016	0	0	788	653	446	0	403			
Arrive On Green	0.06	0.59	0.00	0.00	0.45	0.45	0.27	0.00	0.27			
Sat Flow, veh/h	1667	1736	0	0	1736	1438	1641	0	1480			
Grp Volume(v), veh/h	93	221	0	0	580	192	391	0	323			
Grp Sat Flow(s),veh/h/ln	1667	1736	0	0	1736	1438	1641	0	1480			
Q Serve(g_s), s	1.9	4.2	0.0	0.0	19.2	5.9	15.9	0.0	14.2			
Cycle Q Clear(g_c), s	1.9	4.2	0.0	0.0	19.2	5.9	15.9	0.0	14.2			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	320	1016	0	0	788	653	446	0	403			
V/C Ratio(X)	0.29	0.22	0.00	0.00	0.74	0.29	0.88	0.00	0.80			
Avail Cap(c_a), veh/h	340	1016	0	0	788	653	492	0	444			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.98	0.98	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	11.5	6.9	0.0	0.0	15.7	12.0	24.4	0.0	23.7			
Incr Delay (d2), s/veh	0.5	0.5	0.0	0.0	6.0	1.1	15.2	0.0	9.4			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.6	1.4	0.0	0.0	8.1	1.9	7.7	0.0	5.7			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.0	7.4	0.0	0.0	21.7	13.2	39.6	0.0	33.1			
LnGrp LOS	B	A	A	A	C	B	D	A	C			
Approach Vol, veh/h		314			772			714				
Approach Delay, s/veh		8.7			19.6			36.6				
Approach LOS		A			B			D				
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		46.0			9.2	36.8		24.0				
Change Period (Y+Rc), s		5.0			5.0	5.0		5.0				
Max Green Setting (Gmax), s		39.0			5.0	29.5		21.0				
Max Q Clear Time (g_c+I1), s		6.2			3.9	21.2		17.9				
Green Ext Time (p_c), s		1.3			0.0	2.9		1.1				
Intersection Summary												
HCM 6th Ctrl Delay			24.5									
HCM 6th LOS			C									

Intersection	
Int Delay, s/veh	1.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	401	23	2	513	45	9
Future Vol, veh/h	401	23	2	513	45	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	50	-	175	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	4	4	0	1	9	0
Mvmt Flow	461	26	2	590	52	10

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	487	0	1068	474
Stage 1	-	-	-	-	474	-
Stage 2	-	-	-	-	594	-
Critical Hdwy	-	-	4.1	-	6.49	6.2
Critical Hdwy Stg 1	-	-	-	-	5.49	-
Critical Hdwy Stg 2	-	-	-	-	5.49	-
Follow-up Hdwy	-	-	2.2	-	3.581	3.3
Pot Cap-1 Maneuver	-	-	1086	-	238	595
Stage 1	-	-	-	-	612	-
Stage 2	-	-	-	-	538	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1086	-	238	595
Mov Cap-2 Maneuver	-	-	-	-	238	-
Stage 1	-	-	-	-	612	-
Stage 2	-	-	-	-	537	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	22.1
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	238	595	-	-	1086	-
HCM Lane V/C Ratio	0.217	0.017	-	-	0.002	-
HCM Control Delay (s)	24.3	11.2	-	-	8.3	-
HCM Lane LOS	C	B	-	-	A	-
HCM 95th %tile Q(veh)	0.8	0.1	-	-	0	-

APPENDIX 5: YEAR 2040 BACKGROUND CONDITIONS LOS WORKSHEETS

Intersection	
Int Delay, s/veh	17.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	288	134	90	266	258	201
Future Vol, veh/h	288	134	90	266	258	201
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	85
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	4	21	0	1	2
Mvmt Flow	303	141	95	280	272	212

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	444	0	844	374
Stage 1	-	-	-	-	374	-
Stage 2	-	-	-	-	470	-
Critical Hdwy	-	-	4.31	-	6.41	6.22
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	-	-	2.389	-	3.509	3.318
Pot Cap-1 Maneuver	-	-	1022	-	335	672
Stage 1	-	-	-	-	698	-
Stage 2	-	-	-	-	631	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1022	-	298	672
Mov Cap-2 Maneuver	-	-	-	-	298	-
Stage 1	-	-	-	-	698	-
Stage 2	-	-	-	-	562	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.2	45.1
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	298	672	-	-	1022	-
HCM Lane V/C Ratio	0.911	0.315	-	-	0.093	-
HCM Control Delay (s)	70.3	12.8	-	-	8.9	0
HCM Lane LOS	F	B	-	-	A	A
HCM 95th %tile Q(veh)	8.6	1.3	-	-	0.3	-

Intersection	
Int Delay, s/veh	2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	170	1719	261	0	1499
Future Vol, veh/h	0	170	1719	261	0	1499
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	Free	-	None
Storage Length	-	0	-	250	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	8	4	6	0	6
Mvmt Flow	0	177	1791	272	0	1561

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	896	0	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.06	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.38	-	-	-	-
Pot Cap-1 Maneuver	0	272	-	0	0	-
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	-	272	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	39.9	0	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	WBLn1	SBT
Capacity (veh/h)	-	272	-
HCM Lane V/C Ratio	-	0.651	-
HCM Control Delay (s)	-	39.9	-
HCM Lane LOS	-	E	-
HCM 95th %tile Q(veh)	-	4.1	-

Intersection	
Intersection Delay, s/veh	15.4
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	91	0	114	66	24	40	81	369	15	10	212	15
Future Vol, veh/h	91	0	114	66	24	40	81	369	15	10	212	15
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	0	30	8	0	6	0	0	1	31	0	8	0
Mvmt Flow	96	0	120	69	25	42	85	388	16	11	223	16
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay	12.5	11.5	18.6	13.8
HCM LOS	B	B	C	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	44%	51%	100%	0%
Vol Thru, %	0%	96%	0%	18%	0%	93%
Vol Right, %	0%	4%	56%	31%	0%	7%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	81	384	205	130	10	227
LT Vol	81	0	91	66	10	0
Through Vol	0	369	0	24	0	212
RT Vol	0	15	114	40	0	15
Lane Flow Rate	85	404	216	137	11	239
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.154	0.673	0.359	0.245	0.02	0.427
Departure Headway (Hd)	6.511	5.992	5.991	6.442	6.845	6.427
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	547	598	596	561	519	557
Service Time	4.288	3.769	4.086	4.442	4.636	4.218
HCM Lane V/C Ratio	0.155	0.676	0.362	0.244	0.021	0.429
HCM Control Delay	10.5	20.3	12.5	11.5	9.8	14
HCM Lane LOS	B	C	B	B	A	B
HCM 95th-tile Q	0.5	5.1	1.6	1	0.1	2.1

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	104	0	0	54	0	1925	91	0	1465	34
Future Vol, veh/h	0	0	104	0	0	54	0	1925	91	0	1465	34
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	-	-	215	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	0	0	2	0	0	4	0	5	17	0	7	0
Mvmt Flow	0	0	108	0	0	56	0	2005	95	0	1526	35

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	781	-	-	1003	-	0	0	-	-	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.94	-	-	6.98	-	-	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.32	-	-	3.34	-	-	-	-	-	-
Pot Cap-1 Maneuver	0	0	338	0	0	237	0	-	-	0	-	-
Stage 1	0	0	-	0	0	-	0	-	-	0	-	-
Stage 2	0	0	-	0	0	-	0	-	-	0	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	338	-	-	237	-	-	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	20.6	24.9	0	0
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	WBLn1	SBT	SBR
Capacity (veh/h)	-	-	338	237	-	-
HCM Lane V/C Ratio	-	-	0.321	0.237	-	-
HCM Control Delay (s)	-	-	20.6	24.9	-	-
HCM Lane LOS	-	-	C	C	-	-
HCM 95th %tile Q(veh)	-	-	1.4	0.9	-	-

Intersection	
Int Delay, s/veh	3.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	46	16	23	31	8	37	7	363	36	10	441	16
Future Vol, veh/h	46	16	23	31	8	37	7	363	36	10	441	16
Conflicting Peds, #/hr	0	0	0	0	0	0	1	0	0	0	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	75	-	-	75	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	7	0	0	0	0	0	0	4	0	0	5	7
Mvmt Flow	48	17	24	33	8	39	7	382	38	11	464	17

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	935	930	474	930	919	401	482	0	0	420	0	0
Stage 1	496	496	-	415	415	-	-	-	-	-	-	-
Stage 2	439	434	-	515	504	-	-	-	-	-	-	-
Critical Hdwy	7.17	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.17	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.17	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.563	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	241	269	595	250	273	653	1091	-	-	1150	-	-
Stage 1	546	549	-	619	596	-	-	-	-	-	-	-
Stage 2	587	585	-	546	544	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	218	264	594	225	268	653	1090	-	-	1150	-	-
Mov Cap-2 Maneuver	218	264	-	225	268	-	-	-	-	-	-	-
Stage 1	542	543	-	615	592	-	-	-	-	-	-	-
Stage 2	541	581	-	503	538	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	24.4	18.9	0.1	0.2
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1090	-	-	274	339	1150	-	-
HCM Lane V/C Ratio	0.007	-	-	0.327	0.236	0.009	-	-
HCM Control Delay (s)	8.3	-	-	24.4	18.9	8.2	-	-
HCM Lane LOS	A	-	-	C	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	1.4	0.9	0	-	-

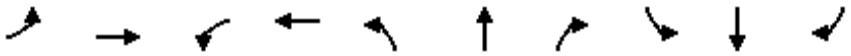
Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	15	6	2	390	433	63
Future Vol, veh/h	15	6	2	390	433	63
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	75	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	20	17	0	5	3	2
Mvmt Flow	16	6	2	411	456	66

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	904	489	522	0	-	0
Stage 1	489	-	-	-	-	-
Stage 2	415	-	-	-	-	-
Critical Hdwy	6.6	6.37	4.1	-	-	-
Critical Hdwy Stg 1	5.6	-	-	-	-	-
Critical Hdwy Stg 2	5.6	-	-	-	-	-
Follow-up Hdwy	3.68	3.453	2.2	-	-	-
Pot Cap-1 Maneuver	286	550	1055	-	-	-
Stage 1	581	-	-	-	-	-
Stage 2	629	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	285	550	1055	-	-	-
Mov Cap-2 Maneuver	285	-	-	-	-	-
Stage 1	580	-	-	-	-	-
Stage 2	629	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	16.7	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1055	-	330	-	-
HCM Lane V/C Ratio	0.002	-	0.067	-	-
HCM Control Delay (s)	8.4	-	16.7	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-



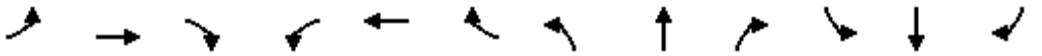
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	138	287	368	640	310	1802	319	165	1335	101
v/c Ratio	1.35	0.67	1.63	1.14	1.68	1.53	0.44	1.47	1.30	0.16
Control Delay	252.4	44.8	335.8	120.1	349.7	270.5	4.4	293.6	177.0	0.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	252.4	44.8	335.8	120.1	349.7	270.5	4.4	293.6	177.0	0.6
Queue Length 50th (ft)	~140	181	~411	~576	~363	~1032	17	~176	~697	0
Queue Length 95th (ft)	#272	281	#603	#807	m#461	m#1158	m35	#317	#835	0
Internal Link Dist (ft)		907		1496		1010			1325	
Turn Bay Length (ft)	150		450		275		570	400		100
Base Capacity (vph)	102	429	226	561	185	1176	725	112	1026	614
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.35	0.67	1.63	1.14	1.68	1.53	0.44	1.47	1.30	0.16

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

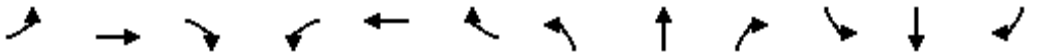
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	135	164	118	361	512	116	304	1766	313	162	1308	99
Future Volume (vph)	135	164	118	361	512	116	304	1766	313	162	1308	99
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	4.5		4.5	4.5		4.5	6.0	6.0	4.5	6.0	6.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.94		1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1646	1604		1646	1685		1646	3137	1403	1583	3079	1488
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1646	1604		1646	1685		1646	3137	1403	1583	3079	1488
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	138	167	120	368	522	118	310	1802	319	165	1335	101
RTOR Reduction (vph)	0	22	0	0	7	0	0	0	199	0	0	67
Lane Group Flow (vph)	138	265	0	368	633	0	310	1802	120	165	1335	34
Confl. Peds. (#/hr)			1	1								
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	1%	0%	4%	1%	1%	1%	1%	6%	6%	5%	8%	0%
Turn Type	Prot	NA		Prot	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	7.5	30.5		16.5	39.5		13.5	45.0	45.0	8.5	40.0	40.0
Effective Green, g (s)	7.5	30.5		16.5	39.5		13.5	45.0	45.0	8.5	40.0	40.0
Actuated g/C Ratio	0.06	0.25		0.14	0.33		0.11	0.38	0.38	0.07	0.33	0.33
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	6.0	6.0	4.5	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	102	407		226	554		185	1176	526	112	1026	496
v/s Ratio Prot	0.08	0.17		c0.22	c0.38		c0.19	c0.57		0.10	0.43	
v/s Ratio Perm									0.09			0.02
v/c Ratio	1.35	0.65		1.63	1.14		1.68	1.53	0.23	1.47	1.30	0.07
Uniform Delay, d1	56.2	40.0		51.8	40.2		53.2	37.5	25.6	55.8	40.0	27.3
Progression Factor	1.00	1.00		1.00	1.00		1.03	0.95	1.19	1.00	1.00	1.00
Incremental Delay, d2	210.0	3.7		302.1	84.2		315.8	241.7	0.5	254.8	142.7	0.3
Delay (s)	266.2	43.7		353.8	124.5		370.5	277.4	31.1	310.5	182.7	27.5
Level of Service	F	D		F	F		F	F	C	F	F	C
Approach Delay (s)		116.0			208.2			257.0			186.1	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM 2000 Control Delay	216.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.51		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	19.5
Intersection Capacity Utilization	124.0%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	135	164	118	361	512	116	304	1766	313	162	1308	99
Future Volume (veh/h)	135	164	118	361	512	116	304	1766	313	162	1308	99
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1736	1750	1695	1736	1736	1736	1736	1668	1668	1682	1641	1750
Adj Flow Rate, veh/h	138	167	0	368	522	0	310	1802	319	165	1335	101
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	1	0	4	1	1	1	1	6	6	5	8	0
Cap, veh/h	103	423		227	550		186	1228	548	113	1078	513
Arrive On Green	0.06	0.24	0.00	0.14	0.32	0.00	0.04	0.13	0.13	0.07	0.35	0.35
Sat Flow, veh/h	1654	1750	0	1654	1736	0	1654	3169	1414	1602	3118	1483
Grp Volume(v), veh/h	138	167	0	368	522	0	310	1802	319	165	1335	101
Grp Sat Flow(s),veh/h/ln	1654	1750	0	1654	1736	0	1654	1585	1414	1602	1559	1483
Q Serve(g_s), s	7.5	9.6	0.0	16.5	35.2	0.0	13.5	46.5	25.5	8.5	41.5	5.7
Cycle Q Clear(g_c), s	7.5	9.6	0.0	16.5	35.2	0.0	13.5	46.5	25.5	8.5	41.5	5.7
Prop In Lane	1.00		0.00	1.00		0.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	103	423		227	550		186	1228	548	113	1078	513
V/C Ratio(X)	1.34	0.39		1.62	0.95		1.67	1.47	0.58	1.45	1.24	0.20
Avail Cap(c_a), veh/h	103	445		227	572		186	1228	548	113	1078	513
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	0.41	0.41	0.41	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.3	38.1	0.0	51.7	40.1	0.0	57.8	52.3	43.2	55.8	39.3	27.6
Incr Delay (d2), s/veh	202.5	0.6	0.0	297.7	25.2	0.0	309.5	212.1	1.9	246.6	115.3	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.9	4.2	0.0	25.6	18.7	0.0	22.0	56.0	10.0	11.2	32.9	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	258.8	38.7	0.0	349.4	65.2	0.0	367.2	264.5	45.0	302.3	154.5	28.4
LnGrp LOS	F	D		F	E		F	F	D	F	F	C
Approach Vol, veh/h		305	A		890	A		2431			1601	
Approach Delay, s/veh		138.3			182.7			248.8			161.8	
Approach LOS		F			F			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.0	52.5	21.0	33.5	18.0	47.5	12.0	42.5
Change Period (Y+Rc), s	4.5	6.0	4.5	4.5	4.5	6.0	4.5	4.5
Max Green Setting (Gmax), s	8.5	45.0	16.5	30.5	13.5	40.0	7.5	39.5
Max Q Clear Time (g_c+I1), s	10.5	48.5	18.5	11.6	15.5	43.5	9.5	37.2
Green Ext Time (p_c), s	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.8

Intersection Summary	
HCM 6th Ctrl Delay	204.4
HCM 6th LOS	F

Notes

Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	3.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	444	51	62	607	67	57
Future Vol, veh/h	444	51	62	607	67	57
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	4	2	0	2
Mvmt Flow	467	54	65	639	71	60

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	521	0	1263	494
Stage 1	-	-	-	-	494	-
Stage 2	-	-	-	-	769	-
Critical Hdwy	-	-	4.14	-	6.4	6.22
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.236	-	3.5	3.318
Pot Cap-1 Maneuver	-	-	1035	-	189	575
Stage 1	-	-	-	-	617	-
Stage 2	-	-	-	-	461	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1035	-	171	575
Mov Cap-2 Maneuver	-	-	-	-	171	-
Stage 1	-	-	-	-	617	-
Stage 2	-	-	-	-	416	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.8	33.5
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	253	-	-	1035	-
HCM Lane V/C Ratio	0.516	-	-	0.063	-
HCM Control Delay (s)	33.5	-	-	8.7	0
HCM Lane LOS	D	-	-	A	A
HCM 95th %tile Q(veh)	2.7	-	-	0.2	-

Intersection	
Intersection Delay, s/veh	11.9
Intersection LOS	B

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	533	668	205	457
Demand Flow Rate, veh/h	547	682	205	470
Vehicles Circulating, veh/h	299	262	663	518
Vehicles Exiting, veh/h	689	606	183	426
Ped Vol Crossing Leg, #/h	0	0	1	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	10.5	12.8	8.7	13.5
Approach LOS	B	B	A	B

Lane	Left	Left	Left	Left
Designated Moves	LT	TR	LTR	LR
Assumed Moves	LT	TR	LTR	LR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	547	682	205	470
Cap Entry Lane, veh/h	1017	1056	702	814
Entry HV Adj Factor	0.974	0.980	1.000	0.972
Flow Entry, veh/h	533	668	205	457
Cap Entry, veh/h	991	1035	702	791
V/C Ratio	0.538	0.646	0.292	0.578
Control Delay, s/veh	10.5	12.8	8.7	13.5
LOS	B	B	A	B
95th %tile Queue, veh	3	5	1	4

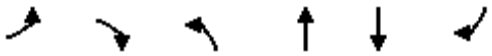
Intersection	
Int Delay, s/veh	6.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	559	2	220	619	5	296
Future Vol, veh/h	559	2	220	619	5	296
Conflicting Peds, #/hr	0	0	0	0	2	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	150	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	0	6	2	0	2
Mvmt Flow	588	2	232	652	5	312

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	590	0	1707	589
Stage 1	-	-	-	-	589	-
Stage 2	-	-	-	-	1118	-
Critical Hdwy	-	-	4.16	-	6.4	6.22
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.254	-	3.5	3.318
Pot Cap-1 Maneuver	-	-	966	-	101	508
Stage 1	-	-	-	-	558	-
Stage 2	-	-	-	-	315	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	966	-	77	508
Mov Cap-2 Maneuver	-	-	-	-	77	-
Stage 1	-	-	-	-	558	-
Stage 2	-	-	-	-	239	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.6	27.7
HCM LOS			D

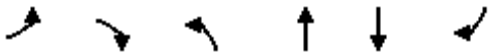
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	465	-	-	966	-
HCM Lane V/C Ratio	0.681	-	-	0.24	-
HCM Control Delay (s)	27.7	-	-	9.9	-
HCM Lane LOS	D	-	-	A	-
HCM 95th %tile Q(veh)	5	-	-	0.9	-



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	592	257	424	1865	1416	427
v/c Ratio	0.96	0.52	0.81	0.81	0.89	0.47
Control Delay	75.2	9.0	63.6	9.9	9.8	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	75.2	9.0	63.6	9.9	9.8	0.2
Queue Length 50th (ft)	237	0	176	254	153	0
Queue Length 95th (ft)	#354	73	m191	m260	m36	m1
Internal Link Dist (ft)	1276			1895	1010	
Turn Bay Length (ft)		200	325			250
Base Capacity (vph)	618	499	566	2304	1588	916
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.96	0.52	0.75	0.81	0.89	0.47

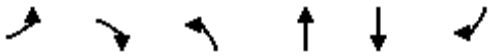
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	574	249	411	1809	1374	414
Future Volume (vph)	574	249	411	1809	1374	414
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	4.5	5.5	5.5	5.5	5.5
Lane Util. Factor	0.97	1.00	0.97	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3101	1473	3162	3197	3137	1444
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3101	1473	3162	3197	3137	1444
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	592	257	424	1865	1416	427
RTOR Reduction (vph)	0	206	0	0	0	185
Lane Group Flow (vph)	592	51	424	1865	1416	242
Heavy Vehicles (%)	4%	1%	2%	4%	6%	3%
Turn Type	Prot	Perm	Prot	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	23.9	23.9	19.8	86.1	60.8	60.8
Effective Green, g (s)	23.9	23.9	19.8	86.1	60.8	60.8
Actuated g/C Ratio	0.20	0.20	0.17	0.72	0.51	0.51
Clearance Time (s)	4.5	4.5	5.5	5.5	5.5	5.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	617	293	521	2293	1589	731
v/s Ratio Prot	c0.19		0.13	c0.58	c0.45	
v/s Ratio Perm		0.03				0.17
v/c Ratio	0.96	0.17	0.81	0.81	0.89	0.33
Uniform Delay, d1	47.6	39.9	48.3	11.5	26.6	17.5
Progression Factor	1.00	1.00	1.14	0.66	0.30	0.03
Incremental Delay, d2	26.1	0.3	6.1	2.1	0.8	0.1
Delay (s)	73.7	40.2	61.3	9.7	8.8	0.6
Level of Service	E	D	E	A	A	A
Approach Delay (s)	63.5			19.2	6.9	
Approach LOS	E			B	A	

Intersection Summary			
HCM 2000 Control Delay	22.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	15.5
Intersection Capacity Utilization	84.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



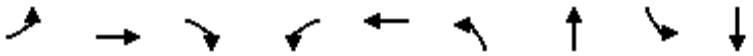
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	574	249	411	1809	1374	414
Future Volume (veh/h)	574	249	411	1809	1374	414
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1695	1736	1723	1695	1668	1709
Adj Flow Rate, veh/h	592	257	424	1865	1416	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	4	1	2	4	6	3
Cap, veh/h	613	288	476	2322	1666	
Arrive On Green	0.20	0.20	0.30	1.00	0.70	0.00
Sat Flow, veh/h	3132	1471	3183	3306	3253	1448
Grp Volume(v), veh/h	592	257	424	1865	1416	0
Grp Sat Flow(s),veh/h/ln	1566	1471	1591	1611	1585	1448
Q Serve(g_s), s	22.5	20.4	15.3	0.0	39.8	0.0
Cycle Q Clear(g_c), s	22.5	20.4	15.3	0.0	39.8	0.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	613	288	476	2322	1666	
V/C Ratio(X)	0.97	0.89	0.89	0.80	0.85	
Avail Cap(c_a), veh/h	613	288	570	2322	1666	
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.33	1.33
Upstream Filter(I)	1.00	1.00	0.15	0.15	0.09	0.00
Uniform Delay (d), s/veh	47.8	47.0	41.1	0.0	14.6	0.0
Incr Delay (d2), s/veh	27.7	27.4	2.6	0.5	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.1	17.6	5.3	0.2	10.9	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	75.6	74.4	43.8	0.5	15.1	0.0
LnGrp LOS	E	E	D	A	B	
Approach Vol, veh/h	849			2289	1416	A
Approach Delay, s/veh	75.2			8.5	15.1	
Approach LOS	E			A	B	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		92.0		28.0	23.4	68.6
Change Period (Y+Rc), s		5.5		4.5	5.5	5.5
Max Green Setting (Gmax), s		86.5		23.5	21.5	59.5
Max Q Clear Time (g_c+I1), s		2.0		24.5	17.3	41.8
Green Ext Time (p_c), s		32.5		0.0	0.7	10.2

Intersection Summary		
HCM 6th Ctrl Delay		23.0
HCM 6th LOS		C

Notes

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.



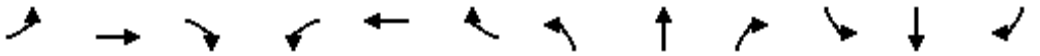
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	62	163	170	254	582	303	1713	96	1359
v/c Ratio	0.44	0.50	0.41	1.01	0.80	0.90	1.00	0.63	0.99
Control Delay	39.8	47.4	8.7	99.4	45.8	64.9	48.7	28.9	61.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.8	47.4	8.7	99.4	45.8	64.9	48.7	28.9	61.1
Queue Length 50th (ft)	35	112	0	164	191	187	~764	32	590
Queue Length 95th (ft)	67	174	56	#308	249	#416	#911	m41	#732
Internal Link Dist (ft)		398			1911		874		1895
Turn Bay Length (ft)	150			150		150		175	
Base Capacity (vph)	142	411	473	252	820	336	1721	153	1369
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.44	0.40	0.36	1.01	0.71	0.90	1.00	0.63	0.99

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

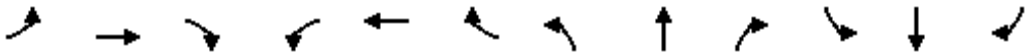
m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	62	163	170	254	366	216	303	1573	140	96	1329	30
Future Volume (vph)	62	163	170	254	366	216	303	1573	140	96	1329	30
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.94		1.00	0.99		1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1662	1733	1449	1628	3049		1646	3129		1646	3127	
Flt Permitted	0.20	1.00	1.00	0.47	1.00		0.07	1.00		0.08	1.00	
Satd. Flow (perm)	351	1733	1449	808	3049		124	3129		134	3127	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	62	163	170	254	366	216	303	1573	140	96	1329	30
RTOR Reduction (vph)	0	0	136	0	75	0	0	5	0	0	1	0
Lane Group Flow (vph)	62	163	34	254	507	0	303	1708	0	96	1358	0
Confl. Peds. (#/hr)	2		2	2		2	2		1	1		2
Heavy Vehicles (%)	0%	1%	1%	2%	2%	3%	1%	5%	2%	1%	6%	3%
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)	28.1	23.7	23.7	32.3	25.8		76.3	64.9		58.5	51.6	
Effective Green, g (s)	28.1	23.7	23.7	32.3	25.8		76.3	64.9		58.5	51.6	
Actuated g/C Ratio	0.23	0.20	0.20	0.27	0.22		0.64	0.54		0.49	0.43	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	130	342	286	261	655		335	1692		152	1344	
v/s Ratio Prot	0.02	0.09		c0.05	0.17		c0.15	c0.55		0.04	0.43	
v/s Ratio Perm	0.09		0.02	c0.21			0.42			0.27		
v/c Ratio	0.48	0.48	0.12	0.97	0.77		0.90	1.01		0.63	1.01	
Uniform Delay, d1	37.3	42.7	39.6	43.6	44.4		37.7	27.5		24.0	34.2	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		0.97	1.36	
Incremental Delay, d2	2.7	1.0	0.2	47.9	5.7		26.5	24.2		4.4	20.3	
Delay (s)	40.0	43.7	39.7	91.5	50.1		64.1	51.8		27.7	67.0	
Level of Service	D	D	D	F	D		E	D		C	E	
Approach Delay (s)		41.4			62.7			53.6			64.4	
Approach LOS		D			E			D			E	

Intersection Summary			
HCM 2000 Control Delay	57.5	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	99.1%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	62	163	170	254	366	216	303	1573	140	96	1329	30
Future Volume (veh/h)	62	163	170	254	366	216	303	1573	140	96	1329	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1750	1736	1736	1723	1723	1709	1736	1682	1723	1736	1668	1709
Adj Flow Rate, veh/h	62	163	170	254	366	216	303	1573	140	96	1329	30
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	1	1	2	2	3	1	5	2	1	6	3
Cap, veh/h	152	345	292	260	423	246	296	1642	145	144	1509	34
Arrive On Green	0.04	0.20	0.20	0.05	0.21	0.21	0.12	0.55	0.55	0.04	0.48	0.48
Sat Flow, veh/h	1667	1736	1467	1641	1991	1156	1654	2970	262	1654	3168	71
Grp Volume(v), veh/h	62	163	170	254	300	282	303	840	873	96	664	695
Grp Sat Flow(s),veh/h/ln	1667	1736	1467	1641	1637	1511	1654	1598	1634	1654	1585	1655
Q Serve(g_s), s	3.5	10.0	12.6	6.5	21.2	21.7	14.5	59.5	61.6	3.5	45.4	45.5
Cycle Q Clear(g_c), s	3.5	10.0	12.6	6.5	21.2	21.7	14.5	59.5	61.6	3.5	45.4	45.5
Prop In Lane	1.00		1.00	1.00		0.77	1.00		0.16	1.00		0.04
Lane Grp Cap(c), veh/h	152	345	292	260	348	321	296	883	903	144	755	788
V/C Ratio(X)	0.41	0.47	0.58	0.98	0.86	0.88	1.02	0.95	0.97	0.67	0.88	0.88
Avail Cap(c_a), veh/h	161	412	348	260	402	371	296	883	903	146	755	788
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.44	0.44	0.44
Uniform Delay (d), s/veh	37.9	42.5	43.6	47.5	45.5	45.7	34.6	25.3	25.8	28.0	28.3	28.4
Incr Delay (d2), s/veh	1.8	1.0	1.8	48.8	15.4	18.8	58.4	20.5	22.9	4.9	6.8	6.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	4.4	4.7	8.3	10.1	9.8	13.6	26.3	28.3	1.5	18.1	18.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.7	43.5	45.4	96.3	61.0	64.6	93.1	45.8	48.7	32.9	35.2	35.0
LnGrp LOS	D	D	D	F	E	E	F	D	D	C	D	C
Approach Vol, veh/h		395			836			2016			1455	
Approach Delay, s/veh		43.7			72.9			54.1			34.9	
Approach LOS		D			E			D			C	

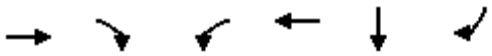
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.8	70.8	11.0	28.3	19.0	61.7	9.3	30.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.5	61.5	6.5	28.5	14.5	52.5	5.5	29.5
Max Q Clear Time (g_c+I1), s	5.5	63.6	8.5	14.6	16.5	47.5	5.5	23.7
Green Ext Time (p_c), s	0.0	0.0	0.0	1.2	0.0	3.6	0.0	1.8

Intersection Summary	
HCM 6th Ctrl Delay	50.7
HCM 6th LOS	D

Intersection	
Intersection Delay, s/veh	16.0
Intersection LOS	C

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	353	709	316	487
Demand Flow Rate, veh/h	357	725	325	487
Vehicles Circulating, veh/h	365	417	603	578
Vehicles Exiting, veh/h	700	511	119	564
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	8.0	22.5	10.9	15.7
Approach LOS	A	C	B	C

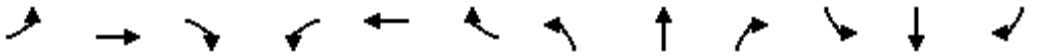
Lane	Left	Left	Left	Left
Designated Moves	TR	LT	LR	LTR
Assumed Moves	TR	LT	LR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	357	725	325	487
Cap Entry Lane, veh/h	951	902	746	765
Entry HV Adj Factor	0.988	0.978	0.972	1.000
Flow Entry, veh/h	353	709	316	487
Cap Entry, veh/h	940	882	725	765
V/C Ratio	0.375	0.804	0.436	0.636
Control Delay, s/veh	8.0	22.5	10.9	15.7
LOS	A	C	B	C
95th %tile Queue, veh	2	9	2	5



Lane Group	EBT	EBR	WBL	WBT	SBT	SBR
Lane Group Flow (vph)	293	229	620	762	229	219
v/c Ratio	0.62	0.41	0.88	0.68	0.67	0.47
Control Delay	29.8	5.9	27.0	12.4	35.0	7.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.8	5.9	27.0	12.4	35.0	7.9
Queue Length 50th (ft)	113	0	138	178	91	4
Queue Length 95th (ft)	#192	49	#372	344	151	53
Internal Link Dist (ft)	565			624	775	
Turn Bay Length (ft)		85	100			200
Base Capacity (vph)	476	558	708	1127	427	528
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.62	0.41	0.88	0.68	0.54	0.41

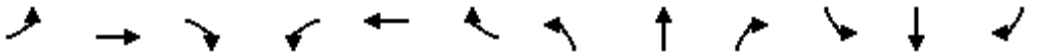
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	293	229	620	762	0	0	0	0	229	0	219
Future Volume (vph)	0	293	229	620	762	0	0	0	0	229	0	219
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		5.0	5.0	5.0	5.0						5.0	5.0
Lane Util. Factor		1.00	1.00	1.00	1.00						1.00	1.00
Frpb, ped/bikes		1.00	0.97	1.00	1.00						1.00	1.00
Flpb, ped/bikes		1.00	1.00	1.00	1.00						1.00	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						0.95	1.00
Satd. Flow (prot)		1733	1430	1644	1733						1662	1458
Flt Permitted		1.00	1.00	0.34	1.00						0.95	1.00
Satd. Flow (perm)		1733	1430	592	1733						1662	1458
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	293	229	620	762	0	0	0	0	229	0	219
RTOR Reduction (vph)	0	0	167	0	0	0	0	0	0	0	0	164
Lane Group Flow (vph)	0	293	62	620	762	0	0	0	0	0	229	55
Confl. Peds. (#/hr)			4	4								
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	0%	1%	1%	1%	1%	0%	0%	0%	0%	0%	0%	2%
Turn Type		NA	Perm	pm+pt	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases			2	6						4		4
Actuated Green, G (s)		19.1	19.1	45.6	45.6						14.4	14.4
Effective Green, g (s)		19.1	19.1	45.6	45.6						14.4	14.4
Actuated g/C Ratio		0.27	0.27	0.65	0.65						0.21	0.21
Clearance Time (s)		5.0	5.0	5.0	5.0						5.0	5.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0						3.0	3.0
Lane Grp Cap (vph)		472	390	708	1128						341	299
v/s Ratio Prot		0.17		c0.27	0.44							
v/s Ratio Perm			0.04	c0.30							0.14	0.04
v/c Ratio		0.62	0.16	0.88	0.68						0.67	0.18
Uniform Delay, d1		22.3	19.4	9.2	7.6						25.6	22.9
Progression Factor		1.00	1.00	1.00	1.00						1.00	1.00
Incremental Delay, d2		6.0	0.9	11.7	3.2						5.1	0.3
Delay (s)		28.3	20.2	21.0	10.8						30.8	23.2
Level of Service		C	C	C	B						C	C
Approach Delay (s)		24.8			15.4			0.0			27.1	
Approach LOS		C			B			A			C	

Intersection Summary			
HCM 2000 Control Delay	19.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	114.3%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	293	229	620	762	0	0	0	0	229	0	219
Future Volume (veh/h)	0	293	229	620	762	0	0	0	0	229	0	219
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1736	1736	1736	1736	0				1750	1750	1723
Adj Flow Rate, veh/h	0	293	229	620	762	0				229	0	219
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Percent Heavy Veh, %	0	1	1	1	1	0				0	0	2
Cap, veh/h	0	591	487	697	1162	0				313	0	274
Arrive On Green	0.00	0.34	0.34	0.26	0.67	0.00				0.19	0.00	0.19
Sat Flow, veh/h	0	1736	1432	1654	1736	0				1667	0	1460
Grp Volume(v), veh/h	0	293	229	620	762	0				229	0	219
Grp Sat Flow(s),veh/h/ln	0	1736	1432	1654	1736	0				1667	0	1460
Q Serve(g_s), s	0.0	9.4	8.8	15.7	18.1	0.0				9.1	0.0	10.0
Cycle Q Clear(g_c), s	0.0	9.4	8.8	15.7	18.1	0.0				9.1	0.0	10.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	591	487	697	1162	0				313	0	274
V/C Ratio(X)	0.00	0.50	0.47	0.89	0.66	0.00				0.73	0.00	0.80
Avail Cap(c_a), veh/h	0	591	487	720	1162	0				429	0	375
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.09	0.09	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	18.3	18.1	10.6	6.8	0.0				26.8	0.0	27.2
Incr Delay (d2), s/veh	0.0	3.0	3.2	1.4	0.3	0.0				4.1	0.0	8.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	4.0	3.1	4.6	4.9	0.0				3.8	0.0	4.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	21.3	21.4	12.0	7.1	0.0				30.9	0.0	35.5
LnGrp LOS	A	C	C	B	A	A				C	A	D
Approach Vol, veh/h		522			1382						448	
Approach Delay, s/veh		21.3			9.3						33.1	
Approach LOS		C			A						C	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	23.0	28.8		18.1		51.9
Change Period (Y+Rc), s	5.0	5.0		5.0		5.0
Max Green Setting (Gmax), s	19.0	18.0		18.0		42.0
Max Q Clear Time (g_c+I1), s	17.7	11.4		12.0		20.1
Green Ext Time (p_c), s	0.4	1.5		1.1		5.8

Intersection Summary	
HCM 6th Ctrl Delay	16.5
HCM 6th LOS	B

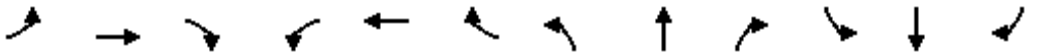


Lane Group	EBL	EBT	WBT	WBR	NBL	NBT
Lane Group Flow (vph)	147	466	796	450	588	589
v/c Ratio	0.68	0.49	1.14	0.58	1.16	0.85
Control Delay	27.3	12.2	102.2	7.6	118.4	22.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.3	12.2	102.2	7.6	118.4	22.9
Queue Length 50th (ft)	29	115	~412	30	~309	91
Queue Length 95th (ft)	#94	187	#614	104	#492	#289
Internal Link Dist (ft)		624	360			760
Turn Bay Length (ft)	100			150	160	
Base Capacity (vph)	216	946	700	782	507	692
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.68	0.49	1.14	0.58	1.16	0.85

Intersection Summary

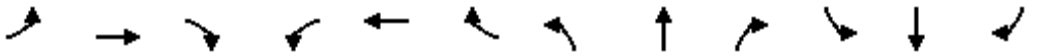
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	147	466	0	0	796	450	588	0	589	0	0	0
Future Volume (vph)	147	466	0	0	796	450	588	0	589	0	0	0
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	5.0	5.0			5.0	5.0	5.0	5.0				
Lane Util. Factor	1.00	1.00			1.00	1.00	1.00	1.00				
Frpb, ped/bikes	1.00	1.00			1.00	0.98	1.00	1.00				
Flpb, ped/bikes	1.00	1.00			1.00	1.00	1.00	1.00				
Frt	1.00	1.00			1.00	0.85	1.00	0.85				
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00				
Satd. Flow (prot)	1662	1733			1733	1436	1627	1430				
Flt Permitted	0.12	1.00			1.00	1.00	0.95	1.00				
Satd. Flow (perm)	209	1733			1733	1436	1627	1430				
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	147	466	0	0	796	450	588	0	589	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	202	0	246	0	0	0	0
Lane Group Flow (vph)	147	466	0	0	796	248	588	343	0	0	0	0
Confl. Peds. (#/hr)	2		2	2		2	1					1
Confl. Bikes (#/hr)						1						
Heavy Vehicles (%)	0%	1%	0%	0%	1%	1%	2%	0%	4%	0%	0%	0%
Turn Type	pm+pt	NA			NA	Perm	Perm	NA				
Protected Phases	5	2			6			8				
Permitted Phases	2					6	8					
Actuated Green, G (s)	38.5	38.5			28.5	28.5	22.0	22.0				
Effective Green, g (s)	38.5	38.5			28.5	28.5	22.0	22.0				
Actuated g/C Ratio	0.55	0.55			0.40	0.40	0.31	0.31				
Clearance Time (s)	5.0	5.0			5.0	5.0	5.0	5.0				
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0				
Lane Grp Cap (vph)	217	946			700	580	507	446				
v/s Ratio Prot	0.05	c0.27			c0.46			0.24				
v/s Ratio Perm	0.32					0.17	c0.36					
v/c Ratio	0.68	0.49			1.14	0.43	1.16	0.77				
Uniform Delay, d1	14.7	9.9			21.0	15.1	24.2	21.9				
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00				
Incremental Delay, d2	8.1	1.8			78.5	2.3	92.0	7.8				
Delay (s)	22.8	11.8			99.5	17.4	116.3	29.7				
Level of Service	C	B			F	B	F	C				
Approach Delay (s)		14.4			69.8			73.0			0.0	
Approach LOS		B			E			E			A	

Intersection Summary			
HCM 2000 Control Delay	59.9	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.11		
Actuated Cycle Length (s)	70.5	Sum of lost time (s)	15.0
Intersection Capacity Utilization	114.3%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	147	466	0	0	796	450	588	0	589	0	0	0
Future Volume (veh/h)	147	466	0	0	796	450	588	0	589	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1750	1736	0	0	1736	1736	1723	1750	1695			
Adj Flow Rate, veh/h	147	466	0	0	796	450	588	0	589			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Percent Heavy Veh, %	0	1	0	0	1	1	2	0	4			
Cap, veh/h	271	1171	0	0	930	770	516	0	465			
Arrive On Green	0.07	0.67	0.00	0.00	0.54	0.54	0.31	0.00	0.31			
Sat Flow, veh/h	1667	1736	0	0	1736	1438	1641	0	1481			
Grp Volume(v), veh/h	147	466	0	0	796	450	588	0	589			
Grp Sat Flow(s),veh/h/ln	1667	1736	0	0	1736	1438	1641	0	1481			
Q Serve(g_s), s	2.5	8.4	0.0	0.0	27.5	14.8	22.0	0.0	22.0			
Cycle Q Clear(g_c), s	2.5	8.4	0.0	0.0	27.5	14.8	22.0	0.0	22.0			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	271	1171	0	0	930	770	516	0	465			
V/C Ratio(X)	0.54	0.40	0.00	0.00	0.86	0.58	1.14	0.00	1.27			
Avail Cap(c_a), veh/h	278	1171	0	0	930	770	516	0	465			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.74	0.74	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	14.6	5.1	0.0	0.0	14.0	11.0	24.0	0.0	24.0			
Incr Delay (d2), s/veh	1.5	0.8	0.0	0.0	10.0	3.2	84.4	0.0	135.8			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	1.3	2.4	0.0	0.0	11.6	4.7	19.9	0.0	24.6			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.1	5.8	0.0	0.0	23.9	14.2	108.4	0.0	159.8			
LnGrp LOS	B	A	A	A	C	B	F	A	F			
Approach Vol, veh/h		613			1246			1177				
Approach Delay, s/veh		8.3			20.4			134.1				
Approach LOS		A			C			F				
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		52.4			9.7	42.7		27.0				
Change Period (Y+Rc), s		5.0			5.0	5.0		5.0				
Max Green Setting (Gmax), s		38.5			5.0	28.5		22.0				
Max Q Clear Time (g_c+I1), s		10.4			4.5	29.5		24.0				
Green Ext Time (p_c), s		3.2			0.0	0.0		0.0				
Intersection Summary												
HCM 6th Ctrl Delay			62.1									
HCM 6th LOS			E									

Intersection	
Intersection Delay, s/veh	31.9
Intersection LOS	D

Approach	EB	WB	NB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	905	842	494
Demand Flow Rate, veh/h	942	850	533
Vehicles Circulating, veh/h	19	473	745
Vehicles Exiting, veh/h	1304	805	216
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	12.3	52.6	32.4
Approach LOS	B	F	D

Lane	Left	Left	Left
Designated Moves	TR	LT	LR
Assumed Moves	TR	LT	LR
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	942	850	533
Cap Entry Lane, veh/h	1353	852	645
Entry HV Adj Factor	0.961	0.990	0.927
Flow Entry, veh/h	905	842	494
Cap Entry, veh/h	1301	844	598
V/C Ratio	0.696	0.998	0.826
Control Delay, s/veh	12.3	52.6	32.4
LOS	B	F	D
95th %tile Queue, veh	6	18	9

APPENDIX 6: YEAR 2040 TOTAL TRAFFIC CONDITIONS LOS WORKSHEETS

Intersection	
Int Delay, s/veh	194.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	288	241	90	266	420	201
Future Vol, veh/h	288	241	90	266	420	201
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	4	21	0	1	2
Mvmt Flow	303	254	95	280	442	212

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	557	0	900	430
Stage 1	-	-	-	-	430	-
Stage 2	-	-	-	-	470	-
Critical Hdwy	-	-	4.31	-	6.41	6.22
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	-	-	2.389	-	3.509	3.318
Pot Cap-1 Maneuver	-	-	925	-	~ 310	625
Stage 1	-	-	-	-	658	-
Stage 2	-	-	-	-	631	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	925	-	~ 272	625
Mov Cap-2 Maneuver	-	-	-	-	~ 272	-
Stage 1	-	-	-	-	658	-
Stage 2	-	-	-	-	554	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.4	$ 470.2
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	333	-	-	925	-
HCM Lane V/C Ratio	1.963	-	-	0.102	-
HCM Control Delay (s)	$ 470.2	-	-	9.3	0
HCM Lane LOS	F	-	-	A	A
HCM 95th %tile Q(veh)	45.5	-	-	0.3	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	3.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	198	1814	261	0	1579
Future Vol, veh/h	0	198	1814	261	0	1579
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	Free	-	None
Storage Length	-	0	-	250	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	8	4	6	0	6
Mvmt Flow	0	206	1890	272	0	1645

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	945	0	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.06	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.38	-	-	-	-
Pot Cap-1 Maneuver	0	252	-	0	0	-
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	-	252	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	61.7	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	WBLn1	SBT
Capacity (veh/h)	-	252	-
HCM Lane V/C Ratio	-	0.818	-
HCM Control Delay (s)	-	61.7	-
HCM Lane LOS	-	F	-
HCM 95th %tile Q(veh)	-	6.4	-

Intersection	
Intersection Delay, s/veh	43
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	91	10	114	66	24	40	110	531	15	10	319	15
Future Vol, veh/h	91	10	114	66	24	40	110	531	15	10	319	15
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	0	30	8	0	6	0	0	1	31	0	8	0
Mvmt Flow	96	11	120	69	25	42	116	559	16	11	336	16
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay	15.7	13.7	67.7	23.9
HCM LOS	C	B	F	C

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	42%	51%	100%	0%
Vol Thru, %	0%	97%	5%	18%	0%	96%
Vol Right, %	0%	3%	53%	31%	0%	4%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	110	546	215	130	10	334
LT Vol	110	0	91	66	10	0
Through Vol	0	531	10	24	0	319
RT Vol	0	15	114	40	0	15
Lane Flow Rate	116	575	226	137	11	352
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.229	1.055	0.438	0.283	0.022	0.687
Departure Headway (Hd)	7.121	6.607	7.192	7.705	7.633	7.227
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	507	552	505	469	472	503
Service Time	4.821	4.307	5.192	5.705	5.333	4.927
HCM Lane V/C Ratio	0.229	1.042	0.448	0.292	0.023	0.7
HCM Control Delay	11.9	79	15.7	13.7	10.5	24.3
HCM Lane LOS	B	F	C	B	B	C
HCM 95th-tile Q	0.9	16.7	2.2	1.2	0.1	5.2

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	104	0	0	85	0	1989	116	0	1545	34
Future Vol, veh/h	0	0	104	0	0	85	0	1989	116	0	1545	34
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	-	-	215	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	0	0	2	0	0	4	0	5	17	0	7	0
Mvmt Flow	0	0	108	0	0	89	0	2072	121	0	1609	35

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	822	-	-	1036	-	0	0	-	-	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.94	-	-	6.98	-	-	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.32	-	-	3.34	-	-	-	-	-	-
Pot Cap-1 Maneuver	0	0	317	0	0	225	0	-	-	0	-	-
Stage 1	0	0	-	0	0	-	0	-	-	0	-	-
Stage 2	0	0	-	0	0	-	0	-	-	0	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	317	-	-	225	-	-	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	22.1	31	0	0
HCM LOS	C	D		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	WBLn1	SBT	SBR
Capacity (veh/h)	-	-	317	225	-	-
HCM Lane V/C Ratio	-	-	0.342	0.394	-	-
HCM Control Delay (s)	-	-	22.1	31	-	-
HCM Lane LOS	-	-	C	D	-	-
HCM 95th %tile Q(veh)	-	-	1.5	1.8	-	-

Intersection	
Int Delay, s/veh	73.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	46	34	30	129	17	120	29	471	86	52	506	16
Future Vol, veh/h	46	34	30	129	17	120	29	471	86	52	506	16
Conflicting Peds, #/hr	0	0	0	0	0	0	1	0	0	0	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	75	-	-	75	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	7	0	0	0	0	0	0	4	0	0	5	7
Mvmt Flow	48	36	32	136	18	126	31	496	91	55	533	17

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1329	1302	543	1290	1265	542	551	0	0	587	0	0
Stage 1	653	653	-	604	604	-	-	-	-	-	-	-
Stage 2	676	649	-	686	661	-	-	-	-	-	-	-
Critical Hdwy	7.17	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.17	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.17	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.563	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	129	162	544	142	171	544	1029	-	-	998	-	-
Stage 1	448	467	-	489	491	-	-	-	-	-	-	-
Stage 2	435	469	-	441	463	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	85	148	543	~ 102	157	544	1028	-	-	998	-	-
Mov Cap-2 Maneuver	85	148	-	~ 102	157	-	-	-	-	-	-	-
Stage 1	434	441	-	474	476	-	-	-	-	-	-	-
Stage 2	312	455	-	361	437	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	110	$ 377.4	0.4	0.8
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1028	-	-	133	167	998	-	-
HCM Lane V/C Ratio	0.03	-	-	0.871	1.677	0.055	-	-
HCM Control Delay (s)	8.6	-	-	110	$ 377.4	8.8	-	-
HCM Lane LOS	A	-	-	F	F	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	5.6	19.5	0.2	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	3.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	55	55	0	94	96	0
Future Vol, veh/h	55	55	0	94	96	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	65	65	0	111	113	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	130	0	209	98
Stage 1	-	-	-	-	98	-
Stage 2	-	-	-	-	111	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1468	-	784	963
Stage 1	-	-	-	-	931	-
Stage 2	-	-	-	-	919	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1468	-	784	963
Mov Cap-2 Maneuver	-	-	-	-	784	-
Stage 1	-	-	-	-	931	-
Stage 2	-	-	-	-	919	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	10.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	784	-	-	1468	-
HCM Lane V/C Ratio	0.144	-	-	-	-
HCM Control Delay (s)	10.4	-	-	0	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.5	-	-	0	-

Intersection	
Int Delay, s/veh	5.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	55	0	0	94	0
Future Vol, veh/h	0	55	0	0	94	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	65	0	0	111	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	65	0	34	33
Stage 1	-	-	-	-	33	-
Stage 2	-	-	-	-	1	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1550	-	984	1046
Stage 1	-	-	-	-	995	-
Stage 2	-	-	-	-	1028	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1550	-	984	1046
Mov Cap-2 Maneuver	-	-	-	-	984	-
Stage 1	-	-	-	-	995	-
Stage 2	-	-	-	-	1028	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	9.1
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	984	-	-	1550	-
HCM Lane V/C Ratio	0.112	-	-	-	-
HCM Control Delay (s)	9.1	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0.4	-	-	0	-

Intersection	
Int Delay, s/veh	267.7

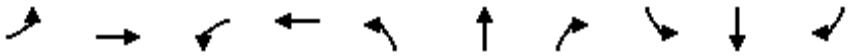
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	0	6	314	0	153	2	417	263	94	509	63
Future Vol, veh/h	15	0	6	314	0	153	2	417	263	94	509	63
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	75	-	-	75	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	20	0	17	0	0	0	0	5	0	0	3	2
Mvmt Flow	16	0	6	331	0	161	2	439	277	99	536	66

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1429	1487	569	1352	1382	578	602	0	0	716	0	0
Stage 1	767	767	-	582	582	-	-	-	-	-	-	-
Stage 2	662	720	-	770	800	-	-	-	-	-	-	-
Critical Hdwy	7.3	6.5	6.37	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.3	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.3	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.68	4	3.453	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	103	126	494	~ 128	145	519	985	-	-	894	-	-
Stage 1	369	414	-	502	502	-	-	-	-	-	-	-
Stage 2	423	435	-	396	400	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	65	112	494	~ 115	129	519	985	-	-	894	-	-
Mov Cap-2 Maneuver	65	112	-	~ 115	129	-	-	-	-	-	-	-
Stage 1	368	368	-	501	501	-	-	-	-	-	-	-
Stage 2	291	434	-	348	356	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	60.8	$ 1047.7	0	1.3
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	985	-	-	86	154	894	-	-
HCM Lane V/C Ratio	0.002	-	-	0.257	3.192	0.111	-	-
HCM Control Delay (s)	8.7	-	-	60.8	$ 1047.7	9.5	-	-
HCM Lane LOS	A	-	-	F	F	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.9	46.2	0.4	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



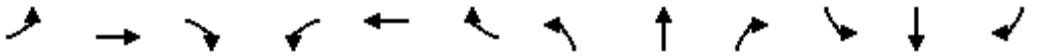
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	138	369	494	831	310	1828	379	247	1335	101
v/c Ratio	1.35	0.86	2.19	1.48	1.68	1.55	0.50	2.21	1.30	0.16
Control Delay	252.4	60.9	573.6	258.2	349.0	279.8	4.2	596.7	177.0	0.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	252.4	60.9	573.6	258.2	349.0	279.8	4.2	596.7	177.0	0.6
Queue Length 50th (ft)	~140	261	~614	~888	~362	~1055	19	~308	~697	0
Queue Length 95th (ft)	#272	#430	#825	#1136	m#441	m#1148	m32	#474	#835	0
Internal Link Dist (ft)		907		1496		1010			1325	
Turn Bay Length (ft)	150		450		275		570	400		100
Base Capacity (vph)	102	429	226	560	185	1176	763	112	1026	614
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.35	0.86	2.19	1.48	1.68	1.55	0.50	2.21	1.30	0.16

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

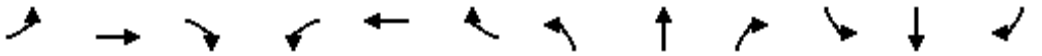
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	135	244	118	484	634	180	304	1791	371	242	1308	99
Future Volume (vph)	135	244	118	484	634	180	304	1791	371	242	1308	99
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	4.5		4.5	4.5		4.5	6.0	6.0	4.5	6.0	6.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.95		1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1646	1636		1646	1675		1646	3137	1403	1583	3079	1488
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1646	1636		1646	1675		1646	3137	1403	1583	3079	1488
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	138	249	120	494	647	184	310	1828	379	247	1335	101
RTOR Reduction (vph)	0	14	0	0	9	0	0	0	237	0	0	67
Lane Group Flow (vph)	138	355	0	494	822	0	310	1828	142	247	1335	34
Confl. Peds. (#/hr)			1	1								
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	1%	0%	4%	1%	1%	1%	1%	6%	6%	5%	8%	0%
Turn Type	Prot	NA		Prot	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	7.5	30.5		16.5	39.5		13.5	45.0	45.0	8.5	40.0	40.0
Effective Green, g (s)	7.5	30.5		16.5	39.5		13.5	45.0	45.0	8.5	40.0	40.0
Actuated g/C Ratio	0.06	0.25		0.14	0.33		0.11	0.38	0.38	0.07	0.33	0.33
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	6.0	6.0	4.5	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	102	415		226	551		185	1176	526	112	1026	496
v/s Ratio Prot	0.08	0.22		c0.30	c0.49		c0.19	c0.58		c0.16	0.43	
v/s Ratio Perm									0.10			0.02
v/c Ratio	1.35	0.86		2.19	1.49		1.68	1.55	0.27	2.21	1.30	0.07
Uniform Delay, d1	56.2	42.6		51.8	40.2		53.2	37.5	26.1	55.8	40.0	27.3
Progression Factor	1.00	1.00		1.00	1.00		1.06	0.94	1.16	1.00	1.00	1.00
Incremental Delay, d2	210.0	15.7		547.9	231.0		314.6	251.4	0.6	570.4	142.7	0.3
Delay (s)	266.2	58.3		599.7	271.3		370.8	286.8	30.9	626.1	182.7	27.5
Level of Service	F	E		F	F		F	F	C	F	F	C
Approach Delay (s)		114.9			393.7			258.6			238.5	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM 2000 Control Delay	270.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.74		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	19.5
Intersection Capacity Utilization	140.8%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	135	244	118	484	634	180	304	1791	371	242	1308	99
Future Volume (veh/h)	135	244	118	484	634	180	304	1791	371	242	1308	99
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1736	1750	1695	1736	1736	1736	1736	1668	1668	1682	1641	1750
Adj Flow Rate, veh/h	138	249	0	494	647	0	310	1828	379	247	1335	101
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	1	0	4	1	1	1	1	6	6	5	8	0
Cap, veh/h	103	445		227	572		186	1189	530	113	1039	494
Arrive On Green	0.06	0.25	0.00	0.14	0.33	0.00	0.04	0.12	0.12	0.07	0.33	0.33
Sat Flow, veh/h	1654	1750	0	1654	1736	0	1654	3169	1414	1602	3118	1483
Grp Volume(v), veh/h	138	249	0	494	647	0	310	1828	379	247	1335	101
Grp Sat Flow(s),veh/h/ln	1654	1750	0	1654	1736	0	1654	1585	1414	1602	1559	1483
Q Serve(g_s), s	7.5	14.8	0.0	16.5	39.5	0.0	13.5	45.0	30.9	8.5	40.0	5.8
Cycle Q Clear(g_c), s	7.5	14.8	0.0	16.5	39.5	0.0	13.5	45.0	30.9	8.5	40.0	5.8
Prop In Lane	1.00		0.00	1.00		0.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	103	445		227	572		186	1189	530	113	1039	494
V/C Ratio(X)	1.34	0.56		2.17	1.13		1.67	1.54	0.71	2.18	1.28	0.20
Avail Cap(c_a), veh/h	103	445		227	572		186	1189	530	113	1039	494
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	0.35	0.35	0.35	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.3	38.9	0.0	51.7	40.3	0.0	57.8	52.6	46.4	55.8	40.0	28.6
Incr Delay (d2), s/veh	202.5	1.6	0.0	541.9	79.6	0.0	308.1	243.6	2.9	557.6	135.5	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.9	6.6	0.0	41.0	29.2	0.0	21.9	59.4	12.2	21.0	34.6	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	258.8	40.5	0.0	593.7	119.8	0.0	365.9	296.2	49.3	613.3	175.5	29.5
LnGrp LOS	F	D		F	F		F	F	D	F	F	C
Approach Vol, veh/h		387	A		1141	A		2517			1683	
Approach Delay, s/veh		118.3			325.0			267.6			231.0	
Approach LOS		F			F			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.0	51.0	21.0	35.0	18.0	46.0	12.0	44.0
Change Period (Y+Rc), s	4.5	6.0	4.5	4.5	4.5	6.0	4.5	4.5
Max Green Setting (Gmax), s	8.5	45.0	16.5	30.5	13.5	40.0	7.5	39.5
Max Q Clear Time (g_c+I1), s	10.5	47.0	18.5	16.8	15.5	42.0	9.5	41.5
Green Ext Time (p_c), s	0.0	0.0	0.0	1.1	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	258.2
HCM 6th LOS	F

Notes

Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	15.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	662	51	77	916	67	57
Future Vol, veh/h	662	51	77	916	67	57
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	4	2	0	2
Mvmt Flow	697	54	81	964	71	60

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	751	0	1850	724
Stage 1	-	-	-	-	724	-
Stage 2	-	-	-	-	1126	-
Critical Hdwy	-	-	4.14	-	6.4	6.22
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.236	-	3.5	3.318
Pot Cap-1 Maneuver	-	-	849	-	83	426
Stage 1	-	-	-	-	484	-
Stage 2	-	-	-	-	313	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	849	-	~ 66	426
Mov Cap-2 Maneuver	-	-	-	-	~ 66	-
Stage 1	-	-	-	-	484	-
Stage 2	-	-	-	-	249	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.8	227.9
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	108	-	-	849	-
HCM Lane V/C Ratio	1.209	-	-	0.095	-
HCM Control Delay (s)	227.9	-	-	9.7	0
HCM Lane LOS	F	-	-	A	A
HCM 95th %tile Q(veh)	8.5	-	-	0.3	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Intersection Delay, s/veh	78.8
Intersection LOS	F

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	770	849	270	868
Demand Flow Rate, veh/h	799	867	270	890
Vehicles Circulating, veh/h	485	514	1001	634
Vehicles Exiting, veh/h	1039	757	283	747
Ped Vol Crossing Leg, #/h	0	0	1	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	42.8	71.7	18.2	136.6
Approach LOS	E	F	C	F

Lane	Left	Left	Left	Left
Designated Moves	LT	TR	LTR	LR
Assumed Moves	LT	TR	LTR	LR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	799	867	270	890
Cap Entry Lane, veh/h	841	817	497	723
Entry HV Adj Factor	0.964	0.979	1.000	0.975
Flow Entry, veh/h	770	849	270	868
Cap Entry, veh/h	811	800	497	705
V/C Ratio	0.950	1.061	0.543	1.231
Control Delay, s/veh	42.8	71.7	18.2	136.6
LOS	E	F	C	F
95th %tile Queue, veh	15	21	3	31

Intersection	
Int Delay, s/veh	1.4

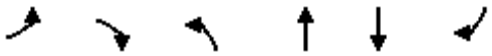
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	97	602	2	220	646	26	5	62	296	41	93	141
Future Vol, veh/h	97	602	2	220	646	26	5	62	296	41	93	141
Conflicting Peds, #/hr	0	0	0	0	0	0	2	0	0	0	0	2
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	150	-	-	-	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	0	2	0	6	2	0	0	0	2	0	0	0
Mvmt Flow	102	634	2	232	680	27	5	65	312	43	98	148

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	707	0	0	636	0	0	2122	2010	635	2186	1998	696
Stage 1	-	-	-	-	-	-	839	839	-	1158	1158	-
Stage 2	-	-	-	-	-	-	1283	1171	-	1028	840	-
Critical Hdwy	4.1	-	-	4.16	-	-	7.1	6.5	6.22	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.254	-	-	3.5	4	3.318	3.5	4	3.3
Pot Cap-1 Maneuver	901	-	-	928	-	-	37	~ 60	478	~ 33	~ 61	445
Stage 1	-	-	-	-	-	-	363	384	-	241	273	-
Stage 2	-	-	-	-	-	-	205	269	-	285	384	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	901	-	-	928	-	-	-	~ 40	478	-	~ 41	444
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	~ 40	-	-	~ 41	-
Stage 1	-	-	-	-	-	-	322	341	-	214	205	-
Stage 2	-	-	-	-	-	-	53	202	-	71	341	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.3	2.5		
HCM LOS			-	-

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	-	901	-	-	928	-	-	-	90
HCM Lane V/C Ratio	-	0.113	-	-	0.25	-	-	-	2.737
HCM Control Delay (s)	-	9.5	-	-	10.2	-	-	-	$ 885.2
HCM Lane LOS	-	A	-	-	B	-	-	-	F
HCM 95th %tile Q(veh)	-	0.4	-	-	1	-	-	-	23.5

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



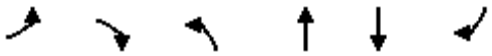
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	646	257	424	1896	1460	510
v/c Ratio	1.04	0.51	0.81	0.83	0.92	0.54
Control Delay	94.6	8.9	62.1	10.4	9.3	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	94.6	8.9	62.1	10.4	9.3	0.3
Queue Length 50th (ft)	~284	0	173	258	97	0
Queue Length 95th (ft)	#402	73	m181	m245	m34	m0
Internal Link Dist (ft)	1276			1895	1010	
Turn Bay Length (ft)		200	325			250
Base Capacity (vph)	619	500	566	2304	1586	945
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.04	0.51	0.75	0.82	0.92	0.54

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

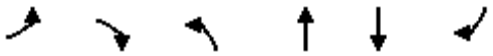
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	627	249	411	1839	1416	495
Future Volume (vph)	627	249	411	1839	1416	495
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	4.5	5.5	5.5	5.5	5.5
Lane Util. Factor	0.97	1.00	0.97	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3101	1473	3162	3197	3137	1444
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3101	1473	3162	3197	3137	1444
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	646	257	424	1896	1460	510
RTOR Reduction (vph)	0	206	0	0	0	215
Lane Group Flow (vph)	646	51	424	1896	1460	295
Heavy Vehicles (%)	4%	1%	2%	4%	6%	3%
Turn Type	Prot	Perm	Prot	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	24.0	24.0	19.8	86.0	60.7	60.7
Effective Green, g (s)	24.0	24.0	19.8	86.0	60.7	60.7
Actuated g/C Ratio	0.20	0.20	0.17	0.72	0.51	0.51
Clearance Time (s)	4.5	4.5	5.5	5.5	5.5	5.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	620	294	521	2291	1586	730
v/s Ratio Prot	c0.21		0.13	c0.59	c0.47	
v/s Ratio Perm		0.03				0.20
v/c Ratio	1.04	0.17	0.81	0.83	0.92	0.40
Uniform Delay, d1	48.0	39.8	48.3	11.8	27.4	18.4
Progression Factor	1.00	1.00	1.13	0.68	0.25	0.04
Incremental Delay, d2	47.5	0.3	5.5	2.0	1.1	0.2
Delay (s)	95.5	40.1	60.1	10.1	8.0	1.0
Level of Service	F	D	E	B	A	A
Approach Delay (s)	79.7			19.3	6.2	
Approach LOS	E			B	A	

Intersection Summary			
HCM 2000 Control Delay	24.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	15.5
Intersection Capacity Utilization	87.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



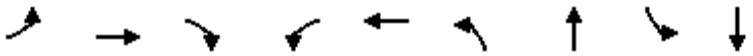
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	627	249	411	1839	1416	495
Future Volume (veh/h)	627	249	411	1839	1416	495
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1695	1736	1723	1695	1668	1709
Adj Flow Rate, veh/h	646	257	424	1896	1460	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	4	1	2	4	6	3
Cap, veh/h	613	288	476	2322	1666	
Arrive On Green	0.20	0.20	0.30	1.00	0.70	0.00
Sat Flow, veh/h	3132	1471	3183	3306	3253	1448
Grp Volume(v), veh/h	646	257	424	1896	1460	0
Grp Sat Flow(s),veh/h/ln	1566	1471	1591	1611	1585	1448
Q Serve(g_s), s	23.5	20.4	15.3	0.0	43.0	0.0
Cycle Q Clear(g_c), s	23.5	20.4	15.3	0.0	43.0	0.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	613	288	476	2322	1666	
V/C Ratio(X)	1.05	0.89	0.89	0.82	0.88	
Avail Cap(c_a), veh/h	613	288	570	2322	1666	
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.33	1.33
Upstream Filter(I)	1.00	1.00	0.09	0.09	0.09	0.00
Uniform Delay (d), s/veh	48.3	47.0	41.1	0.0	15.0	0.0
Incr Delay (d2), s/veh	51.1	27.4	1.6	0.3	0.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.5	17.6	5.2	0.1	11.8	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	99.3	74.4	42.8	0.3	15.7	0.0
LnGrp LOS	F	E	D	A	B	
Approach Vol, veh/h	903			2320	1460	A
Approach Delay, s/veh	92.2			8.1	15.7	
Approach LOS	F			A	B	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		92.0		28.0	23.4	68.6
Change Period (Y+Rc), s		5.5		4.5	5.5	5.5
Max Green Setting (Gmax), s		86.5		23.5	21.5	59.5
Max Q Clear Time (g_c+I1), s		2.0		25.5	17.3	45.0
Green Ext Time (p_c), s		33.7		0.0	0.7	9.2

Intersection Summary	
HCM 6th Ctrl Delay	26.7
HCM 6th LOS	C

Notes

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	62	216	170	278	665	303	1756	96	1401
v/c Ratio	0.46	0.60	0.39	1.18	0.87	0.99	1.04	0.67	1.02
Control Delay	40.5	49.4	8.2	150.4	52.7	86.4	63.0	31.0	66.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.5	49.4	8.2	150.4	52.7	86.4	63.0	31.0	66.7
Queue Length 50th (ft)	33	147	0	~197	235	~234	~806	37	~625
Queue Length 95th (ft)	67	227	56	#394	#311	#416	#949	m40	m#737
Internal Link Dist (ft)		398			1911		874		1895
Turn Bay Length (ft)	150			150		150		175	
Base Capacity (vph)	134	411	473	236	803	305	1682	143	1369
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.46	0.53	0.36	1.18	0.83	0.99	1.04	0.67	1.02

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

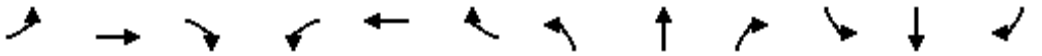
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	62	216	170	278	449	216	303	1603	153	96	1371	30
Future Volume (vph)	62	216	170	278	449	216	303	1603	153	96	1371	30
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.95		1.00	0.99		1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1662	1733	1449	1629	3075		1646	3127		1646	3128	
Flt Permitted	0.16	1.00	1.00	0.39	1.00		0.07	1.00		0.08	1.00	
Satd. Flow (perm)	277	1733	1449	670	3075		124	3127		134	3128	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	62	216	170	278	449	216	303	1603	153	96	1371	30
RTOR Reduction (vph)	0	0	133	0	49	0	0	6	0	0	1	0
Lane Group Flow (vph)	62	216	37	278	616	0	303	1750	0	96	1400	0
Confl. Peds. (#/hr)	2		2	2		2	2		1	1		2
Heavy Vehicles (%)	0%	1%	1%	2%	2%	3%	1%	5%	2%	1%	6%	3%
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)	30.3	25.9	25.9	34.5	28.0		74.1	63.4		57.8	51.6	
Effective Green, g (s)	30.3	25.9	25.9	34.5	28.0		74.1	63.4		57.8	51.6	
Actuated g/C Ratio	0.25	0.22	0.22	0.29	0.23		0.62	0.53		0.48	0.43	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	120	374	312	244	717		304	1652		142	1345	
v/s Ratio Prot	0.02	0.12		c0.06	0.20		c0.15	c0.56		0.03	0.45	
v/s Ratio Perm	0.11		0.03	c0.27			0.47			0.29		
v/c Ratio	0.52	0.58	0.12	1.14	0.86		1.00	1.06		0.68	1.04	
Uniform Delay, d1	35.9	42.1	37.9	43.1	44.1		39.7	28.3		26.0	34.2	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		0.97	1.33	
Incremental Delay, d2	3.7	2.2	0.2	100.4	10.0		50.4	39.8		6.0	28.8	
Delay (s)	39.7	44.3	38.0	143.5	54.1		90.0	68.1		31.1	74.3	
Level of Service	D	D	D	F	D		F	E		C	E	
Approach Delay (s)		41.3			80.5			71.4			71.6	
Approach LOS		D			F			E			E	

Intersection Summary			
HCM 2000 Control Delay	70.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.12		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	104.6%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	62	216	170	278	449	216	303	1603	153	96	1371	30
Future Volume (veh/h)	62	216	170	278	449	216	303	1603	153	96	1371	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1750	1736	1736	1723	1723	1709	1736	1682	1723	1736	1668	1709
Adj Flow Rate, veh/h	62	216	170	278	449	216	303	1603	153	96	1371	30
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	1	1	2	2	3	1	5	2	1	6	3
Cap, veh/h	145	377	319	246	498	237	272	1574	149	135	1452	32
Arrive On Green	0.04	0.22	0.22	0.05	0.23	0.23	0.12	0.53	0.53	0.03	0.31	0.31
Sat Flow, veh/h	1667	1736	1467	1641	2147	1024	1654	2950	279	1654	3171	69
Grp Volume(v), veh/h	62	216	170	278	341	324	303	860	896	96	685	716
Grp Sat Flow(s),veh/h/ln	1667	1736	1467	1641	1637	1535	1654	1598	1631	1654	1585	1656
Q Serve(g_s), s	3.4	13.3	12.3	6.5	24.3	24.6	14.5	64.0	64.0	3.7	50.6	50.7
Cycle Q Clear(g_c), s	3.4	13.3	12.3	6.5	24.3	24.6	14.5	64.0	64.0	3.7	50.6	50.7
Prop In Lane	1.00		1.00	1.00		0.67	1.00		0.17	1.00		0.04
Lane Grp Cap(c), veh/h	145	377	319	246	379	356	272	852	870	135	726	758
V/C Ratio(X)	0.43	0.57	0.53	1.13	0.90	0.91	1.11	1.01	1.03	0.71	0.94	0.95
Avail Cap(c_a), veh/h	155	412	349	246	402	377	272	852	870	136	726	758
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.67	0.67	0.67
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.39	0.39	0.39
Uniform Delay (d), s/veh	36.8	42.0	41.6	46.9	44.8	44.9	37.8	28.0	28.0	28.7	40.1	40.1
Incr Delay (d2), s/veh	2.0	1.6	1.4	96.7	21.9	24.7	88.0	33.2	38.3	6.6	11.2	11.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	5.9	4.6	11.1	12.1	11.8	14.8	31.0	32.9	1.7	22.7	23.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.8	43.6	43.0	143.6	66.7	69.6	125.8	61.2	66.3	35.4	51.3	51.1
LnGrp LOS	D	D	D	F	E	E	F	F	F	D	D	D
Approach Vol, veh/h		448			943			2059			1497	
Approach Delay, s/veh		42.7			90.3			72.9			50.2	
Approach LOS		D			F			E			D	

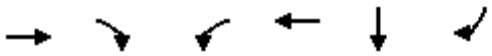
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.9	68.5	11.0	30.6	19.0	59.4	9.3	32.3
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.5	61.5	6.5	28.5	14.5	52.5	5.5	29.5
Max Q Clear Time (g_c+I1), s	5.7	66.0	8.5	15.3	16.5	52.7	5.4	26.6
Green Ext Time (p_c), s	0.0	0.0	0.0	1.5	0.0	0.0	0.0	1.2

Intersection Summary	
HCM 6th Ctrl Delay	66.6
HCM 6th LOS	E

Intersection	
Intersection Delay, s/veh	29.4
Intersection LOS	D

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	415	777	316	688
Demand Flow Rate, veh/h	419	793	325	688
Vehicles Circulating, veh/h	469	479	769	578
Vehicles Exiting, veh/h	797	615	119	694
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	10.7	39.9	14.6	35.7
Approach LOS	B	E	B	E

Lane	Left	Left	Left	Left
Designated Moves	TR	LT	LR	LTR
Assumed Moves	TR	LT	LR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	419	793	325	688
Cap Entry Lane, veh/h	855	847	630	765
Entry HV Adj Factor	0.990	0.980	0.972	1.000
Flow Entry, veh/h	415	777	316	688
Cap Entry, veh/h	847	830	612	765
V/C Ratio	0.490	0.937	0.516	0.899
Control Delay, s/veh	10.7	39.9	14.6	35.7
LOS	B	E	B	E
95th %tile Queue, veh	3	14	3	12

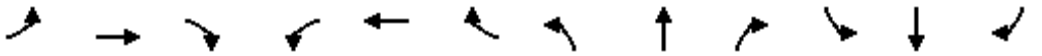


Lane Group	EBT	EBR	WBL	WBT	SBT	SBR
Lane Group Flow (vph)	293	229	709	772	229	219
v/c Ratio	0.75	0.46	0.97	0.69	0.67	0.48
Control Delay	37.7	6.7	45.3	12.7	35.0	8.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.7	6.7	45.3	12.7	35.0	8.3
Queue Length 50th (ft)	113	0	~239	182	91	6
Queue Length 95th (ft)	#192	49	#495	353	151	55
Internal Link Dist (ft)	565			624	775	
Turn Bay Length (ft)		85	100			200
Base Capacity (vph)	445	537	729	1127	427	524
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.66	0.43	0.97	0.69	0.54	0.42

Intersection Summary

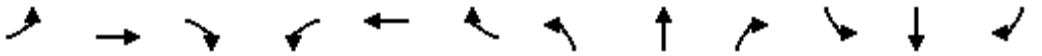
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	293	229	709	772	0	0	0	0	229	0	219
Future Volume (vph)	0	293	229	709	772	0	0	0	0	229	0	219
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		5.0	5.0	5.0	5.0						5.0	5.0
Lane Util. Factor		1.00	1.00	1.00	1.00						1.00	1.00
Frpb, ped/bikes		1.00	0.97	1.00	1.00						1.00	1.00
Flpb, ped/bikes		1.00	1.00	1.00	1.00						1.00	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						0.95	1.00
Satd. Flow (prot)		1733	1430	1645	1733						1662	1458
Flt Permitted		1.00	1.00	0.29	1.00						0.95	1.00
Satd. Flow (perm)		1733	1430	496	1733						1662	1458
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	293	229	709	772	0	0	0	0	229	0	219
RTOR Reduction (vph)	0	0	177	0	0	0	0	0	0	0	0	160
Lane Group Flow (vph)	0	293	52	709	772	0	0	0	0	0	229	59
Confl. Peds. (#/hr)			4	4								
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	0%	1%	1%	1%	1%	0%	0%	0%	0%	0%	0%	2%
Turn Type		NA	Perm	pm+pt	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases			2	6						4		4
Actuated Green, G (s)		15.8	15.8	45.6	45.6						14.4	14.4
Effective Green, g (s)		15.8	15.8	45.6	45.6						14.4	14.4
Actuated g/C Ratio		0.23	0.23	0.65	0.65						0.21	0.21
Clearance Time (s)		5.0	5.0	5.0	5.0						5.0	5.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0						3.0	3.0
Lane Grp Cap (vph)		391	322	730	1128						341	299
v/s Ratio Prot		0.17		c0.34	0.45							
v/s Ratio Perm			0.04	c0.29							0.14	0.04
v/c Ratio		0.75	0.16	0.97	0.68						0.67	0.20
Uniform Delay, d1		25.3	21.8	13.5	7.7						25.6	23.0
Progression Factor		1.00	1.00	1.00	1.00						1.00	1.00
Incremental Delay, d2		12.4	1.1	26.2	3.4						5.1	0.3
Delay (s)		37.7	22.8	39.7	11.1						30.8	23.3
Level of Service		D	C	D	B						C	C
Approach Delay (s)		31.2			24.8			0.0			27.1	
Approach LOS		C			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	26.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	124.0%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	293	229	709	772	0	0	0	0	229	0	219
Future Volume (veh/h)	0	293	229	709	772	0	0	0	0	229	0	219
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1736	1736	1736	1736	0				1750	1750	1723
Adj Flow Rate, veh/h	0	293	229	709	772	0				229	0	219
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Percent Heavy Veh, %	0	1	1	1	1	0				0	0	2
Cap, veh/h	0	567	467	707	1162	0				313	0	274
Arrive On Green	0.00	0.33	0.33	0.27	0.67	0.00				0.19	0.00	0.19
Sat Flow, veh/h	0	1736	1432	1654	1736	0				1667	0	1460
Grp Volume(v), veh/h	0	293	229	709	772	0				229	0	219
Grp Sat Flow(s),veh/h/ln	0	1736	1432	1654	1736	0				1667	0	1460
Q Serve(g_s), s	0.0	9.6	9.0	19.0	18.5	0.0				9.1	0.0	10.0
Cycle Q Clear(g_c), s	0.0	9.6	9.0	19.0	18.5	0.0				9.1	0.0	10.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	567	467	707	1162	0				313	0	274
V/C Ratio(X)	0.00	0.52	0.49	1.00	0.66	0.00				0.73	0.00	0.80
Avail Cap(c_a), veh/h	0	567	467	707	1162	0				429	0	375
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.09	0.09	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	19.1	18.9	11.7	6.9	0.0				26.8	0.0	27.2
Incr Delay (d2), s/veh	0.0	3.3	3.6	11.0	0.3	0.0				4.1	0.0	8.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	4.1	3.3	7.5	5.0	0.0				3.8	0.0	4.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	22.4	22.5	22.7	7.2	0.0				30.9	0.0	35.5
LnGrp LOS	A	C	C	F	A	A				C	A	D
Approach Vol, veh/h		522			1481						448	
Approach Delay, s/veh		22.5			14.6						33.1	
Approach LOS		C			B						C	

Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	24.0	27.9		18.1		51.9						
Change Period (Y+Rc), s	5.0	5.0		5.0		5.0						
Max Green Setting (Gmax), s	19.0	18.0		18.0		42.0						
Max Q Clear Time (g_c+I1), s	21.0	11.6		12.0		20.5						
Green Ext Time (p_c), s	0.0	1.4		1.1		5.8						

Intersection Summary												
HCM 6th Ctrl Delay			19.7									
HCM 6th LOS			B									

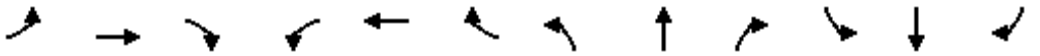


Lane Group	EBL	EBT	WBT	WBR	NBL	NBT
Lane Group Flow (vph)	147	466	895	450	588	649
v/c Ratio	0.68	0.49	1.28	0.59	1.16	0.94
Control Delay	27.3	12.2	159.6	9.0	118.4	35.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.3	12.2	159.6	9.0	118.4	35.0
Queue Length 50th (ft)	29	115	~504	41	~309	130
Queue Length 95th (ft)	#94	187	#713	124	#492	#352
Internal Link Dist (ft)		624	360			760
Turn Bay Length (ft)	100			150	160	
Base Capacity (vph)	216	946	700	760	507	692
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.68	0.49	1.28	0.59	1.16	0.94

Intersection Summary

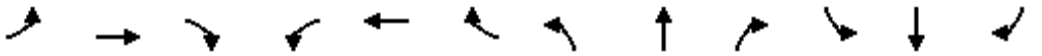
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	147	466	0	0	895	450	588	0	649	0	0	0
Future Volume (vph)	147	466	0	0	895	450	588	0	649	0	0	0
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	5.0	5.0			5.0	5.0	5.0	5.0				
Lane Util. Factor	1.00	1.00			1.00	1.00	1.00	1.00				
Frpb, ped/bikes	1.00	1.00			1.00	0.98	1.00	1.00				
Flpb, ped/bikes	1.00	1.00			1.00	1.00	1.00	1.00				
Frt	1.00	1.00			1.00	0.85	1.00	0.85				
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00				
Satd. Flow (prot)	1662	1733			1733	1436	1627	1430				
Flt Permitted	0.12	1.00			1.00	1.00	0.95	1.00				
Satd. Flow (perm)	209	1733			1733	1436	1627	1430				
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	147	466	0	0	895	450	588	0	649	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	180	0	246	0	0	0	0
Lane Group Flow (vph)	147	466	0	0	895	270	588	403	0	0	0	0
Confl. Peds. (#/hr)	2		2	2		2	1					1
Confl. Bikes (#/hr)						1						
Heavy Vehicles (%)	0%	1%	0%	0%	1%	1%	2%	0%	4%	0%	0%	0%
Turn Type	pm+pt	NA			NA	Perm	Perm	NA				
Protected Phases	5	2			6			8				
Permitted Phases	2					6	8					
Actuated Green, G (s)	38.5	38.5			28.5	28.5	22.0	22.0				
Effective Green, g (s)	38.5	38.5			28.5	28.5	22.0	22.0				
Actuated g/C Ratio	0.55	0.55			0.40	0.40	0.31	0.31				
Clearance Time (s)	5.0	5.0			5.0	5.0	5.0	5.0				
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0				
Lane Grp Cap (vph)	217	946			700	580	507	446				
v/s Ratio Prot	0.05	c0.27			c0.52			0.28				
v/s Ratio Perm	0.32					0.19	c0.36					
v/c Ratio	0.68	0.49			1.28	0.47	1.16	0.90				
Uniform Delay, d1	14.7	9.9			21.0	15.4	24.2	23.2				
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00				
Incremental Delay, d2	8.1	1.8			136.2	2.7	92.0	21.2				
Delay (s)	22.8	11.8			157.2	18.1	116.3	44.5				
Level of Service	C	B			F	B	F	D				
Approach Delay (s)		14.4			110.7			78.6			0.0	
Approach LOS		B			F			E			A	

Intersection Summary			
HCM 2000 Control Delay	79.8	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.18		
Actuated Cycle Length (s)	70.5	Sum of lost time (s)	15.0
Intersection Capacity Utilization	124.0%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	147	466	0	0	895	450	588	0	649	0	0	0
Future Volume (veh/h)	147	466	0	0	895	450	588	0	649	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1750	1736	0	0	1736	1736	1723	1750	1695			
Adj Flow Rate, veh/h	147	466	0	0	895	450	588	0	649			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Percent Heavy Veh, %	0	1	0	0	1	1	2	0	4			
Cap, veh/h	227	1171	0	0	930	770	516	0	465			
Arrive On Green	0.07	0.67	0.00	0.00	0.54	0.54	0.31	0.00	0.31			
Sat Flow, veh/h	1667	1736	0	0	1736	1438	1641	0	1481			
Grp Volume(v), veh/h	147	466	0	0	895	450	588	0	649			
Grp Sat Flow(s),veh/h/ln	1667	1736	0	0	1736	1438	1641	0	1481			
Q Serve(g_s), s	2.5	8.4	0.0	0.0	34.6	14.8	22.0	0.0	22.0			
Cycle Q Clear(g_c), s	2.5	8.4	0.0	0.0	34.6	14.8	22.0	0.0	22.0			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	227	1171	0	0	930	770	516	0	465			
V/C Ratio(X)	0.65	0.40	0.00	0.00	0.96	0.58	1.14	0.00	1.39			
Avail Cap(c_a), veh/h	234	1171	0	0	930	770	516	0	465			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.58	0.58	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	16.3	5.1	0.0	0.0	15.6	11.0	24.0	0.0	24.0			
Incr Delay (d2), s/veh	3.4	0.6	0.0	0.0	21.8	3.2	84.4	0.0	190.3			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	1.4	2.4	0.0	0.0	17.0	4.7	19.9	0.0	31.7			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.7	5.7	0.0	0.0	37.4	14.2	108.4	0.0	214.3			
LnGrp LOS	B	A	A	A	D	B	F	A	F			
Approach Vol, veh/h		613			1345			1237				
Approach Delay, s/veh		9.0			29.6			164.0				
Approach LOS		A			C			F				
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		52.4			9.7	42.7		27.0				
Change Period (Y+Rc), s		5.0			5.0	5.0		5.0				
Max Green Setting (Gmax), s		38.5			5.0	28.5		22.0				
Max Q Clear Time (g_c+I1), s		10.4			4.5	36.6		24.0				
Green Ext Time (p_c), s		3.2			0.0	0.0		0.0				
Intersection Summary												
HCM 6th Ctrl Delay			77.7									
HCM 6th LOS			E									

Intersection	
Intersection Delay, s/veh	49.8
Intersection LOS	E

Approach	EB	WB	NB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	973	946	494
Demand Flow Rate, veh/h	1012	955	533
Vehicles Circulating, veh/h	19	473	815
Vehicles Exiting, veh/h	1409	875	216
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	14.2	90.4	42.3
Approach LOS	B	F	E

Lane	Left	Left	Left
Designated Moves	TR	LT	LR
Assumed Moves	TR	LT	LR
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	1012	955	533
Cap Entry Lane, veh/h	1353	852	601
Entry HV Adj Factor	0.961	0.990	0.927
Flow Entry, veh/h	973	946	494
Cap Entry, veh/h	1301	844	557
V/C Ratio	0.748	1.121	0.887
Control Delay, s/veh	14.2	90.4	42.3
LOS	B	F	E
95th %tile Queue, veh	8	26	10

APPENDIX 7: MUTCD SIGNAL WARRANT ANALYSIS

TRANSIGHT CONSULTING, LLC
Transportation Engineering and Planning Services

Project #:	1724
Project Name:	Redmond East Gateway
Analyst:	JWW
Date:	6/27/2024
North-South Street:	NE 9th Street
East-West Street:	E Antler Avenue
Intersection:	NE 9th Street/E Antler Avenue
Scenario:	Year 2040 With-Site Conditions

Volume-Based Warrant Summary			
Warrant No.	Description	Warrant Factor	Met?
Warrant 1:	Eight-Hour Vehicular Volume	100%	Yes
Warrant 2:	Four-Hour Vehicular Volume	100%	Yes
Warrant 3:	Peak Hour	100%	Yes

Volume Adjustment Factor:	1.0
North-South Approach:	Major
East-West Approach:	Minor
Major Street No. Thru Lanes:	1
Minor Street No, Thru Lanes:	1
Speed Factor (Speed >40mph):	No
Population Factor (Population <10,000):	No
Warrant Factor:	100%
Peak Hour/Daily Count:	Peak Hour

Major Road	Minor Road
Rural Interstate	Rural Interstate
Rural Principal Arterial	Rural Principal Arterial
Rural Minor Arterial	Rural Minor Arterial
Rural Major Collector	Rural Major Collector
Rural Minor Collector	Rural Minor Collector
Urban Interstate	Urban Interstate
Urban Other Frwy & Expwy	Urban Other Frwy & Expwy
Urban Principal Arterial	Urban Principal Arterial
Urban Minor Arterial	Urban Minor Arterial
Case: 9	Case: 9

Peak Hour Traffic Volumes			
Major Street		Minor Street	
NB	SB	EB	WB
585	572	266	110

Planning Growth Factors		
NB	1.00	1.00
SB	1.00	
EB	1.00	
WB	1.00	

Traffic Volumes		Traffic Volume Profile				Hourly Profiles (NCHRP 03-110)	
		Major Street		Minor Street		Major Street Profile	Minor Street Profile
		NB	SB	EB	WB		
12:00 AM	Highest Hour	585	572	266	110	1.00	1.00
2	Highest Hour	554	541	252	104	0.95	0.95
3	Highest Hour	546	534	248	103	0.93	0.93
4	Highest Hour	523	511	238	98	0.89	0.89
5	Highest Hour	515	503	234	97	0.88	0.88
6	Highest Hour	515	503	234	97	0.88	0.88
7	Highest Hour	491	480	223	92	0.84	0.84
8	Highest Hour	484	473	220	91	0.83	0.83
9	Highest Hour	468	458	213	88	0.80	0.80
10	Highest Hour	437	427	199	82	0.75	0.75
11	Highest Hour	421	412	192	79	0.72	0.72
12	Highest Hour	413	404	188	78	0.71	0.71
13	Highest Hour	398	389	181	75	0.68	0.68
14	Highest Hour	343	336	156	65	0.59	0.59
15	Highest Hour	273	267	124	51	0.47	0.47
16	Highest Hour	257	252	117	48	0.44	0.44
17	Highest Hour	179	175	82	34	0.31	0.31
18	Highest Hour	148	145	67	28	0.25	0.25
19	Highest Hour	78	76	35	15	0.13	0.13
20	Highest Hour	55	53	25	10	0.09	0.09
21	Highest Hour	47	46	21	9	0.08	0.08
22	Highest Hour	31	31	14	6	0.05	0.05
23	Highest Hour	16	15	7	3	0.03	0.03
24	Highest Hour	16	15	7	3	0.03	0.03

TRANSIGHT CONSULTING, LLC
Transportation Engineering and Planning Services

Project #:	1724
Project Name:	Redmond East Gateway
Analyst:	JWW
Date:	6/27/2024
North-South Street:	NE 9th Street
East-West Street:	Evergreen Avenue
Intersection:	NE 9th Street/Evergreen Avenue
Scenario:	Year 2040 With-Site Conditions

Volume-Based Warrant Summary			
Warrant No.	Description	Warrant Factor	Met?
Warrant 1:	Eight-Hour Vehicular Volume	100%	Yes
Warrant 2:	Four-Hour Vehicular Volume	100%	Yes
Warrant 3:	Peak Hour	100%	Yes

Volume Adjustment Factor:	1.0
North-South Approach:	Major
East-West Approach:	Minor
Major Street No. Thru Lanes:	1
Minor Street No, Thru Lanes:	1
Speed Factor (Speed >40mph):	No
Population Factor (Population <10,000):	No
Warrant Factor:	100%
Peak Hour/Daily Count:	Peak Hour

Major Road	Minor Road
Rural Interstate	Rural Interstate
Rural Principal Arterial	Rural Principal Arterial
Rural Minor Arterial	Rural Minor Arterial
Rural Major Collector	Rural Major Collector
Rural Minor Collector	Rural Minor Collector
Urban Interstate	Urban Interstate
Urban Other Frwy & Expwy	Urban Other Frwy & Expwy
Urban Principal Arterial	Urban Principal Arterial
Urban Minor Arterial	Urban Minor Arterial
Case: 9	Case: 9

Peak Hour Traffic Volumes			
Major Street		Minor Street	
NB	SB	EB	WB
682	666	21	467

Planning Growth Factors		
NB	1.00	1.00
SB	1.00	
EB	1.00	
WB	1.00	

Traffic Volumes		Traffic Volume Profile				Hourly Profiles (NCHRP 03-110)	
		Major Street		Minor Street		Major Street Profile	Minor Street Profile
		NB	SB	EB	WB		
12:00 AM	Highest Hour	682	666	21	467	1.00	1.00
2	Highest Hour	646	630	20	442	0.95	0.95
3	Highest Hour	637	622	20	436	0.93	0.93
4	Highest Hour	609	595	19	417	0.89	0.89
5	Highest Hour	600	586	18	411	0.88	0.88
6	Highest Hour	600	586	18	411	0.88	0.88
7	Highest Hour	573	559	18	392	0.84	0.84
8	Highest Hour	564	551	17	386	0.83	0.83
9	Highest Hour	546	533	17	374	0.80	0.80
10	Highest Hour	509	497	16	349	0.75	0.75
11	Highest Hour	491	480	15	336	0.72	0.72
12	Highest Hour	482	471	15	330	0.71	0.71
13	Highest Hour	464	453	14	318	0.68	0.68
14	Highest Hour	400	391	12	274	0.59	0.59
15	Highest Hour	318	311	10	218	0.47	0.47
16	Highest Hour	300	293	9	205	0.44	0.44
17	Highest Hour	209	204	6	143	0.31	0.31
18	Highest Hour	173	169	5	118	0.25	0.25
19	Highest Hour	91	89	3	62	0.13	0.13
20	Highest Hour	64	62	2	44	0.09	0.09
21	Highest Hour	55	53	2	37	0.08	0.08
22	Highest Hour	36	36	1	25	0.05	0.05
23	Highest Hour	18	18	1	12	0.03	0.03
24	Highest Hour	18	18	1	12	0.03	0.03

TRANSIGHT CONSULTING, LLC
Transportation Engineering and Planning Services

Project #:	1724
Project Name:	Redmond East Gateway
Analyst:	JWW
Date:	6/27/2024
North-South Street:	NE 9th Street
East-West Street:	NE Hemlock Avenue
Intersection:	NE 9th Street/NE Hemlock Avenue
Scenario:	Year 2040 With-Site Conditions

Volume-Based Warrant Summary			
Warrant No.	Description	Warrant Factor	Met?
Warrant 1:	Eight-Hour Vehicular Volume	100%	Yes
Warrant 2:	Four-Hour Vehicular Volume	100%	Yes
Warrant 3:	Peak Hour	100%	Yes

Volume Adjustment Factor:	1.0
North-South Approach:	Major
East-West Approach:	Minor
Major Street No. Thru Lanes:	1
Minor Street No, Thru Lanes:	1
Speed Factor (Speed >40mph):	No
Population Factor (Population <10,000):	No
Warrant Factor:	100%
Peak Hour/Daily Count:	Peak Hour

Major Road	Minor Road
Rural Interstate	Rural Interstate
Rural Principal Arterial	Rural Principal Arterial
Rural Minor Arterial	Rural Minor Arterial
Rural Major Collector	Rural Major Collector
Rural Minor Collector	Rural Minor Collector
Urban Interstate	Urban Interstate
Urban Other Frwy & Expwy	Urban Other Frwy & Expwy
Urban Principal Arterial	Urban Principal Arterial
Urban Minor Arterial	Urban Minor Arterial
Case: 9	Case: 9

Peak Hour Traffic Volumes			
Major Street		Minor Street	
NB	SB	EB	WB
657	344	215	90

Planning Growth Factors		
NB	1.00	1.00
SB	1.00	
EB	1.00	
WB	1.00	

Traffic Volumes		Traffic Volume Profile				Hourly Profiles (NCHRP 03-110)	
		Major Street		Minor Street		Major Street Profile	Minor Street Profile
		NB	SB	EB	WB		
12:00 AM	Highest Hour	657	344	215	90	1.00	1.00
2	Highest Hour	622	326	204	85	0.95	0.95
3	Highest Hour	613	321	201	84	0.93	0.93
4	Highest Hour	587	307	192	80	0.89	0.89
5	Highest Hour	578	303	189	79	0.88	0.88
6	Highest Hour	578	303	189	79	0.88	0.88
7	Highest Hour	552	289	181	76	0.84	0.84
8	Highest Hour	543	284	178	74	0.83	0.83
9	Highest Hour	526	275	172	72	0.80	0.80
10	Highest Hour	491	257	161	67	0.75	0.75
11	Highest Hour	473	248	155	65	0.72	0.72
12	Highest Hour	464	243	152	64	0.71	0.71
13	Highest Hour	447	234	146	61	0.68	0.68
14	Highest Hour	385	202	126	53	0.59	0.59
15	Highest Hour	307	161	100	42	0.47	0.47
16	Highest Hour	289	151	95	40	0.44	0.44
17	Highest Hour	201	105	66	28	0.31	0.31
18	Highest Hour	166	87	54	23	0.25	0.25
19	Highest Hour	88	46	29	12	0.13	0.13
20	Highest Hour	61	32	20	8	0.09	0.09
21	Highest Hour	53	28	17	7	0.08	0.08
22	Highest Hour	35	18	11	5	0.05	0.05
23	Highest Hour	18	9	6	2	0.03	0.03
24	Highest Hour	18	9	6	2	0.03	0.03

TRANSIGHT CONSULTING, LLC
Transportation Engineering and Planning Services

Project #:	1724
Project Name:	Redmond East Gateway
Analyst:	JWW
Date:	6/27/2024
North-South Street:	NE 9th Street
East-West Street:	NE Maple Avenue
Intersection:	NE 9th Street/NE Maple Avenue
Scenario:	Year 2040 With-Site Conditions

Volume-Based Warrant Summary			
Warrant No.	Description	Warrant Factor	Met?
Warrant 1:	Eight-Hour Vehicular Volume	100%	Yes
Warrant 2:	Four-Hour Vehicular Volume	100%	Yes
Warrant 3:	Peak Hour	100%	Yes

Volume Adjustment Factor:	1.0
North-South Approach:	Minor
East-West Approach:	Major
Major Street No. Thru Lanes:	1
Minor Street No, Thru Lanes:	1
Speed Factor (Speed >40mph):	No
Population Factor (Population <10,000):	No
Warrant Factor:	100%
Peak Hour/Daily Count:	Peak Hour

Major Road	Minor Road
Rural Interstate	Rural Interstate
Rural Principal Arterial	Rural Principal Arterial
Rural Minor Arterial	Rural Minor Arterial
Rural Major Collector	Rural Major Collector
Rural Minor Collector	Rural Minor Collector
Urban Interstate	Urban Interstate
Urban Other Frwy & Expwy	Urban Other Frwy & Expwy
Urban Principal Arterial	Urban Principal Arterial
Urban Minor Arterial	Urban Minor Arterial
Case: 9	Case: 9

Peak Hour Traffic Volumes			
Major Street		Minor Street	
EB	WB	NB	SB
288	356	420	0

Planning Growth Factors		
EB	1.00	1.00
WB	1.00	
NB	1.00	
SB	1.00	

Traffic Volumes		Traffic Volume Profile				Hourly Profiles (NCHRP 03-110)	
		Major Street		Minor Street		Major Street Profile	Minor Street Profile
		EB	WB	NB	SB		
12:00 AM	Highest Hour	288	356	420	0	1.00	1.00
2	Highest Hour	273	337	398	0	0.95	0.95
3	Highest Hour	269	332	392	0	0.93	0.93
4	Highest Hour	257	318	375	0	0.89	0.89
5	Highest Hour	253	313	370	0	0.88	0.88
6	Highest Hour	253	313	370	0	0.88	0.88
7	Highest Hour	242	299	353	0	0.84	0.84
8	Highest Hour	238	294	347	0	0.83	0.83
9	Highest Hour	230	285	336	0	0.80	0.80
10	Highest Hour	215	266	314	0	0.75	0.75
11	Highest Hour	207	256	302	0	0.72	0.72
12	Highest Hour	204	252	297	0	0.71	0.71
13	Highest Hour	196	242	286	0	0.68	0.68
14	Highest Hour	169	209	246	0	0.59	0.59
15	Highest Hour	134	166	196	0	0.47	0.47
16	Highest Hour	127	157	185	0	0.44	0.44
17	Highest Hour	88	109	129	0	0.31	0.31
18	Highest Hour	73	90	106	0	0.25	0.25
19	Highest Hour	38	47	56	0	0.13	0.13
20	Highest Hour	27	33	39	0	0.09	0.09
21	Highest Hour	23	28	34	0	0.08	0.08
22	Highest Hour	15	19	22	0	0.05	0.05
23	Highest Hour	8	9	11	0	0.03	0.03
24	Highest Hour	8	9	11	0	0.03	0.03

TRANSIGHT CONSULTING, LLC
Transportation Engineering and Planning Services

Project #:	1724
Project Name:	Redmond East Gateway
Analyst:	JWW
Date:	6/27/2024
North-South Street:	Lake Road
East-West Street:	OR 126
Intersection:	Lake Road/OR 126
Scenario:	Year 2040 With-Site Conditions

Volume-Based Warrant Summary			
Warrant No.	Description	Warrant Factor	Met?
Warrant 1:	Eight-Hour Vehicular Volume	100%	No
Warrant 2:	Four-Hour Vehicular Volume	100%	No
Warrant 3:	Peak Hour	100%	No

Volume Adjustment Factor:	1.0
North-South Approach:	Minor
East-West Approach:	Major
Major Street No. Thru Lanes:	1
Minor Street No, Thru Lanes:	1
Speed Factor (Speed >40mph):	No
Population Factor (Population <10,000):	No
Warrant Factor:	100%
Peak Hour/Daily Count:	Peak Hour

Major Road	Minor Road
Rural Interstate	Rural Interstate
Rural Principal Arterial	Rural Principal Arterial
Rural Minor Arterial	Rural Minor Arterial
Rural Major Collector	Rural Major Collector
Rural Minor Collector	Rural Minor Collector
Urban Interstate	Urban Interstate
Urban Other Frwy & Expwy	Urban Other Frwy & Expwy
Urban Principal Arterial	Urban Principal Arterial
Urban Minor Arterial	Urban Minor Arterial
Case: 9	Case: 9

Peak Hour Traffic Volumes			
Major Street		Minor Street	
EB	WB	NB	SB
713	993	67	0

Planning Growth Factors		
EB	1.00	1.00
WB	1.00	
NB	1.00	
SB	1.00	

Traffic Volumes		Traffic Volume Profile				Hourly Profiles (NCHRP 03-110)	
		Major Street		Minor Street		Major Street Profile	Minor Street Profile
		EB	WB	NB	SB		
12:00 AM	Highest Hour	713	993	67	0	1.00	1.00
2	Highest Hour	675	940	63	0	0.95	0.95
3	Highest Hour	665	927	63	0	0.93	0.93
4	Highest Hour	637	887	60	0	0.89	0.89
5	Highest Hour	627	874	59	0	0.88	0.88
6	Highest Hour	627	874	59	0	0.88	0.88
7	Highest Hour	599	834	56	0	0.84	0.84
8	Highest Hour	589	821	55	0	0.83	0.83
9	Highest Hour	570	794	54	0	0.80	0.80
10	Highest Hour	532	741	50	0	0.75	0.75
11	Highest Hour	513	715	48	0	0.72	0.72
12	Highest Hour	504	702	47	0	0.71	0.71
13	Highest Hour	485	675	46	0	0.68	0.68
14	Highest Hour	418	583	39	0	0.59	0.59
15	Highest Hour	333	463	31	0	0.47	0.47
16	Highest Hour	314	437	29	0	0.44	0.44
17	Highest Hour	219	305	21	0	0.31	0.31
18	Highest Hour	181	252	17	0	0.25	0.25
19	Highest Hour	95	132	9	0	0.13	0.13
20	Highest Hour	67	93	6	0	0.09	0.09
21	Highest Hour	57	79	5	0	0.08	0.08
22	Highest Hour	38	53	4	0	0.05	0.05
23	Highest Hour	19	26	2	0	0.03	0.03
24	Highest Hour	19	26	2	0	0.03	0.03

TRANSIGHT CONSULTING, LLC
Transportation Engineering and Planning Services

Project #:	1724
Project Name:	Redmond East Gateway
Analyst:	JWW
Date:	6/27/2024
North-South Street:	Veterans Way
East-West Street:	OR 126
Intersection:	Veterans Way/OR 126
Scenario:	Year 2040 With-Site Conditions

Volume-Based Warrant Summary			
Warrant No.	Description	Warrant Factor	Met?
Warrant 1:	Eight-Hour Vehicular Volume	100%	Yes
Warrant 2:	Four-Hour Vehicular Volume	100%	Yes
Warrant 3:	Peak Hour	100%	Yes

Volume Adjustment Factor:	1.0
North-South Approach:	Minor
East-West Approach:	Major
Major Street No. Thru Lanes:	1
Minor Street No, Thru Lanes:	1
Speed Factor (Speed >40mph):	No
Population Factor (Population <10,000):	No
Warrant Factor:	100%
Peak Hour/Daily Count:	Peak Hour

Major Road	Minor Road
Rural Interstate	Rural Interstate
Rural Principal Arterial	Rural Principal Arterial
Rural Minor Arterial	Rural Minor Arterial
Rural Major Collector	Rural Major Collector
Rural Minor Collector	Rural Minor Collector
Urban Interstate	Urban Interstate
Urban Other Frwy & Expwy	Urban Other Frwy & Expwy
Urban Principal Arterial	Urban Principal Arterial
Urban Minor Arterial	Urban Minor Arterial
Case: 9	Case: 9

Peak Hour Traffic Volumes			
Major Street		Minor Street	
EB	WB	NB	SB
701	892	362	234

Planning Growth Factors		
EB	1.00	1.00
WB	1.00	
NB	1.00	
SB	1.00	

Traffic Volumes		Traffic Volume Profile				Hourly Profiles (NCHRP 03-110)	
		Major Street		Minor Street		Major Street Profile	Minor Street Profile
		EB	WB	NB	SB		
12:00 AM	Highest Hour	701	892	362	234	1.00	1.00
2	Highest Hour	664	844	343	222	0.95	0.95
3	Highest Hour	654	833	338	218	0.93	0.93
4	Highest Hour	626	797	323	209	0.89	0.89
5	Highest Hour	617	785	319	206	0.88	0.88
6	Highest Hour	617	785	319	206	0.88	0.88
7	Highest Hour	589	749	304	197	0.84	0.84
8	Highest Hour	579	737	299	193	0.83	0.83
9	Highest Hour	561	714	290	187	0.80	0.80
10	Highest Hour	523	666	270	175	0.75	0.75
11	Highest Hour	505	642	261	168	0.72	0.72
12	Highest Hour	495	630	256	165	0.71	0.71
13	Highest Hour	477	607	246	159	0.68	0.68
14	Highest Hour	411	523	212	137	0.59	0.59
15	Highest Hour	327	416	169	109	0.47	0.47
16	Highest Hour	308	392	159	103	0.44	0.44
17	Highest Hour	215	274	111	72	0.31	0.31
18	Highest Hour	178	226	92	59	0.25	0.25
19	Highest Hour	93	119	48	31	0.13	0.13
20	Highest Hour	65	83	34	22	0.09	0.09
21	Highest Hour	56	71	29	19	0.08	0.08
22	Highest Hour	37	48	19	12	0.05	0.05
23	Highest Hour	19	24	10	6	0.03	0.03
24	Highest Hour	19	24	10	6	0.03	0.03